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ARID AGRICULTURE UNIVERSITY
RAWALPINDI

DEPARTMENT OF AGRONOMY
Self Assessment Report
Ph. D. Agronomy
2008 – 2010

Program Team

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INTRODUCTION

The department is involved in production of food, fiber and fodder encompassing many of the same agronomic principles and their application for the management of crop production. Agronomy Department was established in 1984 and started its Ph.D. degree program in 1998. The Department of Agronomy offers research oriented Ph.D. degree program in Agronomy. Students who fulfill the criteria are admitted in Ph.D. Agronomy degrees program. Agronomy degree program is designed to be flexible in order to meet the student’s requirements in different areas of Agronomy viz. Recent advances in agronomy, Plant water relations, Integrated agriculture. The Compulsory courses for Ph.D. students are Statistics and Bio-chemistry.

The Department has highly qualified and experienced faculty mostly having post doctorate research experience from universities of International fame. The faculty has produced 45 publications during the reporting period in journals of national and international repute. The related faculty members have specialization in the fields of Crop Modeling, Crop Production Technology, Advanced Seed Technology, Crop Nutrition, Allelopathy/Weed Management etc. The department is running projects in collaboration with different national and international funding agencies.

CRITERION 1

PROGRAM MISSION, OBJECTIVES AND OUTCOMES

Components of Self Assessment Process:

The Department of Agronomy presents the doctorate students the awareness, technical skills for professional achievements in a changing world. The objective of the department is to increase crop production, quality and profit by employing their potential skills and experienced expertise of the faculties. Department is concerned in the production of food, fiber and fodder encompassing many of the same agronomic principles and their relevance for the management of crops production.

Mission Statements of the Department of Agronomy:

The Mission of the department is to equip and impart training to Ph.D students for high-quality education which should result in increased scientific knowledge and skills for
employment, productive citizenship, and life-long learning. Presently the department is concentrating in the areas of food, agriculture and natural resources.

STANDARDS

Standards 1.1: Documented measurable objectives

Objectives:
The main objectives of the department are to:

1. Build up the Department on modern lines for education and research at Ph.D level.
2. Impart practical knowledge and scientific skills in the concerned subject by employing advanced analytical approaches.
3. Broaden the vision of students by teaching them integrated agriculture.
4. Adherence to new teaching methods & planning for current and future researchable issues.

Outcomes:

1. Department of Agronomy was strengthened by planning the time needed education and research for Ph.D students.
2. Ph.D scholars were imparted practical knowledge using advanced analytical techniques.
3. Integration was achieved through interviews, discussion on latest developments in the field and translation in applied research projects/thesis research.
4. Updating of curricula was done to achieve the objective of anticipation of new teaching/researchable areas.

Main elements of strategic plan to achieve mission and objectives:

- Growth of sound training system based on consultation from world reviews, writing, inventive, measures, symposia, workshops, etc for the award of degrees to these students
- Frequent planning for updating the curricula of core & elective subjects and specialized areas.
- Improving the research labs, equipping with up to date facilities & equipments
- Publication of research data in scientific journals of world repute, books and other literature.
### Program Objectives Assessment

#### Table 1: Objective Assessment

<table>
<thead>
<tr>
<th>Sr. #</th>
<th>Objectives</th>
<th>How measured</th>
<th>When measured</th>
<th>Improvement identified</th>
<th>Improvement made</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Development &amp; Strengthening of Agronomy Department for Doctoral education</td>
<td>On the basis of availability of latest research facilities and practical application of new technology in agronomic areas of agriculture</td>
<td>It is a continuous process as per requirement</td>
<td>Teaching and research methodology is needed to be improved</td>
<td>Teaching and research methods have been revised in order to make them more attractive and understandable</td>
</tr>
<tr>
<td>2.</td>
<td>To impart practical / applied knowledge to the Doctorate scholars.</td>
<td>Through the semestoral, Written and oral comprehensive examinations.</td>
<td>During their Doctorate research and comprehensive examinations</td>
<td>Some new courses and research facilities are needed to be included in the curriculum</td>
<td>Curricula have been revised as per requirement of HEC.</td>
</tr>
<tr>
<td>3</td>
<td>Integration of related field</td>
<td>By examining the students in integration of the things or different aspects in agri. Production.</td>
<td>During semester and comprehensive exams. And research activities</td>
<td>Integrated agriculture subject needed to include in the Ph. D. course work</td>
<td>Integrated agriculture course has been approved for Ph.D. classes</td>
</tr>
</tbody>
</table>
Anticipation of new teaching/researchable areas

With the need of current advancement in the relevant areas

Continuous activity

Time need based new courses research problems are needed to be included in curriculum, problem - research

Approval of new curricula and research areas has been accorded

Standard 1.2: Objectives Vs Outcomes

Table 2: Objectives Vs Outcomes

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Sr.#</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
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<td>4</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
</tbody>
</table>

* Relevant
** Relevant and satisfactory
*** Highly relevant and satisfactory
Performa 1 & 10: Teacher & Course Evaluation

Comparative graph of courses evaluation:

The values for comparative graphs of courses and teachers evaluation were derived from the proformas filled in by the students, and then the impact was calculated according to the formula given by QEC.

![Comparative Graph of Course Evaluation](image)

Comparative graph of teachers’ evaluation:

![Comparative graph of teachers’ evaluation](image)
1. **Dr. Muhammad Ashraf**
   
i. **Teacher Evaluation**

   Data were collected from 5 Ph.D. students. Among the teachers, Prof. Dr. Muhammad Ashraf won the impact of excellent grade (4.41) that was followed by Prof. Dr. F.H. Sahi with very good impact (4.23). The individual parameters showed that the 17% of the students strongly agreed, 64% agreed, 8% uncertain, 10% disagreed, and 1% strongly disagreed that the teacher is fair in examination. Sixty six percent students agreed that the instructor came with good preparation. Similarly, most of the students agreed that instructor demonstrates knowledge of the subject, instructor had completed the whole course, the Instructor provided additional material apart from the textbook, the Instructor gave citations regarding current situations with reference to Pakistani context, the Instructor communicates the subject matter, the Instructor shows respect towards students and encourages class participation effectively, the instructor maintained an environment that was conducive to learning, the Instructor arrived on time, the Instructor returned the graded scripts etc. in a reasonable amount of time, the Instructor was available during the specified office hours after class for consultations, the Subject matter presented in the course has increased their knowledge of the subject, the syllabus clearly states course objectives requirements, procedures and grading criteria, the course integrates theoretical course concepts with real-world applications, and the assignments and exams covered the materials presented in the course, the course material is modern and updated.

**Comments / Suggestions**

1. Environment is friendly and cooperative.

2. Good way of teaching, a man of foresight.

1. The instructor is prepared for each class
   - Strongly agree: 16%
   - Agree: 66%
   - Uncertain: 11%
   - Disagree: 6%
   - Strongly disagree: 1%

2. The instructor demonstrate knowledge of the subject
   - Strongly agree: 12%
   - Agree: 56%
   - Uncertain: 22%
   - Disagree: 6%
   - Strongly disagree: 4%

3. The instructor has completed the whole course
   - Strongly agree: 10%
   - Agree: 63%
   - Uncertain: 14%
   - Disagree: 8%
   - Strongly disagree: 5%

4. The instructor provides additional material apart from the text book
   - Strongly agree: 19%
   - Agree: 57%
   - Uncertain: 8%
   - Disagree: 9%
   - Strongly disagree: 0%

5. The instructor gives citations regarding current situations with reference to Pakistani context
   - Strongly agree: 16%
   - Agree: 63%
   - Uncertain: 14%
   - Disagree: 8%
   - Strongly disagree: 2%

6. The instructor communicates the subject matter effectively
   - Strongly agree: 15%
   - Agree: 68%
   - Uncertain: 8%
   - Disagree: 9%
   - Strongly disagree: 0%
7. The instructors shows respect towards students and encourages class participation

- Strongly agree: 27%
- Agree: 47%
- Uncertain: 19%
- Disagree: 5%
- Strongly disagree: 2%

8. The instructor maintain an environment that is conducive to learning

- Strongly agree: 27%
- Agree: 67%
- Uncertain: 14%
- Disagree: 5%
- Strongly disagree: 2%

9. The instructor arrives on time

- Strongly agree: 25%
- Agree: 58%
- Uncertain: 9%
- Disagree: 3%
- Strongly disagree: 5%

10. The instructor leaves on time

- Strongly agree: 3%
- Agree: 70%
- Uncertain: 3%
- Disagree: 10%
- Strongly disagree: 1%

11. The instructor is fair in examination

- Strongly agree: 17%
- Agree: 64%
- Uncertain: 8%
- Disagree: 10%
- Strongly disagree: 1%

12. The instructor returns the grades scripts etc in a reasonable amount of time

- Strongly agree: 26%
- Agree: 69%
- Uncertain: 3%
- Disagree: 2%
- Strongly disagree: 0%
13. The instructor was available during the specified office hours and for after class consultations

14. The subject matter presented in the course has increased your knowledge of the subject

15. The syllabus clearly states course objectives requirements, procedures

16. The course integrates theoretical course concepts with real-world applications

17. The course material is modern and updated

18. The assignments and exams covered the materials presented in the course

19. The course material is modern and updated
Data were collected from 5 Ph.D. students. Comparative graph of course evaluation showed that the course taught by Prof. Dr. Muhammad Ashraf (AGR-710) gained a higher value of impact (4.5) that was followed by AGR-717 taught by Prof. Dr. F. H. Sahi with an impact value of 4.2. The individual parameter showed that 25% the students strongly agreed, 55% agreed, 14% uncertain, 3% disagreed and 3% strongly disagreed that the course objectives were clear. For the remaining parameters most of the students agreed that the course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical etc.). Similarly, they agreed that the learning and teaching methods encouraged participation, the overall environment in the class was conducive to learning, and classrooms were satisfactory, learning materials (Lesson Plans, Course Notes etc.) were relevant and useful, recommended reading books etc. were relevant and appropriate. They described that the provision of learning resources in the library was adequate and the course stimulated their interest and thought on the subject area. According to most of the students, the pace of the Course was appropriate, ideas and concepts were presented clearly, the method of assessment were reasonable, the material was well organized and presented, the instructor was responsive to student needs and problems, instructor was regular throughout the course and the material in the tutorials was useful.

**Comments / Suggestions**

1. More practicals must be arranged in labs.

2. Course should be up graded and updated.

3. Learning environment and resources were not satisfactory.

4. Usage of visuals, practical demonstrations and multimedia can make the course interesting and effective.

5. Course objectives must be clearly defined.
1. The course objectives were clear
- Strongly agree: 25%
- Agree: 55%
- Uncertain: 14%
- Disagree: 3%
- Strongly disagree: 3%

2. The course workload was manageable
- Strongly agree: 33%
- Agree: 45%
- Uncertain: 11%
- Disagree: 6%
- Strongly disagree: 4%

3. The course was well organized (e.g. timely access to material notification of changes, etc.)
- Strongly agree: 18%
- Agree: 69%
- Uncertain: 10%
- Disagree: 3%
- Strongly disagree: 0%

4. Approximate level of your own attendance during the whole course
- Strongly agree: 16%
- Agree: 72%
- Uncertain: 2%
- Disagree: 1%
- Strongly disagree: 2%

5. The instructor gives citations regarding current situations with reference to Pakistani context
- Strongly agree: 25%
- Agree: 69%
- Uncertain: 3%
- Disagree: 3%
- Strongly disagree: 6%

6. I think I have made progress in this course
- Strongly agree: 23%
- Agree: 72%
- Uncertain: 2%
- Disagree: 3%
- Strongly disagree: 16%
7. I think the course was well constructed to achieve the learning outcomes

- Strongly agree: 17%
- Agree: 58%
- Uncertain: 15%
- Disagree: 6%
- Strongly disagree: 4%

8. The learning and teaching method encouraged participation

- Strongly agree: 26%
- Agree: 49%
- Uncertain: 11%
- Disagree: 9%
- Strongly disagree: 5%

9. The overall environment in the class was conducive to learning

- Strongly agree: 13%
- Agree: 73%
- Uncertain: 9%
- Disagree: 4%
- Strongly disagree: 1%

10. Classrooms were satisfactory

- Strongly agree: 24%
- Agree: 53%
- Uncertain: 16%
- Disagree: 5%
- Strongly disagree: 2%

11. Learning materials were relevant and useful

- Strongly agree: 19%
- Agree: 53%
- Uncertain: 15%
- Disagree: 9%
- Strongly disagree: 4%

12. Recommended reading books etc. were relevant and appropriate

- Strongly agree: 19%
- Agree: 69%
- Uncertain: 6%
- Disagree: 5%
- Strongly disagree: 1%
13. The provision of learning resources in the library was adequate and appropriate

- Strongly agree: 21%
- Agree: 66%
- Uncertain: 7%
- Disagree: 3%
- Strongly disagree: 3%

14. The provision of learning resources on the web adequate and appropriate

- Strongly agree: 25%
- Agree: 60%
- Uncertain: 7%
- Disagree: 4%
- Strongly disagree: 4%

15. The course stimulated by interest and thought on the subject area

- Strongly agree: 36%
- Agree: 43%
- Uncertain: 11%
- Disagree: 6%
- Strongly disagree: 4%

16. The pace of the course was appropriate

- Strongly agree: 14%
- Agree: 48%
- Uncertain: 24%
- Disagree: 7%
- Strongly disagree: 7%

17. Ideas and concepts were presented clearly

- Strongly agree: 16%
- Agree: 75%
- Uncertain: 3%
- Disagree: 2%
- Strongly disagree: 4%

18. The methods of assessment were reasonable

- Strongly agree: 26%
- Agree: 49%
- Uncertain: 16%
- Disagree: 5%
- Strongly disagree: 4%
19. Feedback on assessment was timely

- Strongly agree: 23%
- Agree: 52%
- Uncertain: 15%
- Disagree: 6%
- Strongly disagree: 4%

20. Feedback on assessment was helpful

- Strongly agree: 20%
- Agree: 55%
- Uncertain: 15%
- Disagree: 6%
- Strongly disagree: 4%

21. I understood the lectures

- Strongly agree: 33%
- Agree: 51%
- Uncertain: 12%
- Disagree: 2%
- Strongly disagree: 2%

22. The material was well organized and presented

- Strongly agree: 15%
- Agree: 64%
- Uncertain: 11%
- Disagree: 6%
- Strongly disagree: 4%

23. The Instructor was responsive to student needs and problems

- Strongly agree: 15%
- Agree: 64%
- Uncertain: 12%
- Disagree: 6%
- Strongly disagree: 4%

24. Had the Instructor been regular throughout the course?

- Strongly agree: 23%
- Agree: 55%
- Uncertain: 12%
- Disagree: 6%
- Strongly disagree: 4%
25. The material in the tutorials was useful

- Strongly agree: 9%
- Agree: 79%
- Uncertain: 3%
- Disagree: 5%
- Strongly disagree: 4%

26. I was happy with the amount of work needed for tutorials

- Strongly agree: 16%
- Agree: 70%
- Uncertain: 7%
- Disagree: 3%
- Strongly disagree: 4%

27. The tutor dealt effectively with my problems

- Strongly agree: 23%
- Agree: 59%
- Uncertain: 12%
- Disagree: 6%
- Strongly disagree: 4%

28. The materials in practical was useful

- Strongly agree: 23%
- Agree: 55%
- Uncertain: 12%
- Disagree: 6%
- Strongly disagree: 4%

29. The demonstrators dealt effectively with my problems

- Strongly agree: 14%
- Agree: 65%
- Uncertain: 11%
- Disagree: 6%
- Strongly disagree: 4%
2. **Dr. Muhammad Ashraf**

   i. **Teacher Evaluation**

   Data were collected from 5 Ph.D. students. The individual parameters showed that the 14% of the students strongly agreed, 49% agreed, 21% uncertain, 9% disagreed, and 7% strongly disagreed that the teacher is fair in examination. Most of the students agreed that the instructor came with good preparation. Similarly, most of the students agreed that instructor demonstrates knowledge of the subject, instructor had completed the whole course, the Instructor provided additional material apart from the textbook, the instructor gave citations regarding current situations with reference to Pakistani context, the Instructor communicates the subject matter, the instructor shows respect towards students and encourages class participation effectively, the instructor maintained an environment that was conducive to learning, the instructor arrived on time, the instructor returned the graded scripts etc. in a reasonable amount of time, the instructor was available during the specified office hours after class for consultations, the Subject matter presented in the course has increased their knowledge of the subject, the syllabus clearly states course objectives requirements, procedures and grading criteria, the course integrates theoretical course concepts with real-world applications, and the assignments and exams covered the materials presented in the course, the course material is modern and updated.

   **Comments/Suggestions**

   1. Gentle person, nice teacher.
   2. Teacher provided practical experience related with field with special emphasis on agro-environmental conditions of Pakistan.
   3. The instructor was well organized and prepared.
   4. Presented the idea clearly.
   5. Disseminated knowledge effectively.
   6. Instructor is very punctual and diligent
1. The instructor is prepared for each class

- Strongly agree: 23%
- Agree: 45%
- Uncertain: 19%
- Disagree: 7%
- Strongly disagree: 6%

2. The instructor demonstrates knowledge of the subject

- Strongly agree: 78%
- Agree: 13%
- Uncertain: 5%
- Disagree: 3%
- Strongly disagree: 1%

3. The instructor has completed the whole course

- Strongly agree: 9%
- Agree: 75%
- Uncertain: 6%
- Disagree: 6%
- Strongly disagree: 0%

4. The instructor provides additional material apart from the textbook

- Strongly agree: 54%
- Agree: 19%
- Uncertain: 4%
- Disagree: 6%
- Strongly disagree: 2%

5. The instructor gives citations regarding current situations with reference to Pakistani context

- Strongly agree: 7%
- Agree: 78%
- Uncertain: 15%
- Disagree: 0%
- Strongly disagree: 2%

6. The instructor communicates the subject matter effectively

- Strongly agree: 16%
- Agree: 63%
- Uncertain: 19%
- Disagree: 4%
- Strongly disagree: 0%
7. The instructors shows respect towards students and encourages class participation

- Strongly agree: 14%
- Agree: 69%
- Uncertain: 11%
- Disagree: 3%
- Strongly disagree: 3%

Agree: 69%

8. The instructor maintain an environment that is conducive to learning

- Strongly agree: 24%
- Agree: 51%
- Uncertain: 15%
- Disagree: 6%
- Strongly disagree: 4%

Agree: 51%

9. The instructor arrives on time

- Strongly agree: 31%
- Agree: 60%
- Uncertain: 5%
- Disagree: 4%
- Strongly disagree: 0%

Agree: 60%

10. The instructor leaves on time

- Strongly agree: 14%
- Agree: 49%
- Uncertain: 21%
- Disagree: 9%
- Strongly disagree: 7%

Agree: 49%

11. The instructor is fair in examination

- Strongly agree: 15%
- Agree: 75%
- Uncertain: 7%
- Disagree: 2%
- Strongly disagree: 1%

Agree: 75%

12. The instructor returns the grades scripts etc in a reasonable amount of time

- Strongly agree: 15%
- Agree: 75%
- Uncertain: 7%

Agree: 75%
13. The instructor was available during the specified office hours and for after class consultations

15. The subject matter presented in the course has increased your knowledge of the subject

16. The syllabus clearly states course objectives, requirements, procedures

17. The course integrates theoretical course concepts with real-world applications

18. The assignments and exams covered the materials presented in the course

19. The course material is modern and updated
ii. Course Evaluation

| AGR-712 | Plant Water Relations | 3(2-2) | Dr. Muhammad Ashraf |

Data were collected from 5 Ph.D. students. The individual parameter showed that 17% the students strongly agreed, 55% agreed, 19 % uncertain, 5% disagreed and 4% strongly disagreed that the course objectives were clear. For the remaining parameters most of the students agreed that the course workload was manageable, well organized, the approximate level of student’s attendance during the whole course was higher; students participated actively in the course and have made progress in this course. Most of the students agreed that the course was well structured to achieve the learning outcomes, learning and teaching methods encouraged participation, environment in the class was conducive to learning, and classrooms were satisfactory, learning materials were relevant and useful and recommended reading books were pertinent and appropriate. They described that the provision of learning resources in the library was adequate and the course stimulated their interest and thought on the subject area. According to most of the students, the pace of the course was appropriate, ideas and concepts were presented clearly, the method of assessment were reasonable.

COMMENTS / SUGGESTIONS

1. Concepts were clear through proper learning method.

2. Course contents were not properly organized.

3. Learning environment was good.

4. Practicals and field visits can improve the course effectiveness.

5. Proper class room should be provided for conducive environment.
1. The course objectives were clear

- Strongly agree: 17%
- Agree: 55%
- Uncertain: 19%
- Disagree: 5%
- Strongly disagree: 4%

2. The course workload was manageable

- Strongly agree: 35%
- Agree: 40%
- Uncertain: 10%
- Disagree: 11%
- Strongly disagree: 4%

3. The course was well organized (e.g. timely access to material notification of changes, etc.)

- Strongly agree: 19%
- Agree: 64%
- Uncertain: 11%
- Disagree: 2%
- Strongly disagree: 4%

4. Approximate level of your own attendance during the whole course

- Strongly agree: 19%
- Agree: 56%
- Uncertain: 12%
- Disagree: 6%
- Strongly disagree: 4%

5. The instructor gives citations regarding current situations with reference to Pakistani context

- Strongly agree: 18%
- Agree: 74%
- Uncertain: 3%
- Disagree: 3%
- Strongly disagree: 2%

6. I think I have made progress in this course

- Strongly agree: 13%
- Agree: 75%
- Uncertain: 9%
- Disagree: 1%
- Strongly disagree: 2%
7. I think the course was well constructed to achieve the learning outcomes

- Strongly agree: 7%
- Agree: 65%
- Uncertain: 15%
- Disagree: 9%
- Strongly disagree: 4%

8. The learning and teaching method encouraged participation

- Strongly agree: 16%
- Agree: 57%
- Uncertain: 11%
- Disagree: 9%
- Strongly disagree: 7%

10. Classrooms were satisfactory

- Strongly agree: 20%
- Agree: 57%
- Uncertain: 16%
- Disagree: 5%
- Strongly disagree: 2%

11. Learning materials (lesson plans, course notes etc.) were relevant and useful

- Strongly agree: 21%
- Agree: 51%
- Uncertain: 9%
- Disagree: 5%
- Strongly disagree: 1%

12. Recommended reading books etc. were relevant and appropriate

- Strongly agree: 25%
- Agree: 55%
- Uncertain: 9%
- Disagree: 9%
- Strongly disagree: 2%

13. The provision of learning resources in the library was adequate and appropriate

- Strongly agree: 33%
- Agree: 54%
- Uncertain: 9%
- Disagree: 1%
- Strongly disagree: 3%
14. The provision of learning resources on the web adequate and appropriate. (if relevant)

- Strongly agree: 21%
- Agree: 59%
- Uncertain: 11%
- Disagree: 5%
- Strongly disagree: 4%

15. The course stimulated by interest and thought on the subject area

- Strongly agree: 33%
- Agree: 29%
- Uncertain: 21%
- Disagree: 8%
- Strongly disagree: 9%

16. The pace of the course was appropriate

- Strongly agree: 36%
- Agree: 35%
- Uncertain: 17%
- Disagree: 7%
- Strongly disagree: 5%

17. Ideas and concepts were presented clearly

- Strongly agree: 25%
- Agree: 59%
- Uncertain: 11%
- Disagree: 6%
- Strongly disagree: 3%

18. The methods of assessment were reasonable

- Strongly agree: 21%
- Agree: 57%
- Uncertain: 12%
- Disagree: 6%
- Strongly disagree: 4%

19. Feedback on assessment was timely

- Strongly agree: 14%
- Agree: 65%
- Uncertain: 4%
- Disagree: 6%
- Strongly disagree: 4%
20. Feedback on assessment was helpful

- Strongly agree: 23%
- Agree: 52%
- Uncertain: 15%
- Disagree: 6%
- Strongly disagree: 4%

21. I understood the lectures

- Strongly agree: 21%
- Agree: 57%
- Uncertain: 12%
- Disagree: 6%
- Strongly disagree: 4%

22. The material was well organized and presented

- Strongly agree: 21%
- Agree: 55%
- Uncertain: 12%
- Disagree: 8%
- Strongly disagree: 4%

23. The Instructor was responsive to student needs and problems

- Strongly agree: 10%
- Agree: 64%
- Uncertain: 14%
- Disagree: 6%
- Strongly disagree: 6%

24. Had the Instructor been regular throughout the course?

- Strongly agree: 21%
- Agree: 57%
- Uncertain: 12%
- Disagree: 6%
- Strongly disagree: 4%

25. The material in the tutorials was useful

- Strongly agree: 21%
- Agree: 57%
- Uncertain: 12%
26. I was happy with the amount of work needed for tutorials

- Strongly agree: 21%
- Agree: 57%
- Uncertain: 12%
- Disagree: 6%
- Strongly disagree: 4%

27. The tutor dealt effectively with my problems

- Strongly agree: 13%
- Agree: 68%
- Uncertain: 9%
- Disagree: 6%
- Strongly disagree: 4%

28. The materials in practical were useful

- Strongly agree: 22%
- Agree: 66%
- Uncertain: 2%
- Disagree: 6%
- Strongly disagree: 4%

29. The demonstrators dealt effectively with my problems

- Strongly agree: 29%
- Agree: 40%
- Uncertain: 19%
- Disagree: 6%
- Strongly disagree: 6%

9. The overall environment in the class was conducive to learning

- Strongly agree: 41%
- Agree: 42%
- Uncertain: 11%
- Disagree: 4%
- Strongly disagree: 2%
3. **Dr. Fayyaz ul Hassan**

i. **Teacher Evaluation**

Data were collected from 5 Ph.D. students. Among the teachers, Prof. Dr. F.H. Sahi Prof. achieved the very good impact value of 4.23. Whereas, Prof. Dr. Muhammad Ashraf had an impact value of 4.41. The individual parameters showed that the 33% of the students strongly agreed, 39% agreed, 15% uncertain, 9% disagreed, and 4% strongly disagreed that the teacher is fair in examination. Fifty four percent students agreed that the instructor came with good preparation in each class. Most of the students agreed that instructor demonstrates knowledge of the subject, instructor had completed the whole course, the Instructor provided additional material apart from the textbook, the instructor gave citations regarding current situations with reference to Pakistani context, the instructor communicates the subject matter, the instructor shows respect towards students and encourages class participation effectively, the instructor maintained an environment that was conducive to learning, the instructor arrived on time, the instructor returned the graded scripts etc. in a reasonable amount of time, the instructor was available during the specified office hours after class for consultations, the Subject matter presented in the course has increased their knowledge of the subject.

**Comments/Suggestions**

1. General information given by teacher based on his practical experience from the prevalent environment was indeed very effective.
2. Good behavior of the teacher and was available any time.
3. Course was completed in due time and was very interesting.
1. The instructor is prepared for each class

- Strongly agree: 19%
- Agree: 54%
- Uncertain: 19%
- Disagree: 4%
- Strongly disagree: 4%

2. The instructor demonstrate knowledge of the subject

- Strongly agree: 24%
- Agree: 56%
- Uncertain: 10%
- Disagree: 6%
- Strongly disagree: 4%

3. The instructor has completed the whole course

- Strongly agree: 25%
- Agree: 59%
- Uncertain: 11%
- Disagree: 1%
- Strongly disagree: 4%

4. The instructor provides additional material apart from the text book

- Strongly agree: 13%
- Agree: 79%
- Uncertain: 3%
- Disagree: 3%
- Strongly disagree: 2%

5. The instructor gives citations regarding current situations with reference to Pakistani context

- Strongly agree: 16%
- Agree: 72%
- Uncertain: 3%
- Disagree: 2%
- Strongly disagree: 2%

6. The instructor communicates the subject matter effectively

- Strongly agree: 16%
- Agree: 72%
- Uncertain: 9%
- Disagree: 1%
- Strongly disagree: 2%
7. The instructors shows respect towards students and encourages class participation

- Strongly agree: 17%
- Agree: 58%
- Uncertain: 15%
- Disagree: 6%
- Strongly disagree: 4%

8. The instructor maintain an environment that is conducive to learning

- Strongly agree: 26%
- Agree: 49%
- Uncertain: 11%
- Disagree: 9%
- Strongly disagree: 5%

9. The instructor arrives on time

- Strongly agree: 37%
- Agree: 51%
- Uncertain: 7%
- Disagree: 4%
- Strongly disagree: 1%

10. The instructor leaves on time

- Strongly agree: 20%
- Agree: 39%
- Uncertain: 15%
- Disagree: 9%
- Strongly disagree: 4%

11. The instructor is fair in examination

- Strongly agree: 10%
- Agree: 79%
- Uncertain: 5%
- Disagree: 5%
- Strongly disagree: 1%

12. The instructor returns the grades scripts etc in a reasonable amount of time

- Strongly agree: 33%
- Agree: 79%
- Uncertain: 5%
- Disagree: 5%
- Strongly disagree: 2%
13. The instructor was available during the specified office hours and for after class consultations

- Strongly agree: 23%
- Agree: 66%
- Uncertain: 7%
- Disagree: 1%
- Strongly disagree: 3%

15. The subject matter presented in the course has increased your knowledge of the subject

- Strongly agree: 29%
- Agree: 57%
- Uncertain: 7%
- Disagree: 3%
- Strongly disagree: 4%

16. The syllabus clearly states course objectives, requirements, procedures

- Strongly agree: 25%
- Agree: 54%
- Uncertain: 11%
- Disagree: 6%
- Strongly disagree: 4%

17. The course integrates theoretical course concepts with real-world applications

- Strongly agree: 36%
- Agree: 35%
- Uncertain: 17%
- Disagree: 7%
- Strongly disagree: 5%

18. The assignments and exams covered the materials presented in the course

- Strongly agree: 21%
- Agree: 54%
- Uncertain: 13%
- Disagree: 8%
- Strongly disagree: 4%

19. The course material is modern and updated

- Strongly agree: 21%
- Agree: 57%
- Uncertain: 12%
- Disagree: 6%
- Strongly disagree: 4%
ii. Course Evaluation

<table>
<thead>
<tr>
<th>AGR-717</th>
<th>Integrated Agriculture</th>
<th>3(3-0)</th>
<th>Prof. Dr. Fayyaz ul Hassan</th>
</tr>
</thead>
</table>

Data were collected from 5 Ph.D. students. Comparative graph of course evaluation showed that the course (AGR-717) taught by Prof. Dr. F. H. Sahi had an impact value of 4.2. The individual parameter showed that 46% the students strongly agreed, 53% agreed, 12% uncertain, 5% disagreed and 4% strongly disagreed that the course objectives were clear. Moreover, most of the students agreed that the course well organized, the course was well structured to achieve the learning outcomes, learning and teaching methods encouraged participation, the overall environment in the class was conducive to learning, and classrooms were satisfactory, learning materials were relevant and useful, recommended reading books etc. were relevant and appropriate. Also the provision of learning resources in the library was adequate and the course stimulated their interest and thought on the subject area, ideas and concepts were presented clearly, the material was well organized. The instructor was responsive to student needs and problems, regular throughout the course.

Comments/Suggestions:

1. More practicals will improve the course.

2. Lab equipments were not adequate.

3. Projector and multimedia should be used to deliver lectures.

4. Proper materials were not available for practical demonstrations.

5. Course was informative and interesting
1. The course objectives were clear

- Strongly agree: 46%
- Agree: 33%
- Uncertain: 12%
- Disagree: 6%
- Strongly disagree: 4%

2. The course workload was manageable

- Strongly agree: 7%
- Agree: 69%
- Uncertain: 14%
- Disagree: 3%
- Strongly disagree: 2%

3. The course was well organized (e.g. timely access to material, notification of changes, etc.)

- Strongly agree: 32%
- Agree: 49%
- Uncertain: 11%
- Disagree: 6%
- Strongly disagree: 3%

4. Approximate level of your own attendance during the whole course

- Strongly agree: 9%
- Agree: 72%
- Uncertain: 9%
- Disagree: 1%
- Strongly disagree: 2%

5. The instructor gives citations regarding current situations with reference to Pakistani context

- Strongly agree: 15%
- Agree: 79%
- Uncertain: 1%
- Disagree: 3%
- Strongly disagree: 1%

6. I think I have made progress in this course

- Strongly agree: 16%
- Agree: 72%
- Uncertain: 9%
- Disagree: 1%
- Strongly disagree: 2%
7. I think the course was well constructed to achieve the learning outcomes

Strongly agree: 18%
Agree: 55%
Uncertain: 17%
Disagree: 6%
Strongly disagree: 4%

8. The learning and teaching method encouraged participation

Strongly agree: 26%
Agree: 49%
Uncertain: 11%
Disagree: 9%
Strongly disagree: 5%

9. The overall environment in the class was conducive to learning

Strongly agree: 33%
Agree: 60%
Uncertain: 2%
Disagree: 4%
Strongly disagree: 1%

10. Classrooms were satisfactory

Strongly agree: 20%
Agree: 57%
Uncertain: 16%
Disagree: 5%
Strongly disagree: 2%

11. Learning materials (lesson plans, course notes etc.) were relevant and useful

Strongly agree: 21%
Agree: 55%
Uncertain: 17%
Disagree: 9%
Strongly disagree: 4%

12. Recommended reading books etc. were relevant and appropriate

Strongly agree: 35%
Agree: 55%
Uncertain: 4%
Disagree: 5%
Strongly disagree: 1%
13. The provision of learning resources in the library was adequate and appropriate

- Strongly agree: 23%
- Agree: 66%
- Uncertain: 7%
- Disagree: 6%
- Strongly disagree: 3%

14. The provision of learning resources on the web adequate and appropriate. (if relevant)

- Strongly agree: 29%
- Agree: 48%
- Uncertain: 13%
- Disagree: 6%
- Strongly disagree: 4%

15. The course stimulated by interest and thought on the subject area

- Strongly agree: 25%
- Agree: 54%
- Uncertain: 11%
- Disagree: 8%
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16. The pace of the course was appropriate

- Strongly agree: 20%
- Agree: 59%
- Uncertain: 8%
- Disagree: 5%
- Strongly disagree: 4%

17. Ideas and concepts were presented clearly

- Strongly agree: 28%
- Agree: 54%
- Uncertain: 13%
- Disagree: 9%
- Strongly disagree: 4%

18. The methods of assessment were reasonable

- Strongly agree: 28%
- Agree: 47%
- Uncertain: 12%
- Disagree: 9%
- Strongly disagree: 4%
19. Feedback on assessment was timely

- Strongly agree: 21%
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24. Had the Instructor been regular throughout the course?

- Strongly agree: 21%
- Agree: 57%
- Uncertain: 12%
- Disagree: 6%
- Strongly disagree: 4%
25. The material in the tutorials was useful

Strongly agree 24%
Agree 47%
Uncertain 19%
Disagree 6%
Strongly disagree 4%

26. I was happy with the amount of work needed for tutorials

Strongly agree 10%
Agree 69%
Uncertain 11%
Disagree 6%
Strongly disagree 4%

27. The tutor dealt effectively with my problems

Strongly agree 16%
Agree 59%
Uncertain 12%
Disagree 8%
Strongly disagree 5%

28. The materials in practical was useful

Strongly agree 21%
Agree 57%
Uncertain 12%
Disagree 6%
Strongly disagree 4%

29. The demonstrators dealt effectively with my problems

Strongly agree 28%
Agree 29%
Uncertain 33%
Disagree 6%
Strongly disagree 4%
Performa 2: Faculty Course Review Report

The evaluation revealed that the faculty is satisfied with curriculum. Questionnaire for the evaluation has been filled and analyzed. The internal evaluation was done through with mid and final term examinations for all courses offered by department. Some of the teachers suggested division of certain courses as they were lengthy.

Table 3: Faculty Course Review Report

<table>
<thead>
<tr>
<th>Course code</th>
<th>Title</th>
<th>Credit Value</th>
<th>Assessment Methods/ Exams</th>
<th>No. of Students</th>
<th>comments on curriculum</th>
<th>Any changes for future in course</th>
<th>Semester</th>
<th>% Grade</th>
<th>Course Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGR-710</td>
<td>Crop Nutrition</td>
<td>3(2-2)</td>
<td>Midterm And Final</td>
<td>10</td>
<td>Good but lengthy</td>
<td>Should be divided</td>
<td>Fall</td>
<td>A 55 B 26 C 19 D E F -</td>
<td>Dr. Muhammad Ashraf</td>
</tr>
<tr>
<td>AGR-712</td>
<td>Plant Water Relations</td>
<td>3(2-2)</td>
<td>Midterm And Final</td>
<td>10</td>
<td>Good but lengthy</td>
<td>Should be divided</td>
<td>Spring</td>
<td>A 61 B 24 C 15 D E F -</td>
<td>Dr. Muhammad Ashraf</td>
</tr>
<tr>
<td>AGR-717</td>
<td>Integrated Agriculture</td>
<td>3(2-2)</td>
<td>Midterm And Final</td>
<td>24</td>
<td>Good but lengthy</td>
<td>Should be divided</td>
<td>Fall</td>
<td>A 59 B 31 C 10 D E F -</td>
<td>Dr. Fayyaz-ul-Hassan Sahi</td>
</tr>
</tbody>
</table>
Performa 3: Survey of Graduating Students

A total of 10 students were included in the survey. The data showed that 60% of the students were very satisfied (VS), 20% satisfied, 20% uncertain, 0% dissatisfied and 0% very dissatisfied for the work in the program is too heavy. For the other parameters, 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.
3. The program administration is effective in supporting learning.

4. The program is effective in developing analytical and problem solving skills.

5. The program is effective in developing independent thinking.

6. The program is effective in developing written communication skills.

7. The program is effective in developing planning abilities.

8. The objectives 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 was conducive for learning

12. Whether the Infrastructure of the department was good.

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

14. Whether scholarships/grants were available to students in case of hardship
Performa 4: Research Student Progress Review Form

A total of 10 students of Ph.D. were surveyed. Most of the students are interested in laboratory work and eager to operate modern equipments. They pointed out the problems regarding the availability of space, computers and internet. In fact these facilities are very poor. Skills and capabilities reflected in performance as agronomist

- Students will be able to work in the field of Agronomy with confidence.
- To develop abilities of effective writing, oral presentations and demonstration.
- To use modern techniques/ tools in research studies.

Performa 5: Results of Faculty Survey

The data generated as a result of faculty survey, showed that 31% of faculty members were very satisfied, 23% satisfied, 23 uncertain, 15% dissatisfied and 8% very dissatisfied are satisfied with their job clarity about promotion process. However, most of the faculty themselves reported as very satisfied mentoring and administrative support, job security, support from the department, their progress through ranks. The least time availability to faculty to interact with their family is due to extra load on present teachers as some times of the faculty members proceed on training, workshops etc so the poor strength of remaining faculty in the campus has to bear out the load of course work and other assignments.

![Pie chart showing: 1. Your mix of research, teaching and community service. V.D.S. 8% D.S. 8% U.C. 15% S 15% V.S. 54% 2. The intellectual stimulation of your work. V.D.S. 0% D.S. 23% U.C. 8% S 15% V.S. 54%]
3. Type of teaching / research you currently do.

4. Your interaction with students

5. Cooperation you receive from colleagues

6. The mentoring available to you

7. Administrative support from the department

8. Providing clarity about the faculty promotion process
9. Your prospects for advancement and progress through ranks.

10. Salary and compensation package.

11. Job security and stability at the department.

12. Amount of time you have for yourself and family.

13. The overall climate at the department.

14. The department is utilizing your experience and knowledge?
Proforma 6: Survey of department offering Ph.D. programs

Department of Agronomy started its Ph.D. program during 1998 and 4 students have completed Ph.D. from the department while 18 students are currently enrolled in department. Admission in Ph.D. requires M.Sc. (Hons.) Agronomy with a minimum CGPA of 3.0 along with thesis. Ph.D. scholar has to complete minimum 18 credit hours in addition to research thesis with minimum time duration of 3 years. Comprehensive examination is pre-requisite to qualify as candidate for Ph.D. degree and is taken at the end of course work. A research paper is must to publish from Ph.D. thesis in HEC recognize journal. Thesis is sent to two internationally good reputed scientists from academically advanced countries for evaluation. There are 09 permanent faculty members holding Ph.D. degree in the department out of them 06 are HEC approved supervisors. Faculty members are running 4 research projects in the department funded by different organizations. There are 4 Ph.D. scholars in the department holding HEC indigenous scholarships. Total research fund available to the department is 202,000 (for the reported two years) from all the resources.

Table 4: Survey of department offering Ph.D. programs

<table>
<thead>
<tr>
<th>1. General Information:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Name of Department</td>
<td>Agronomy</td>
</tr>
<tr>
<td>1.2 Name of Faculty</td>
<td>FC&amp;FS</td>
</tr>
<tr>
<td>1.3 Date of initiation of Ph.D. program</td>
<td>00-00-1998</td>
</tr>
<tr>
<td>1.4 Total number of academic journals</td>
<td>Nil</td>
</tr>
<tr>
<td>1.4 relevant to Ph.D. program.</td>
<td></td>
</tr>
<tr>
<td>1.5 Number of Computers available per Ph.D.</td>
<td>Nil</td>
</tr>
<tr>
<td>1.6 student</td>
<td></td>
</tr>
<tr>
<td>1.6 Total Internet Bandwidth available to</td>
<td>Nil</td>
</tr>
<tr>
<td>all the students in the Department.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Faculty Resources</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Number of faculty members holding Ph.D.</td>
<td>09</td>
</tr>
<tr>
<td>degree in the department.</td>
<td></td>
</tr>
<tr>
<td>2.2 Number of HEC approved Ph.D. Advisors</td>
<td>06</td>
</tr>
<tr>
<td>in the department.</td>
<td></td>
</tr>
</tbody>
</table>
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. | 05 |
| 3.2 | Total number of articles published last year in Asian Academic Journals that are authored by faculty members and students in the department. | 08 |
| 3.3 | Total number of ongoing research projects in the department funded by different organizations | 04 |
| 3.4 | Number of post-graduate students in the department holding scholarships/fellowships. | 04 |
| 3.5 | Total Research Funds available to the Department | 202,000 (2 years) |
| 3.6 | Number of active international linkages involving exchange of researchers/students/faculty etc. | Nil |

4. Student Information:

| 4.1 | Number of Ph.D. degrees conferred to date to students from the Department during the past three academic years. | 04 |
| 4.2 | Number of Ph.D. students currently enrolled in the department | 18 |
| 4.3 | Ratio of number of students accepted to total number of applicants for Ph.D. Program. | 3:5 |

5. Program Information

<p>| 5.1 | Entrance requirements into Ph.D. Program | M. Sc. (Hons) Agronomy with a minimum CGPA of 3.0 |
| 5.2 | Is your Ph.D. program based on research only? (Y/N) | Mini Credit Hours 18 + Thesis research |
| 5.3 | Maximum number of years in which a Ph.D. degree has to be completed after initial date of enrollment in Ph.D. | 3 years |</p>
<table>
<thead>
<tr>
<th></th>
<th>program</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.4</td>
<td>Total number of post M.Sc. (16 year equivalent) courses required for Ph.D.</td>
</tr>
<tr>
<td>5.5</td>
<td>Total number of M.Phil. level courses taught on average in a Term / Semester.</td>
</tr>
<tr>
<td>5.6</td>
<td>Total number of Ph.D. level courses taught on average in a Term / Semester.</td>
</tr>
<tr>
<td>5.7</td>
<td>Do your students have to take/write:</td>
</tr>
<tr>
<td></td>
<td>Ph.D. Qualifying examination</td>
</tr>
<tr>
<td></td>
<td>Comprehensive examination</td>
</tr>
<tr>
<td></td>
<td>Research paper in HEC approved Journal</td>
</tr>
<tr>
<td></td>
<td>Any other examination</td>
</tr>
<tr>
<td>5.8</td>
<td>Total number of International examiners to which the Ph.D. Dissertation is sent.</td>
</tr>
<tr>
<td>5.9</td>
<td>How is the selection of an examiner from technologically advanced countries carried out?</td>
</tr>
<tr>
<td>5.10</td>
<td>Is there a minimum residency requirement (on campus) for award of Ph.D. degree?</td>
</tr>
</tbody>
</table>

### 6. Additional Information

|   | Any other information that you would like to provide. | No |
Proforma 7: Alumni Survey

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 09 alumni were surveyed. The data showed that the alumni reported 43% excellent, 18% very good, 21% good, 11% fair and 7% poor knowledge of Math, Science, Humanities and professional discipline. For other parameters, most of the Alumni reported excellent regarding department trained them excellently to formulate and solve problems and collect and analyze data, IT knowledge, training of oral communication, report writing and presentation skills, excellent interpersonal skills such as team work, working in challenging conditions and independent thinking, learnt excellent management of resource and time, learnt excellent power of judgment, department has excellent infrastructure and repute.

1. Math, Science, Humanities and professional discipline?

- Excellent: 43%
- Very Good: 18%
- Good: 21%
- Fair: 11%
- Poor: 7%

2. Problem formulation and solving skills

- Excellent: 50%
- Very Good: 25%
- Good: 14%
- Fair: 7%
- Poor: 0%

3. Collecting and analyzing appropriate data

- Excellent: 61%
- Very Good: 39%
- Good: 7%
- Fair: 7%
- Poor: 4%

4. Ability to link theory to practice.

- Excellent: 61%
- Very Good: 7%
- Good: 18%
- Fair: 11%
- Poor: 3%
5. Ability to design a system component or process

- E: 36%
- V.G.: 39%
- G: 14%
- F: 4%
- P: 7%

6. IT knowledge

- E: 39%
- F: 18%
- G: 18%
- V.G.: 18%

7. Oral communication

- E: 43%
- F: 7%
- G: 0%
- V.G.: 50%

8. Report writing

- E: 18%
- F: 18%
- G: 18%
- V.G.: 39%

9. Presentation skills

- E: 57%
- F: 7%
- G: 7%
- V.G.: 25%

10. Ability to work in teams.

- E: 39%
- F: 14%
- G: 18%
- V.G.: 18%
11. Ability to work in arduous /Challenging situation

- Excellent: 75%
- Very Good: 14%
- Good: 3%
- Fair: 4%
- Poor: 1%

12. Independent thinking

- Excellent: 21%
- Very Good: 46%
- Good: 18%
- Fair: 4%
- Poor: 1%

13. Appreciation of ethical Values

- Excellent: 50%
- Very Good: 18%
- Good: 14%
- Fair: 14%
- Poor: 4%

14. Resource and Time management skills

- Excellent: 46%
- Very Good: 18%
- Good: 18%
- Fair: 14%
- Poor: 7%

15. Judgment

- Excellent: 68%
- Very Good: 11%
- Good: 7%
- Fair: 14%
- Poor: 7%

16. Discipline

- Excellent: 43%
- Very Good: 14%
- Good: 18%
- Fair: 14%
- Poor: 11%
Proforma 8: Employer Survey

The purpose of this survey is to obtain employers input on the quality of education, the department is providing and to assess the quality of the academic program. The survey included University graduates employed in different organizations. A total of 6 employers provided the data. The generated data showed the report of the employers about the Math, Science, Humanities and professional discipline was as 50% excellent, 33% very good, 17% good, 0% fair and 0% poor. Most of the employers reported excellent performance of the candidates regarding different aspects of the professionalities like power of problem formulation and
solving skills, and have great ability of oral communication and are reliable and ethically sound.

Employers showed a little concern about computer skills of the candidate.
1. Oral communication

2. Report writing

3. Presentation skills

1. Ability to work in teams.

2. Leadership

3. Independent thinking
4. Motivation

5. Reliability

6. Appreciation of ethical values

1. Time management skills

2. Judgment

3. Discipline
Standard 1.3: Program’s assessment results & documentation

The results of Program’s assessment and the extent to which they are used to improve the program are documented.

Strength of the Department:

All the process of updation and improvement of department and program and corrective measures where needed takes place through proper channel from the Chairmen department to Dean Faculty and further to the competent Authority and vice versa. The main strength of the department is the availability of highly qualified teachers and their full acquaintance with respective subjects. Majority of the faculty members are foreign qualified and are well versed in their area of interest.

Weaknesses identified in the program

Lack of infrastructure to transfer the recommended practices and technology to farmers. There is no arrangement for training the faculty for enhancing their professional competency so there is a need for short foreign trainings of young faculty members. The improvement feature for quality education in Agronomy department through There is lack of availability of the facility of audio visual aids and the latest equipements in the labs and abroad training of the faculty. Therefore, there is dire need for the overall enhancement of knowledge and skills of faculty members in relation to the latest global advancements in the discipline through exchange programs, short training and collaborative research project within and outside Pakistan.

Standard 1.4: Overall performance measures of the department

The department must assess its overall performance periodically using quantifiable measures. Performance of the faculty members pertaining to research activities indicates that there are 45 research papers and 6 projects in the credit of faculty members of the Agronomy department in the reporting period of this report. (Table 5).
Table 5: Present performance measures for research activities

<table>
<thead>
<tr>
<th>Sr. Nos.</th>
<th>Name of faculty member</th>
<th>Research Papers</th>
<th>Projects Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Dr. Muhammad Azim Malik</td>
<td>4</td>
<td>1(ALP)</td>
</tr>
<tr>
<td>2.</td>
<td>Dr. Muhammad Ashraf</td>
<td>5</td>
<td>-------</td>
</tr>
<tr>
<td>3.</td>
<td>Dr. Fayyaz-ul-Hassan</td>
<td>7</td>
<td>1 (PSF)</td>
</tr>
<tr>
<td>4.</td>
<td>Dr. Zammurad Iqbal Ahmad</td>
<td>4</td>
<td>------</td>
</tr>
<tr>
<td>5.</td>
<td>Dr. Abdul Razzaq</td>
<td>4</td>
<td>1(HEC)</td>
</tr>
<tr>
<td>6.</td>
<td>Mr. Irfan Aziz</td>
<td>2</td>
<td>-------</td>
</tr>
<tr>
<td>7.</td>
<td>Dr. Muhammad Ansar</td>
<td>5</td>
<td>1(PMAS-AAUR)</td>
</tr>
<tr>
<td>8.</td>
<td>Dr. Muhammad Rasheed</td>
<td>6</td>
<td>2(PMAS-AAUR)</td>
</tr>
<tr>
<td>9.</td>
<td>Mr. Ghulam Qadir</td>
<td>3</td>
<td>--------------</td>
</tr>
<tr>
<td>11.</td>
<td>Mr. Mukhtar Ahmad</td>
<td>2</td>
<td>1 (PMAS-AAUR)</td>
</tr>
<tr>
<td>12.</td>
<td>Dr. Abdul Manuaf</td>
<td>2</td>
<td>--------------</td>
</tr>
<tr>
<td>13.</td>
<td>Mr. Safdar Ali</td>
<td>1</td>
<td>--------------</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>45 international as well as national</td>
<td>6</td>
</tr>
</tbody>
</table>
Program out comes:

Table 6: Quantitative assessment of the department

<table>
<thead>
<tr>
<th>Sr. #</th>
<th>Particular</th>
<th>Passed out</th>
<th>Currently Registered</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ph. D. Degrees awarded</td>
<td>11 (2 indigenous)</td>
<td>16 (4 indigenous)</td>
<td>Almost of the students joined /got jobs in public and private sector organizations.</td>
</tr>
</tbody>
</table>

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

Skills and capabilities reflected in performance as Agronomy:

Students develop ability to apply knowledge of Agronomy and to work as professionals to build confidence and communicate effectively in writing and oral skills. Students are able to demonstrate use modern research tools, techniques and skills for building their professional career. To make them understand how to formulate and design the experiments and to work effectively in a research group.

Faculty satisfaction regarding the administrative services:

- The department upholds a percentage 4:1 for the academic (technical) and administrative non-technical staff which fulfils the standard set by HEC.
- Administrative meeting (departmental, university, academic council and syndicates) are attended as and when required.
- Quick office disposal are never delayed, so for no complaint in this regard, received from authorities

Proper records of the following are maintained:

- Research Reports
- Entry test
- Assignments
• Attendance report
• Evaluation report
• Enrolment

Major future improvement plans
• Establishment of Crop Seed Production, Research and Training Centre
• Execution of research projects funded by different donor agencies.
• Further Strengthening of Linkages with National/International organizations. Farmers field days, Participatory research activities. Establishment of demonstration plots on farmers’ fields.
• Arranging faculty trainings in advanced countries to equip them with latest developments and research skills.

CRITERION 2:
CURRICULUM DESIGN AND ORGANIZATION

Curriculum design and update is initiated by the faculty members of the Department after the approval of Board of Studies which comprises of senior faculty members and subject specialist who is taken from other faculties or from other Universities or research Institutions. It is headed by the Chairman of the Department. The approved curriculum is then sent to Board of Faculty, headed by the Dean Faculty of Crop and Food Sciences. This Board consists of senior faculty members from all the Departments of the faculty and subject specialists. Finally the curriculum is presented before the Academic Council which is comprised of the Professors, Associate Professors, Faculty Representatives and nominated experts.
Definition of Credit Hour:

A student must complete a definite number of credit hours. One credit hour is one theory lecture or two hours practical work per week. One credit hour carries 20 marks. The semester is of 18 weeks.

Pre-Requisites

Admission Requirements:

Degree | Pre-requisites
---|---
Ph.D. | M.Sc. (Hons.) with minimum CGPA 3.0/Ist division + interview and entry test

Degree Plan
Ph.D. in Agronomy

The PhD degree program was first time introduced in the PMAS-Arid Agriculture University Rawalpindi, department of Agronomy in 1998. The program designed for quality research is completely coherent with HEC standards. The Ph.D. study Program consists of 3 academic years / 6 semesters. As per HEC rule, a student has to complete 18 credit hours for course work. Degrees are awarded after completion of 18 credit hours course work, two year research work and thesis writing are mandatory for the Ph.D. degree. Thesis is sent to technologically developed countries for recommendation from the foreign examiners for final approval of thesis.

Degree Requirements:

The program contents meet the program objectives as highlighted and provided by the Pakistan Higher Education Commission. Minimum 18 credits of course work is compulsory; out of which 9 credits are of core/compulsory courses. Course work following a synopsis defense, seminar, comprehensive exam and submission of thesis to be approved by the University and
examined by two foreign internationally recognized scientists from the University of technologically advanced countries.

**Degree Requirements (Minimum)**

Ph.D.  
Academic minimum attain of 3.0 CGPA, 18 credit hours compulsory, Comprehensive examination (Written and Oral) and thesis examination.

**Examination Weightage:**

In course work, student's evaluation is done by mid-term examination, assignments/presentations/quizzes and final examination. A student, who misses the mid-term examination, is not allowed to sit in the final examination and is awarded zero marks in that examination. In case a student does not appear in the final examination of a course, he shall be deemed to have failed in that course. In theory, weightage to each component of examination is as ascribed her under:

- **Mid Examination**: 30%
- **Assignments**: 10%
- **Final Examination**: 60%

For practical examination 100% weightage is given to practical as scored in the final examination. A student is eligible to sit for the examination provided that he/she has attended not less than 75% of the classes in theory and practical, separately.

**Eligibility for examination:**

A student is eligible to sit for the examination provided that he/she has attended not less than 75% of the classes in theory and practical, separately. The minimum pass marks for each course are 65%.
Scheme of studies and course contents of Ph.D. Agronomy:

Scheme of studies for Ph.D. Agronomy is given below. List of Courses offered by the Department is given in Annexure-I

Summary of Curricula courses requirements for Ph. D. Agronomy degree.

Table 7: List of courses

<table>
<thead>
<tr>
<th>S. No</th>
<th>Course No.</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td>AGRO-710</td>
<td>Crop Nutrition</td>
<td>3(3-0)</td>
</tr>
<tr>
<td>12.</td>
<td>AGRO-712</td>
<td>Plant water relations</td>
<td>3(2-2)</td>
</tr>
<tr>
<td>17.</td>
<td>AGRO-717</td>
<td>Integrated agriculture</td>
<td>3(3-0)</td>
</tr>
<tr>
<td>19.</td>
<td>AGRO-720-I</td>
<td>Seminar</td>
<td>1(1-0)</td>
</tr>
<tr>
<td>20.</td>
<td>AGRO-720-II</td>
<td>Seminar</td>
<td>1(1-0)</td>
</tr>
</tbody>
</table>

Compulsory courses for Ph.D. are

- Statistics
- Bio-chemistry
- Integrated Agriculture

Table 8: Program’s Courses VS outcomes

<table>
<thead>
<tr>
<th>Courses</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>AGR-710,AGR-712,AGR-717</td>
<td>++</td>
</tr>
</tbody>
</table>

+ = moderately satisfactory
;++ = Satisfactory
;+++ = Highly satisfactory
Standard 2.1: Assessment of the Curriculum of Agronomy Department

Table 9: Assessment of curriculum

<table>
<thead>
<tr>
<th>Courses</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HRD</td>
</tr>
<tr>
<td>Ph. D. Agronomy</td>
<td>Highly satisfactory</td>
</tr>
</tbody>
</table>

The Curriculum fits very well and satisfies the core requirements for the program, as specified by 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 (HEC).

A student is eligible to sit for the examination provided that he/she has attended not less than 75% of the classes in theory and practical, separately. The minimum pass marks for each course are 65% for Ph.D.

Standard 2.2:

Theoretical backgrounds, problem analysis and solution design must be stressed within the program’s core material.

Table 10: Elements vs. courses:

<table>
<thead>
<tr>
<th>Elements</th>
<th>Agronomy Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical background</td>
<td>AGR-710, AGR-712, AGR-717</td>
</tr>
<tr>
<td>Problem analysis/ Solution Design</td>
<td>There are courses like Stat-711 (Advanced exptal. design with data processing)</td>
</tr>
</tbody>
</table>
Standard 2.3: Credit hours distribution

Table 11: Credit hours distribution

<table>
<thead>
<tr>
<th>Degrees</th>
<th>Minimum Course hours</th>
<th>Thesis</th>
<th>Duration in semesters</th>
<th>Passing CGPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph.D.</td>
<td>18</td>
<td>-</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

Standard 2.4: Credit hours and HEC requirement

The courses offered by the department meet the minimum criteria as laid down by Higher Education Commission.

Standard 2.5: Attendance requirement

Attendance required in each course is 75%, below which the student is not allowed to sit in the examination.

Standard 2.6: Information technology component of the curriculum

Information technology component of the curriculum must be integrated throughout the program. There is deficiency of information technology related courses but some activities and courses in program are useful to give basic training of computer use. Department also lacks IT facilities like computers etc.

Standard 2.7: Enhancing oral and written communication skills of the students

There are two courses of seminars (one credit hour each) compulsory for each Ph.D. student which he has to present in the seminar room thus enhancing his communication skills. Moreover, the students also present their Doctorate research plan before the audience.
Assignments are given to students on specific titles (part of the course) which are presented by them orally and submitted as written report, which not only increase capacity but oral and written communication skills of the students.

**CRITERION 3**

**LABORATORIES AND COMPUTER FACILITIES**

**Laboratory title:** There are 4 labs in the department designated for specific purposes
- Allelopathy Research lab
- General research lab
- Stress physiology lab
- Nutrient efficacy lab

**Location and Area:**
Faculty of crop and food sciences, ground floor, Agronomy department

**Objectives**
Laboratories are used for:
- Practical exercise and demonstrations to students in their introductory and major courses
- Research work for the Post-graduate students
- Used for implementing the funded projects by the University, HEC, PSF, PARC and other agencies.
- Laboratories are well spacious and adequate. In view of the equipment available research work being done and future expansion programs, laboratories do not meet our requirements.
- Major apparatus viz equipments: following major equipments are available but some are out dated and out of order.

**List of equipments and instruments in department:**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Equipment</th>
<th>Quantity/No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Heating Drying Cabinet</td>
<td>03</td>
</tr>
<tr>
<td>2.</td>
<td>Water Distillery apparatus</td>
<td>01</td>
</tr>
<tr>
<td>3.</td>
<td>Over Head Projector</td>
<td>02</td>
</tr>
<tr>
<td></td>
<td>Equipment</td>
<td>Quantity</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>4.</td>
<td>Computer with Laser Printer</td>
<td>02</td>
</tr>
<tr>
<td>5.</td>
<td>Freezer</td>
<td>01</td>
</tr>
<tr>
<td>6.</td>
<td>pH Meter</td>
<td>01</td>
</tr>
<tr>
<td>7.</td>
<td>EC Meter</td>
<td>01</td>
</tr>
<tr>
<td>8.</td>
<td>Centrifuge 14000 Rpm</td>
<td>01</td>
</tr>
<tr>
<td>9.</td>
<td>Top Loading Balance</td>
<td>02</td>
</tr>
<tr>
<td>10.</td>
<td>Vacuum Pump</td>
<td>01</td>
</tr>
<tr>
<td>11.</td>
<td>Water Potential Apparatus</td>
<td>01</td>
</tr>
<tr>
<td>12.</td>
<td>Water Bath</td>
<td>01</td>
</tr>
<tr>
<td>13.</td>
<td>Spectrophotometer</td>
<td>01</td>
</tr>
<tr>
<td>14.</td>
<td>Leaf Area Meter</td>
<td>02</td>
</tr>
<tr>
<td>15.</td>
<td>Growth Chamber</td>
<td>02</td>
</tr>
<tr>
<td>16.</td>
<td>Flame Photometer</td>
<td>01</td>
</tr>
<tr>
<td>17.</td>
<td>Analytical Balance</td>
<td>02</td>
</tr>
<tr>
<td>18.</td>
<td>Osmometer</td>
<td>01</td>
</tr>
<tr>
<td>19.</td>
<td>Chiller</td>
<td>01</td>
</tr>
<tr>
<td>20.</td>
<td>Digestion Block</td>
<td>01</td>
</tr>
<tr>
<td>21.</td>
<td>Mechanical shaker</td>
<td>01</td>
</tr>
</tbody>
</table>

**Shortcoming in Laboratory facilities for faculty member and Ph.D. students.**

- Equipments regards growth analysis/physiological parameters are lacking e.g. IRGA, chlorophyll meter etc, moisture monitoring, Neutron probe, tensiometers, etc water potential measurement devices.
- The department lacks lecture rooms. Currently research laboratories are being used for classes.
- A green/glass house is direly needed for controlled experiments.
- There is no proper safety arrangement and no security plans are in the case of emergency. There is no emergency exit for the lab and classroom.
- No fire extinguishers have been installed in any laboratory.
- No first aid kits/ facilities provided in the laboratory/department.
**Standard 3.1: Laboratory manuals/documentation/instructions for experiments**

- Laboratory manuals/documentation/instructions for experiments must be available and readily accessible to faculty and students.
- Laboratory manuals of each subject are not available.
- The department has no library at all.
- However, individual teachers have their books.

**Standard 3.2: Support/Laboratory Personal for Maintenance of Laboratory**

Laboratories are maintained by Lab Assistant (01), and Laboratory Attendants (02).

**Standard 3.3: Computer and infrastructure facilities**

Computer facilities are not available to all faculty members and the Ph.D. students whereas infrastructure for the academic purpose does not support the conduciveness of the teaching environment.

**CRITERION 4: STUDENT SUPPORT AND ADVISING**

Our university organizes support programs and provides information regarding admission, scholarship schemes, etc. Department in its own capacity arranges orientation and guides various cultural activities and solve the student’s problems, however currently there is no parent teacher association.

**Standard 4.1: Frequency of courses**

- Courses are taught as per policy of HEC.
- At undergraduate and postgraduate level course subjects are offered as per scheme of study provided by HEC and approved.
- Courses are offered according to scheme of study.
- Elective courses are offered as per strategy of HEC and the university.
For postgraduate Programs, a variety of courses are offered according to demand of the profession.

**Standard 4.2: Structure of the courses**

- To ensure effective interaction between students, faculty and teaching assistants at the time of course formulation both theoretical and practical aspects are focused.
- Theoretical problems are explained and assignment is also given to the students whereas practical are carried out both in the laboratory and in the field.
- Courses are structured and decided in the board of study meetings.
- Emphasis is always given for an effective interaction between each section.

**Standard 4.3: Guidance to the Students**

Several steps have been taken to provide guidance to the students such as:
- Students are informed about the program requirement through the office of the head of the department.
- Through the personal communication of the teachers with the students.
- Students can also consult their relevant teachers whenever they face any professional problems.
- In case of some problems, Director, Student Affairs is available who is ready to help the students. Senior tutor has been entrusted with tutorial, counseling and for extracurricular activities.
- Student can interact with the teachers in university, whenever they need.
- Realizing the need for exploring job opportunities for the university graduates, Directorate of placement bureau has been established at PMAS-AAUR.

**CRITERION 5: PROCESS CONTROL**

It includes student admission, registration, faculty recruitment activities which are dealt by various statutory bodies and the university administration.
Standard 5.1: Program admission criteria

The process of admission well established and followed as per rules and criteria set by HEC. For this purpose an advertisement is given in the National Newspapers by the Registrar office.

Table 12: Admission requirements

<table>
<thead>
<tr>
<th>Degree</th>
<th>Pre-requisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph.D.</td>
<td>M.Sc. (Hons.) with minimum CGPA 3.0/Ist division + interview and entry test</td>
</tr>
</tbody>
</table>

Standard 5.2: Process of registration

- The student name, after completion of the admission process, are forwarded to the registrar office for proper registration in the specific program and registration numbers are issued to the students
- Students are evaluated through Mid, Final and Practical exams and through assignments.
- Registration is done for one time for each degree but evaluation is done through the result of each semester, if the students fulfill criteria of the university, they are promoted to the next semester.
- In general, the students are registered on merit basis keeping in view the academic and research standards.

Standards 5.3: Recruiting process for faculty

- Recruitment policy followed the university is recommended by HEC for induction of new faculty is done as per rules:
- Vacant and newly created positions are advertised in the National Newspapers, applications are received by the registrar office and call letters are issued to the short listed candidates on the basis of their experiences, qualifications, publications and other qualities / activities as fixed by the university.
• The candidates are interviewed by the university selection Board. Principal and alternate candidate are selected.

• Selection of candidates is approved by the syndicate for issuing orders to join within a specified period.

• Induction of new candidates depends upon the number of sanction posts.

• Standard set by HEC are followed.

• At present, no procedure exists for retaining highly qualified faculty members, however, the revised pay scales of structures is quite attractive.

• HEC also supports appointment of highly qualified members as foreign faculty professors, National Professors and place them in various departments of the university.

**Standard 5.4: Teaching and delivery of course material**

• To help providing high quality teaching, Department periodically revises the curriculum depending upon requirements, innovations and new technology

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

• Lecture notes are also prepared by the teachers and given the students.

• Most of the lectures are also supplemented by overheads, slides, pictures.

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

**Standard 5.5: Completion of Program Requirements**

The controller of examinations announces the date of commencement of examination. After ~20-30 days of the examinations, the controller office notifies the results of the students. The evaluation procedure consists of mid and final examinations, practical formulas, assignments and reports, oral and technical presentations. Candidates who secure 80% or more marks are awarded grade A. Gold medals are awarded to the students who secure highest marks. Degrees are awarded to the students on the annual convocation that is held every year.

**Examination Weightage:**

**Grading Policy**

A grade = 80 % and above
B grade = 65-79 %

C grade = 50-64 %

D grade = 40-49 %

F grade = below 40 %

**CRITERION 6: FACULTY**

**Standard 6.1: Full Time Faculty**

There must be enough full time faculty who are committed to the program to provide adequate coverage of the program areas/courses with continuity and stability. The interests and qualifications of all faculty members must be sufficient to teach all courses, plan, modify and update courses and curricula. All faculty members must have a level of competence that would normally be obtained through gradual work in the discipline. The majority of the faculty must hold a Ph.D. in the discipline

**Table 13: Full Time Faculty**

<table>
<thead>
<tr>
<th>Program area of specialization</th>
<th>Number of faculty members in each area</th>
<th>Number of faculty with Ph.D. degree</th>
<th>Names of the Faculty Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated Weed Management, Zero-Tillage, Allelopathy</td>
<td>02</td>
<td>02</td>
<td>Dr. Muhammad Azim Malik, Dr. Muhammad Ashraf</td>
</tr>
<tr>
<td>Oilseed Crops, Crop Water</td>
<td>03</td>
<td>03</td>
<td>Dr. Fayyaz-ul-Hassan</td>
</tr>
</tbody>
</table>
Standard 6.2:

All faculty members must remain current in the discipline and sufficient time must be provided for scholarly activities and professional development. Also, effective programs for faculty development must be in place.

Table 14: Faculty qualification

<table>
<thead>
<tr>
<th>Sr #</th>
<th>Name of faculty member</th>
<th>Designation</th>
<th>Qualification</th>
<th>Name of Country Awarding Highest Degree</th>
<th>Date of Birth</th>
<th>Email address</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dr. Muhammad Azim Malik</td>
<td>Professor</td>
<td>Ph.D.</td>
<td>USA</td>
<td>20-06-1955</td>
<td><a href="mailto:drazim61@gmail.com">drazim61@gmail.com</a></td>
</tr>
<tr>
<td>2</td>
<td>Dr. Muhammad Ashraf</td>
<td>Professor</td>
<td>Ph.D.</td>
<td>USA</td>
<td>01-09-1952</td>
<td><a href="mailto:muhammad.ashraf@uaar.edu.pk">muhammad.ashraf@uaar.edu.pk</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><a href="mailto:drashraf_150@yahoo.com">drashraf_150@yahoo.com</a></td>
</tr>
</tbody>
</table>
Standard 6.2: Effective programs for faculty development

- Professional training and availability of adequate research and academic facilities are provided to the faculty members according to the available resources.
- Currently one faculty member is abroad for post-Doc as sponsored by the HEC.
- Incentives in the form of allowances to theses supervisors have been implemented lately to promote high standard research.
- Existing facilities include mainly internet access, which is available through networking system in addition to library facility with latest books also available.
- Effective programs for faculty development have been introduced.

Standard 6.3: Faculty member motivation

Time to time provision of enthusiasm to the young faculty by the senior faculty members(Table 15).
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Dr. Muhammad Azim Malik</th>
<th>Dr. Mohammad Ashraf</th>
<th>Dr. Fayyaz-ul-Hassan Sahi</th>
<th>Dr. Zammurad Iqbal Ahmed</th>
<th>Dr. Abdul Razzaq</th>
<th>Mr. Irfan Aziz</th>
<th>Dr. Muhammad Ansar</th>
<th>Dr. Muhammad Rasheed</th>
<th>Dr. Ghulam Qadir</th>
<th>Dr. Mukhtar Ahmed</th>
<th>Dr. Abdul Manaf</th>
<th>Mr. Safdar Ali</th>
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<tbody>
<tr>
<td>Your mix of research, teaching and community service</td>
<td>A</td>
<td>B</td>
<td>A</td>
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<td>A</td>
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<td>The intellectual stimulation of your work</td>
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<td>Type of teaching/research you currently do</td>
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<td>Your interaction with students</td>
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<td>Cooperation you received from colleagues</td>
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<td>Whether the department is utilizing your experience and</td>
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<td>A</td>
<td>B</td>
<td>A</td>
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<tr>
<td>Knowledge</td>
<td>Cooperative attitude of staff and the students</td>
<td>Friendly working environment</td>
<td>Favorable academic/ Research and writing environment.</td>
<td>Good interaction between teachers and students and among teachers</td>
<td>Up gradation has good effect on job satisfaction</td>
<td>Sound climate for working And research</td>
<td>Best coordination among the Faculty members</td>
<td>Cooperative atmosphere</td>
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<tr>
<td>What are the best programs/ factor currently available in your department that enhances your motivation and job satisfaction?</td>
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</table>


| Suggest programs/factors that could improve your motivation and job satisfaction |
| Further facilitation in provision of research/practical facilities as well as space for innovation |
| Establishment of research groups and interdepartmental collaboration based on areas of research may be strengthened |
| Availability of modern approaches in Agronomy |
| Development of laboratories for research work |
| Lab. Conditions should be improved |

A = Very Satisfied;  B = Satisfied;  C = Uncertain;  D = Dissatisfied;  E = Very Dissatisfied
List of publications during the reporting period

1. **Prof. Dr. Muhammad Ashraf**


2. **Prof. Dr. Fayyaz-ul-Hassan**

   a. Shuaib Kaleem¹, Fayyaz- ul- Hassan¹, Abdul Razzaq¹, Abdul Manaf and Aamir Saleem. 2010: Growth rhythms in sunflower (Helianthus annuus L.) in response to environmental disparity. African J. of Biotechnology. 9(15); 2242-2251.

   b. Aamir  Saleem , Fayyaz-ul-Hassan, A. Manaf and M. S. Ahmedani. 2009, Germination of Themeda triandra (Kangaroo grass) as affected by different environmental conditions and storage periods. African J. of Biotechnology. 8(17); 4094-4099.

**CRITERION 7: INSTITUTIONAL FACILITIES**

**Standard 7.1: Infrastructure**

- The department must have the infrastructure to support new trends in learning and research.
- Department has established new laboratory for research related to crop physiology and also working for developing new laboratories.
- Equipments are not sufficient to meet the current requirement of research.

  **Lack of institutional facilities**

- Insufficient facilities regarding the infrastructure to support new trends in learning or prevalent.
- Department library must be developed to provide support to graduate and post graduate students.
- Computer facilities should be provided to the staff and postgraduate students.
- Offices must be adequate to enable faculty to carry out their responsibility.

**Standard 7.2: Library Facilities**

The university Central Library has very limited number of books, journals and periodicals. It’s a small library in term of space and facilities with 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

No class room available. Research laboratories are being used for teaching purpose also, which affect the working of research students. Two to three teachers are sharing rooms. Unavailability of most modern and related books and internet affects the quality of teaching. Common room for students is also missing.

CRITERION 8: INSTITUTIONAL SUPPORT

- Institutional support is highly appreciated.
- The up gradation of existing teaching cadre also provided and added advantage in detaining the present faculty.
- Sufficient secretarial support, technical staff and office equipment.

Lack of Institutional support

- Due to unavailability of class rooms, classes are taken in the laboratories.
- Financial support should be raised and allocate funds for postgraduate research students.

Standard 8.1: Support and financial resources

The department has limited funds and Individual research grants for students and faculty are mainly supporting the departmental research activities. There is a dire need for increasing the financial resources allocated to the department to establish a library, laboratories and computer facilities.

Standard 8.2: High quality Research scholars

The intake is once in a year. A strict merit policy applies and University test/GRE/NTS is preferred.

Standard 8.3: Financial resources

Total budget of the department of agronomy for the financial years 2008-09 and 2009-10 was Rs. 24000 and 202000 respectively which does not fulfill the departmental needs particularly for the purchase of equipment, chemicals etc.

List of Enrolment for last few years

Around 3-5 students get admission in Ph.D. Agronomy every year.
Summary

The Department of Agronomy has well research based program of Ph.D Agronomy guided by highly qualified faculty. The course aims to develop and strengthen students capacity to grasp principles and practices Agronomy based on scientific basis and get research training on farmers oriented problems. The strong academics learned during Ph.D Agronomy helps them to design and conduct quality research for their doctorate degree. In addition they have sufficient specialist knowledge in selected areas to allow them to pursue a research degree in crop science. Doctorate students acquire scientific background as well as having gained experience in problem solving and have developed the communication, numerical and computer skills required for a wide range of careers. In order to assess whether department is fulfilling its objectives or not, surveys on various aspects such as course evaluation, teacher evaluation, alumni survey, research/graduating students surveys and faculty survey etc. have been conducted by the departmental members of the program team. The data were collected on prescribed proforma and later on analyzed and presented in the form of graphs and tables. The data revealed that students are satisfied with the subject approach of faculty members, their fairness in examination, and level of knowledge. Course evaluation survey showed that students are satisfied with workload and value of knowledge provided to them. But the availability of internet and access to various scientific journals is limited. Similarly, department has limited budget (Rs. 202000) for research purposes which cannot support laboratories and research activities.

According to employer students are good at job but they have very basic knowledge of information technology and computer skills. Faculty members are satisfied with their salaries but they have severe concerns about the workload as most of them are agreed that they have very less time for themselves.

- The performance of the department may be further improved considering; separate class rooms are required to enable the Ph.D students to continue laboratory works without breaks.
- Departmental Laboratories need strengthening through new equipments.
- There is also need to improve mix of research and teaching proportion to produce professionally sound graduates,
• At present there are no arrangements for professional training of the staff. Such trainings will improve their abilities for enhancing the quality of research and teaching. It would be worthy to mention here that proper man at proper place is not being practiced.

• There is a shortage of personal computers and unavailability of Internet which creates many impediments. Improvement in this area will also speed up the level of research and teaching.

• The budget allocated to the department hardly meets the requirements of the research.

• At present there is no departmental library. Allocation of sufficient funds for this purpose will be helpful in subscribing reputed journals and purchase of books that will ultimately boost quality of learning, teaching and research,
List of Courses offered by the Department For Ph.D students

<table>
<thead>
<tr>
<th>S. No</th>
<th>Course No.</th>
<th>Title</th>
<th>Credit</th>
<th>Hours</th>
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<tr>
<td>1.</td>
<td>AGRO-710</td>
<td>Crop Nutrition</td>
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<td>2.</td>
<td>AGRO-712</td>
<td>Plant water relations</td>
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<td>3.</td>
<td>AGRO-717</td>
<td>Integrated agriculture</td>
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<td>4.</td>
<td>AGRO-720-I</td>
<td>Seminar</td>
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<td>5.</td>
<td>AGRO-720-II</td>
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<td>1(1-0)</td>
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Compulsory courses for Ph.D. students

(i) Statistics
(ii) Bio-chemistry
(iii) Integrated Agriculture

Annexure-2

Proforma 9 : FACULTY RESUME

<table>
<thead>
<tr>
<th>Name</th>
<th>Dr. Muhammad Ashraf</th>
</tr>
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<tbody>
<tr>
<td>Personal</td>
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</tr>
<tr>
<td>Father’s Name</td>
<td>Faiz Ahmad</td>
</tr>
<tr>
<td>Date of Birth</td>
<td>01-09-1952</td>
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<tr>
<td>Age</td>
<td>56 years</td>
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85
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<th>NIC#</th>
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<tr>
<td>Teaching &amp; Research Experience</td>
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<tr>
<td>Address</td>
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<td>University, Rawalpindi</td>
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### Academic Qualification

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<tr>
<th>Institution</th>
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<tr>
<td>Uni. of Agric. Faisalabad</td>
<td>1974</td>
<td>Agronomy B. Sc. (Hons.)</td>
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<tr>
<td>Uni. of Agric. Faisalabad</td>
<td>1976</td>
<td>Agronomy M.Sc. (Hons.)</td>
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<tr>
<td>Oregon State Univ. USA</td>
<td>1992</td>
<td>Agronomy Ph. D.</td>
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### Experience

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<th>Position</th>
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<th>Years</th>
<th>Activities</th>
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<tbody>
<tr>
<td>Assistant Research Officer</td>
<td>Agric. Department</td>
<td>1981-82</td>
<td>Sugarcane agronomy Govt. of Punjab</td>
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<tr>
<td>Lecturer Agronomy</td>
<td>Barani Agric. College</td>
<td>1982-86</td>
<td>Teaching Agronomy Rawalpindi</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>Barani Agric. College</td>
<td>1986-98</td>
<td>Teaching Agronomy/Univ. of Arid Agriculture and supervision of Rawalpindi thesis research</td>
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<tr>
<td>Associate Professor</td>
<td>Univ. of Arid Agriculture,</td>
<td>1998-2007</td>
<td>Teaching agronomy supervision of thesis research</td>
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</table>
Honor and Awards

- First National Training Course on Biological Nitrogen Fixation, October 1982 NARC, Islamabad

- National In-Service Training Course on “Manpower Planning & Employment” Pakistan Manpower Institute Ministry of Labor, Manpower & Overseas Pakistani (Manpower Division) Islamabad, 7th August, 1986


- A Basic Course on BASICS OF COMPUTER, DOS, WINDOWS’95 and MS WORD September 23, 1997. UIMS. Univ. of Arid Agriculture, Rawalpindi

<table>
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<tr>
<td>Memberships</td>
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<td>Pakistan Association for the Advancement of Science. 73-N Model Town, Lahore(1994-1996)</td>
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<td>Membership Academic Bodies</td>
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<td></td>
<td>Member National Curriculum Revision Committee of Agronomy, HEC, Islamabad.</td>
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<td></td>
<td>Subject matter Specialist. Punjab Service Commission, Lahore.</td>
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<td></td>
<td>Member Academic Council, Univ. of Arid Agriculture, Rawalpindi</td>
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<td></td>
<td>Member Finance and Planning Committee, Univ. of Arid Agriculture, Rawalpindi (2003- onwards).</td>
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<td>Consulting Editor, Sharhad Journal of Agriculture, N.W.F.P. Agric.</td>
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<td></td>
<td>Univ., Peshawar Consulting Editor, Pakistan Journal of Arid Agriculture, Univ. of Arid Agriculture, Rawalpindi</td>
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<td>External Examiner, Agricultural College, Quetta, Univ. of Quetta</td>
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<td></td>
<td>External Examiner, Univ. College of Agriculture B.Z. Univ. Multan</td>
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<td>Amir Aman Ullah</td>
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<td>Safdar Ali</td>
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<td>Farooq Ahmad</td>
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<td>Abid Mahmood</td>
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<td>Ijaz-ul-Hassan</td>
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<td>Hafiz M. Bakhsh</td>
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<td>Muhammad Akhlaq</td>
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<td>Ishaq Zafar</td>
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<tr>
<td>Mehr Ali</td>
<td>Yield and yield components of groundnut under different rainfed conditions</td>
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<tr>
<td>Ahsan Munir</td>
<td>Effect of nitrogen supply on growth, development and yield of wheat</td>
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<tr>
<td>Yasir Habib</td>
<td>Allelopathic effects of brassica and barley herbage water extract on wheat weeds suppression under rainfed conditions</td>
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<td>Fahad Karim Awan</td>
<td>Allelopathic effects of sorghum, sunflower and brassica for weed control in wheat</td>
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<td>Zahid Iqbal Khan</td>
<td>Influence of concentrated sorghum water extract alone and in combination with herbicide for weed control in rainfed wheat</td>
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<tr>
<td>Irfan Sharif</td>
<td>Evaluation of concentrated sunflower water extract alone and with low doses of herbicides for weed control in barley</td>
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<tr>
<td>M. Sajid Mahmood</td>
<td>“Effect of Barley Residue Water Extract in Combination with Low Doses of Herbicide on Weed Control and Yield of Mungbean</td>
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**PH.D. STUDENTS THESIS SUPERVISED**

- Naeem Ahmad 2006 Response of wheat to subsurface soil compaction and improvement strategies.
- Abdul Manaf 2006 Phenotypic plasticity of Brassica in response to environment and sulphur nutrition
- M.Sc(Hons) Students thesis supervised
<table>
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<tr>
<th>Author</th>
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<tr>
<td>Rana Ashfaq Ahmad</td>
<td>2001</td>
<td>Seasonal variation in sunflower.</td>
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<td>Attiq-ur-Rehman</td>
<td>2003</td>
<td>Comparison of wheat cultivars for water use efficiency and</td>
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<td>qualitative traits under rainfed conditions.</td>
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<td>Shahzad A. Hakium</td>
<td>2005</td>
<td>Response of sunflower to Sulphur and seasonal variations.</td>
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<td>Asim Irfan</td>
<td>2005</td>
<td>Feasibility of intercropping Mungbean in Sunflower under Rainfed</td>
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<td>Ahmad Sher</td>
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<td>Performance stability of Canola cultivars under different Agro-</td>
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<td>Muhammad Tahir</td>
<td>2007</td>
<td>Integrated use of herbicide and tillage methods for moisture</td>
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<td>conservation and subsequent canola yield.</td>
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<td>Yasir Khurshid</td>
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<td>Comparative evaluation of some local and exotic safflower genotypes</td>
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<td>Muhammad Arif</td>
<td>2009</td>
<td>Response of Sinapis alba to Agro-management techniques.</td>
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<tr>
<td>Muhammad Farooq</td>
<td>2009</td>
<td>Effects of Agro-management Techniques on Camelina sativa.</td>
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<td>Mubashir Ali</td>
<td>2009</td>
<td>Response of Linola to Agro-management techniques.</td>
</tr>
</tbody>
</table>
Name: Prof. Dr. Fayyaz Ul Hassan

<table>
<thead>
<tr>
<th>Personal</th>
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<tbody>
<tr>
<td>Professor of Agronomy</td>
<td>Phone Office: +92-51-9062217,</td>
</tr>
<tr>
<td>Department of Agronomy</td>
<td>Cell: 0300-9514597</td>
</tr>
<tr>
<td>University of Arid Agriculture, Rawalpindi</td>
<td>Fax Office: +92-51-9290160</td>
</tr>
<tr>
<td>e-mail: <a href="mailto:fayyaz.sahi@uaar.edu.pk">fayyaz.sahi@uaar.edu.pk</a></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:drsahi63@gmail.com">drsahi63@gmail.com</a></td>
<td></td>
</tr>
<tr>
<td>Phone Residence: +92-51-4848187</td>
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<thead>
<tr>
<th>Name</th>
<th>Fayyaz-ul-Hassan</th>
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<tbody>
<tr>
<td>Date of Birth</td>
<td>15-05-1963</td>
</tr>
<tr>
<td>Father’s Name</td>
<td>Abdul Latif</td>
</tr>
<tr>
<td>Permanent Address</td>
<td>Village &amp; Post Office TOOR, Teh. &amp; Distt. JHELUM</td>
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**EDUCATION**

<table>
<thead>
<tr>
<th>University/Board</th>
<th>Degree</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curtin University of Technology, Perth, Australia</td>
<td>Post Doc</td>
<td>2007</td>
</tr>
<tr>
<td>University of Wales Aberystwyth (UK)</td>
<td>PhD</td>
<td>1995</td>
</tr>
<tr>
<td>University of Agriculture, Faisalabad (Pakistan)</td>
<td>M.Sc(Hons)</td>
<td>1988</td>
</tr>
<tr>
<td>University of Agriculture, Faisalabad (Pakistan)</td>
<td>B.Sc(Hons)</td>
<td>1986</td>
</tr>
<tr>
<td>Board of Intermediate &amp; Secondary Education, Mirpur</td>
<td>F.Sc(Pre-medical)</td>
<td>1981</td>
</tr>
<tr>
<td>Board of Intermediate &amp; Secondary Education, Rawalpindi</td>
<td>Matric(Science)</td>
<td>1979</td>
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<thead>
<tr>
<th>Experience</th>
<th>As Professor 23-06-07 to date</th>
</tr>
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<tbody>
<tr>
<td>Main Duties:</td>
<td></td>
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<tr>
<td>● Teaching postgraduate and undergraduate courses.</td>
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</tr>
<tr>
<td>● Supervision of PhD and M.Sc student’s research.</td>
<td></td>
</tr>
<tr>
<td>● Planning &amp; Management of University Research Farm.</td>
<td></td>
</tr>
</tbody>
</table>
- Planning & Execution of cropping pattern/ scheme at Research Farm.
- Writing, planning and execution of research projects.
- Financial and operational management of research projects & Farm.

As Associate Professor  29-05-04 to date 22-06-2007
- Financial and operational management of projects.
- Advisory service when and where needed.

As Assistant Professor: From 22-1-1998 to 29-05-04


As Assistant Research Officer: From 1-1-1989 to 15-11-1989.

**MANAGEMENT EXPERIENCE**

Assistant Warden, From July, 1993 to September, 1995
Cwrt Mawr student’s Hall of Residence, University of Wales Aberystwyth (UK).

<table>
<thead>
<tr>
<th>Honor and Awards</th>
<th>Ministry of Education Scholarship for PhD 1992.</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Overseas Research Students Award 1994-95(Awarded by CVCP UK).</td>
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<tr>
<td></td>
<td>Endeavour Pakistan Research Award by Govt. of Australia, 2007</td>
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<tr>
<td>Publications</td>
<td></td>
</tr>
<tr>
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<td></td>
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<tr>
<td>Aamir Saleem , Fayyaz-ul-Hassan, A. Manaf and M. S. Ahmedani. 2009, Germination of Themeda triandra (Kangaroo grass) as affected by different environmental conditions and storage periods. African J. of Biotechnology. 8(17); 4094-4099.</td>
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<tr>
<th>Supervised Students</th>
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<tr>
<td>PH.D STUDENTS THESIS SUPERVISED</td>
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<tr>
<td>Naeem Ahmad 2006   Response of wheat to subsurface soil compaction and improvement strategies.</td>
</tr>
<tr>
<td>Abdul Manaf  2006   Phenotypic plasticity of Brassica in response to environment and sulphur nutrition</td>
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<thead>
<tr>
<th>M.SC(HONS) STUDENTS FHESIS SUPERVISED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rana Ashfaq Ahmad,  2001. Seasonal variation in sunflower.</td>
</tr>
<tr>
<td>Attiq-ur-rehman  2003 Comparison of wheat cultivars for water use efficiency and qualitative traits under rainfed conditions.</td>
</tr>
<tr>
<td>Shahzad A. Hakium  2005 Response of sunflower to Sulphur and seasonal variations.</td>
</tr>
<tr>
<td>Ahmad Sher  2006 Performance stability of Canola cultivars under different Agro- ecological regions of Pothwar.</td>
</tr>
<tr>
<td>Service Activity</td>
</tr>
<tr>
<td>-----------------------</td>
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</table>
| Brief Statement of Research Interest | • Crop production and Management.  
• Oilseed crop production and enhancement.  
• Alternate crop production.  
• Soil conservation and crop production |
|                       |                                                                                       |