



**Report of the
Accreditation Inspection Committee
(AIC)**

Prof. Dr. Muhammad Arif Chohan
Chairman, Department of Plant Pathology
KPK Agricultural University, Peshawar

Dr. Muhammad Bashir
CSO (Rtd), CDRP, NARC, Islamabad

January 2012

**Plant Pathology, Institute of Agricultural Sciences
University of the Punjab, Lahore**

Evaluation Criteria for Agriculture Degree Programs

Sr No.	Criteria	Points Assigned	Points Awarded
Major Criteria			
1	Strength and Quality of Faculty	250	166
2	Curriculum Design and Development	150	79
3	Infrastructure and Learning Resources	200	156
4	Students Support and progression	100	74
Sub - Total (a)		700	475
Minor Criteria			
5	Research and Consultancy Activities	150	108
6	Governance and Leadership	100	65
7	Recent Innovations and Best practices	50	18
Sub - Total (b)		300	191
Grand Total (a+b)		1000	666

Prof. Dr Muhammad Arif
 Convener AIC/Chairman,
 Department of Plant Pathology,
 KPK Agricultural University,
 Peshawar



Name and Designation

Signature of Program Evaluator

1. General:

1.1 Constitution of Accreditation Inspection Committee (AIC)

The Chairman, National Agriculture Education Accreditation Council (NAEAC), in pursuance to its mandate given by the HEC under clause 10 subsections (d) and (1) of the byelaws of NAEAC, constituted an Accreditation Inspection Committee (AIC) for the external review of the Degree Programs (B. Sc (Hons) and M. Sc (Hons) of the Institute of Agricultural Sciences (IAGS), University of the Punjab, Lahore. The AIC consists of the following members who visited the IAGS on October 19-20, 2011 for the inspection and in-depth review of the degree programs of the Institute:

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|---|-----------------|
| <p>1. Prof. Dr. Muhammad Arif
Chairman,
Department of Plant Pathology,
Khyber Pakhtunkhwa Agricultural University,
Peshawar</p> | <p>Convener</p> |
| <p>2. Dr. Muhammad Bashir
Chief Scientific Officer (CSO) (Rtd.),
Crop Disease Research Program (CDRP),
National Agricultural Research Center (NARC),
Park Road, Islamabad</p> | <p>Member</p> |

1.2 Term of Reference of AIC

The main terms of reference (TOR) of the committee were as follows:

- To validate the Self-Assessment Reports (SAR) of the degree programs (B. Sc and M. Sc (Hons)) prepared by the IAGS
- To carry out an external evaluation of the degree programs in a transparent, neutral, holistic and participatory manner for accreditation and rating of degree programs based on evaluation criteria given in the Evaluation Manual (Toolkit).
- To submit synthesized and concise analytical report (7-8 pages only) consisting of SWOT analysis and actionable recommendations based on interaction with the dean, chairman, faculty members, students, support staff and alumni as well as detail visit of physical infrastructure, facilities and other teaching-learning resources available for the degree programs.
- To submit clear, specific and justified degree programs accreditation and rating recommendations to the Chairman-NAEAC.

The itinerary of the AIC visit schedule is given at Annex-I.

1.3 The University and the Department

Institute of Agricultural Sciences (IAGS) was established in 2002 as a Department of Mycology & Plant Pathology. Later on in 2008, the Department was upgraded to the level of the Institute of Mycology and Plant Pathology (IMPP). It started its research and academic activities in January 2003 with the enrolment of a batch of 20 students for B. Sc. (Hons) program. In the very next year M. Sc. (Hons) program was launched with a simultaneous commencement of classes for regular Ph.D. program. The change in nomenclature of the Institute from 'Mycology & Plant

Pathology' to 'Plant Pathology' was made in June 2010 to fulfill the requirements of stakeholders. In June 2011, the Institute has been upgraded to IAGS

The Institute of Agricultural Sciences (IAGS) has reasonable infrastructure consisting of class rooms, teaching and research laboratories and limited experimental field mainly focus on teaching and research activities in Fungal Plant Pathology. Besides teaching, the institute perusing the research program mainly in Fungal Plant Pathology and Bio-product formulation and commercialization in crop management. Other major areas of Plant Pathology such as Phyto-nematology, Phyto-bacteriology, and Plant Virology need strengthening in teaching and research facilities.

1.4 Program Mission and Objectives

Mission Statement

Providing best learning environment and opportunities to the prospective Agricultural graduates to play key role in crop production, protection, processing and allied aspects of its consumption.

Program Objectives

- 1.To develop linkages with national, regional and international Agricultural Institutions and organizations for collaboration in research and 'split programs'.
- 2.Develop means to disseminate and share information with stake holders.
- 3.Human resource development in agriculture focused on regional agriculture.
- 4.Promoting academic and adaptive research on urban agriculture.

1.5 Academic Programs

The Department is presently offering three degree programs as per following details:

1. B. Sc (Hons) Agriculture specializing in Plant Pathology
2. M. Sc (Hons) Agriculture specializing in Plant Pathology
3. Ph. D in Plant Pathology

2. Criterion-wise Program Evaluation and Analysis

2.1 Criteria-I: Strength and quality of faculty

As per ToR, the AIC met individually or in groups with almost all of the faculty members in the Institute during its visit to the University. The AIC members discussed various issues with faculty members such as academic and professional background, areas of their research and recorded their views and professional input on strengths, weaknesses, opportunities and threats to the degree programs of the Institute. Presently there are 24 faculty members in the Institute; among them, 16 are regular full-time faculty, one is HEC sponsored Foreign Faculty, seven faculty members are on contractual basis and six are part-time faculty members working in the Institute. Among 24, 16 faculty members are holding Ph. D degrees. Out of 24 faculty members, three full time professors, one retired professor (par-time) and one foreign faculty, no Associate Professor, 10 Assistant professors (eight full-time two on contract and 14 lectures (six full-time, four each of on contractual and part-time basis), respectively. A summary of the faculty strength, qualification, status, teaching experience and publications is given in Annex-II & IV (A-C). The faculty strength, although exceed significantly from the HEC approved criterion of minimum 6 for a Department, the required faculty composition ratio is 1:1:2:2 and at IAGS is 3:0:8:6 (Annex-X).

Four faculty members are over 15 years of teaching and research experience, while seven faculty members have professional experience of more than five years but less than 10 years and others are young with minimum one to four years of teaching and research experience. The work load shown for Professors, Assistant Professors and Lecturers is three, nine and nine credit hours, respectively (not as per HEC standard/ guidelines (Table 1). The workload of the faculty of the Department is against HEC guidelines on workload for Professors, Assistant Professors and Lecturers (Annex-IX). The faculty profile analysis and relevance of their degrees to the program offered at IAGS (B. Sc (Hons) in Agriculture specialization in Plant Pathology, M. Sc (Hons) in Agriculture specialization in Plant Pathology) is given in Annex- II. The Institute is extremely deficient with experienced faculty in major areas such as Phyto-bacteriology, Plant Virology and Phyto-nematology.

It was satisfying to note that the Department has organized conferences, symposia and training courses regularly. These events provided a good opportunity to the young faculty and the students to widen their knowledge base and open vistas of both teachers and the taught about the prospects and problems of plant health.

Majority of faculty members are satisfied with their job, however, some are only partially satisfied. Job satisfaction is a function of both internal working atmosphere in the department as well as in the university besides the financial benefits and freedom of professional activity. The faculty members appointed on TTS has shown serious concern on future of TTS scheme, if it could not sustained with one or another reason, the faculty need to appoint on basic scale in same cadre. Most of the faculty members were satisfied with their salaries but have a consistent complaint for ever increasing living costs and non payment of house requisition.

Table 1: Standards/criteria for degree awarding department: strength and quality of faculty- An analysis of Institute of Agricultural Sciences, University of the Punjab case

S. No	Parameters	HEC Criteria/ Standards	IAGS, PU	AIC Remarks
1	Faculty strength	Minimum six teachers /Department	24 (Seven faculty members for Plant Pathology)	Qualifies the minimum limit of HEC (Qualification of most of the faculty members are not relevant to position) (for detail, see Annex-II & III)
2	Visiting faculty	20% of teaching staff	Around 30%	Not as per HEC Standards
3	Ph. D qualified faculty	At-least five Ph. D	11 (Regular Faculty)	Well qualified; Meet HEC Standard
4	Faculty composition	Prof: Assoc. Prof: Asstt. Prof: Lecturer (1:1:2:2)	3:0:8:6 (Regular Faculty)	Not as per HEC Standards (Positions have been advertised to meet HEC standards)
5	Teacher student ratio	1:20	B. Sc (Hons) Program 1:13 M. Sc (Hons) Program 1:7	Exceed the HEC Standards
6	Supporting staff vs teaching staff ratio	1:2	1.6:1	Exceeded the HEC limits
7	Teaching work load (Credit Hours/ week)	Prof: Assoc. Prof: Asstt. Prof: Lecturer (8, 8, 12 & 12 Cr. Hr/Wk), respectively	Prof: Assoc. Prof: Asstt. Prof: Lecturer (3,6, 9 & 9 Cr. Hr/Wk),	Not as per HEC Standards

2.2 Criteria-II: Curriculum design and development

The HEC already approved curriculum for the degree programs [B. Sc (Hons) Agriculture (Plant Pathology) and M. Sc (Hons) Agriculture (Plant Pathology)] during 2010 through National Curriculum Revision Committee (NCRC) and is mandatory for all Agricultural Universities/Colleges and degree awarding institutes of the country to adopt curriculum after approval of their statutory bodies such as BOS, BOF, BASR and Academic Council. The IAGS presently offering following three degree programs in Plant Pathology (first two are in the process of accreditation):

1. B. Sc (Hons) Agriculture (Plant Pathology)
2. M. Sc (Hons) Agriculture (Plant Pathology)
3. Ph. D in Plant Pathology

The HEC requirement for the B. Sc (Hons) Agriculture specialization in Plant Pathology is eight semesters degree program with 130-140 credit hours, including four credit hours internship/project in the eighth semester. The status of curriculum and its adaptation for the degree programs (B. Sc (Hons) Agriculture (Plant Pathology) of IAGS is given in ANNEXURE-VI (A). The careful review of the curriculum adopted by the IAGS for B. Sc (Hons) Agriculture (Plant Pathology) degree program revealed that the degree program is deficient in relevant compulsory, interdisciplinary, supporting courses and major courses, the however for the ongoing sessions, the institutional administration ensured implementation of HEC guidelines in letter and spirit (Curriculum of Plant Pathology, 2010).

As per HEC policy, M. Sc (Hons) in Agriculture specialization in Plant Pathology degree program requires four semesters with minimum of 30 credit hours including 6 credit hours for thesis research and 24 credit hours course work of major and minor courses. The curriculum adopted for the award of degree of M. Sc (Hons) Agriculture specialization in Plant Pathology at IAGS matches with the Curriculum of Plant Pathology, 2010 and fulfills the HEC requirements for M. Sc. (Hons.). AIC suggested improvement in M. Sc (Hons) degree program of the institute in ANNEXURE-VI (B). Feedback from stakeholders is occasional. The students strongly commented for more emphasis on practical/laboratory work. The students further emphasized that they must have opportunity to attend lectures from scholars in different areas of Plant Pathology in term of lectures, symposia, workshops, national conferences, etc. in order to learn recent trends in Plant Pathology.

The committee had gone through the course contents and found that objectives of all the courses for B. Sc, M. Sc. and Ph. D were not defined and according to the HEC guidelines. It was suggested by the AIC that Plant Pathology curriculum recently revised (Revised Curriculum-2010) could be implemented in letter and spirit to improve the quality of degree programs. While interviewing the faculty, it was noted that all the faculty members did not maintain their course files and provide lecture wise course detail, time of mid-test, assignments, quizzes and final test to the students in their first meeting at the beginning of a semester. Evaluation system of each course is in place but not as per HEC guidelines.

2.3 Criteria-III: Infrastructure and learning resources

2.3.1 Research and Teaching Laboratories: The IAGS is newly established and has adequate number (nine) of teaching and research laboratories (ANNEXURE-VIII). The AIC visited the institutional infrastructure and found adequate for teaching research activities relevant to the

degree programs under accreditation [(B. Sc Hons) and M. Sc (Hons) in Agriculture (Plant Pathology)]. Laboratories are spacious but without safety arrangements and security plans.

2.3.2 Laboratory Equipment: Most of the laboratories are equipped with newly purchased equipment. All equipment is found functional and operative. Two central laboratories are well equipped. Major equipment such as incubators, refrigerators, autoclave, microscopes, laminar flow unit, colony counter, homogenizer, Walk-in Plant growth chamber, water distillation unit, etc. were in place to cater the need of under-and postgraduate students. Detail of the laboratory equipment is given in ANNEXURE-VIII. AIC further recorded that the supply of laboratories chemicals and diagnostics were adequate and sufficient to fulfill the requirement of quality teaching and research activities at degree programs under accreditation. Most of the subjects, the laboratory manuals were available. Student's views about practical learning were not encouraging and reported that most of the practical were limited to laboratory demonstration. The availability and qualification of laboratory staff is given in ANNEXURE-V. The AIC noticed that there is adequate number of support staff available in the Department but technical competency of the staff was not relevant. The support staff was satisfied with the department management and the students. However, they were dissatisfied with the existing promotion and career opportunities in the Department/Faculty. In service training of support staff was not in place.

2.3.3 Safety arrangements: There is no proper safety arrangement and no security plan is in place in case of emergency. No fire extinguishers have been installed in any laboratory. No first aid kits/facilities provided in the laboratories/department.

2.3.4 Greenhouses and experimental field facility: The facility of one each of screen house and glass house was available adjacent to the Institute. More environmentally controlled glass house facility is required to cater research activities. Six acres experimental field is available which is insufficient to conduct field experiment for the degree programs.

2.3.5 Departmental and main library

Departmental Library: The institute has its own library with almost 1852 relevant books including 150 reference books and seating capacity of about 70 students. There is insufficient budget (Rs. 0.10 million/year) for the purchase of books, journals, etc at institute level. However, the library is linked with HEC library digital data base. The existing library facility is not sufficient to fulfill the requirement of the student until it linked with main library of the university (Annexure X).

2.3.6 Computer Laboratory: The Institute has a computer laboratory with 25 computers for students with basic facilities access to internet. In addition to the computer laboratory, the many laboratories have their own computers with internet access. All faculties have their computers in their offices. The computer ratio for student is about 1:5 and faculty is 1:1. The institute have own website in the University main website.

2.3.7 Classrooms and teaching aids: There are five classrooms for under and post graduate students each with 865 sq. ft of size. Teaching aids such as multimedia, overhead projectors, etc were available in laboratories and class rooms of the Institute.

2.3.8 Faculty Offices: More than 20 faculty offices are available. Senior faculty members are sitting in rooms adjacent to the laboratories and have their computer purchased by them or in project grants.

2.4 Criteria-IV: Students support and progression

The number of students enrolled various semesters of under- and postgraduate programs shows reasonable response. HEC guidelines were followed for admissions both at B. Sc (Hons) and M. Sc (Hons) degree programs. The students support such as hostel, sport, medical, transport facilities and financial aid and academic counseling support was in place and available to the students. Financial support is available at University as different need and merit based scholarships but the number of such scholarships are not at par with the requirement and need to increase so that maximum students can avail scholarships opportunities.

Student interaction with teachers was excellent and their attitude toward studies was found encouraging. Students from B.Sc. (Hons) were sent to various research institutes for internship throughout the province where they acquire practical training and submit a formal report. Students were questioned to judge their knowledge in different areas of Plant Pathology but response was satisfactory.

2.5 Criteria-V: Research and consultancy activities

The research and consultancy activities at the Institute were adequate as reflected by the research projects completed and ongoing (ANNEXURE-IX). The AIC noted that the faculty of the Institute was actively engaged in research activities. Significant number of research publications has been made through the research conducted by the faculty members at the Institute (ANNEXURE-IV (C)). The department has developed a reasonable research culture and the staff is motivated to contribute to research journals. However, more encouragement should be provided to faculty staff to carry forward the spirit and implementation of research programs. The Department has completed 13 research projects so far and 18 research projects are on-going. The detail of faculty research is given in Annexure-IV (C).

2.6 Criteria-VI: Governance and leadership

The University of the Punjab is an autonomous body having its own charter of functions as per University Ordinance 1979. The highest governance authority is the Vice Chancellor assisted by the Registrar, Treasurer, and Controller of Examinations and Dean of the faculties and Director of the institute. The Vice Chancellor performs his functions through bodies including the Syndicate, the Senate, Academic Council, Advance Studies & Research Board, Finance and Planning Unit, and directorates of Student Affairs, Quality Control and Placement Bureau. All these bodies function within the frame work of rules & regulations and guidance defined by HEC. Funds are provided by HEC for regular activities and specific research & special programs. There is a good working relationship between faculty members and the management; however, some operational constraints have been experienced. The budget allocation for operational expenses and research are low as compared to the requirement and expectations.

At present, the University of the Punjab and Punjab Agriculture Research Board (PARB) are seems main contributor for research funds. However, faculty has earned reasonable amount of research grants from UAF resources or other organization such as HEC and Pakistan Science Foundation (PSF). AIC recommends that young faculty must be encouraged to earn competitive grants for research activities in the Institute and postgraduate students could be involved as research associates to get practical experience and knowledge. The students must be encouraged to become members of professional and scientific bodies to have interactions with the senior members and benefit from their experiences. Supporting staff was quite appreciative for their involvement in the various activities of the Institute.

2.7 Criteria-VII: Adoption of best practices

The AIC confirm that mechanism for ensuring quality exists. However, improvement is required needed in various areas of conduct. Some innovative practices adopted by Institute and short fall are highlighted as under:

- Teacher and student assessment system has been implemented which has created sense of responsibility and all time attentiveness.
- Assessment of individual courses based on feed back from students also deserves appreciation.
- Evaluation of students is based on mid term examination, assignments and final examination which requires a student to be attentive and responsive through out the semester and improve his abilities.
- Permission is given to the students to check their answer books and resolve anomalies if any for their satisfaction which is a good sign for confidence of both student and teacher.
- Introduction of comprehensive exam/ paper covering major subjects is an important tool for revision of important topics before award of degree.

3. Overall analysis of the degree programs based on strength, weakness, opportunities and threats (SWOT)

3.1 Major strengths

- The Department have necessary infrastructure with nine functional laboratories, five class rooms, 14 faculty offices, departmental library and computing facility. The Department is further facilitated with an experimental farm, screen-and glasshouse facility and main library with sufficient learning resources for undergraduate and post-graduate teaching and research activities.
- The faculty has been active to hunt externally funded research grants as well as from local donors. So far 13 research projects have been completed and 18 research projects in hand from various donor agencies.

3.2 Major weaknesses

- Degrees (Bachelor and Master) of over 50% of the faculty members are not professionally relevant to the program offered at IAGS.
- The curriculum adopted by the IAGS for B. Sc (Hons) Agriculture (Plant Pathology) degree program revealed that the degree program is deficient in relevant compulsory, interdisciplinary, supporting courses and major courses as par HEC approved Curriculum and curriculum adopted at Agricultural Universities in Pakistan for the same degree program
- Department needs to improve in capacity building by inducting quality faculty in Phyto-bacteriology, Phyto-nematology, Plant Virology and Fungal Pathology.
- The work load shown for Professors, Assistant Professors and Lecturer is not at par HEC standards and guidelines.
- Over 50% of the faculty members are on TTS with no job security and deficient of quality teaching and research experience

3.3. Major opportunities

- Due to the location of the IAGS at Lahore and under the auspices of PU, the faculty may have better opportunities to hunt funds for their research and development programs
- The Department is located in provincial capital and near major cotton growing areas of the Punjab; therefore, international donors could be attracted for funding to solve cotton leaf curl and other diseases of cotton.

- Strong linkages could be developed with various research and developmental organizations and corporate sector. The institute has better opportunity to develop academia-industry linkages for the socio-economic development of the country.

3.4. Potential threats

- Sustainability of the IAGS as “mono degree awarding institute” (Plant Pathology) could be cost intensive and un-justified. Specialization in other subjects such as Agronomy, Horticulture, Plant Breeding & Genetics, Entomology and Agricultural Economics could provide academic support to the institute.
- Quality of degree programs [B. Sc (Hons) Agriculture (Plant Pathology) and M. Sc (Hons) Agriculture (Plant Pathology)] with more than 50% faculty members having degrees in irrelevant fields is potential threat to the institute.
- Awarding degree of B. Sc (Hons) Agriculture (Plant Pathology) and M. Sc (Hons) Agriculture (Plant Pathology) with deficiency in compulsory, interdisciplinary, supporting courses and major courses is serious thread to the programs under accreditation
- Retention of TTS faculty at the institute is a challenge, if TTS faculty not gradual absorbed on BS system, this will also be a potential thread to the academic programs at the institute.

4. Recommendations

4.1. General recommendations

After careful SWOT analysis of the degree programs offered at IAGS, the AIC suggested following recommendations:

- The IAGS need to improve B. Sc (Hons) and M. Sc (Hons) Agriculture specialization in Plant Pathology degree programs at the institute. The AIC recommends the implementation of the proposed scheme of studies as has been shown (ANNEXURE-V II (A & B) for B. Sc (Hons) and ANNEXURE-VII (C) and XII) for M. Sc (Hons) Agriculture specialization in Plant Pathology degree programs at IAGS. The AIC also recommends the scheme of studies of Ph. D degree program in Plant pathology for the institute (ANNEXURE-VII (D) and XII).
- It is further recommended that the scheme of studies for B. Sc (Hons), M. Sc (Hons) and Ph. D (optional) degree programs (ANNEXURE-VII (A-D)) could be approved from the statutory bodies such as BOS, BOF, and academic Council on priority basis.
- The institute needs to appoint Associate and Assistant Professors in areas of Fungal Plant Pathology, Phyto-bacteriology, Plant Virology, Phyto-nematology and Physiological Plant Pathology with relevant educational background.
- More than 50% of the faculty members are on TTS with no job security and deficient of quality teaching and research experience. The TTS faculty gradually appointed on regular basis for their job security. This will improve faculty strength in the Department.
- Most of the regular/TTS faculty of the Department has local Ph.D degrees; therefore, to broaden their exposure need short term trainings and post-doctorate from technological advanced countries.
- Financial assistance could improve the quality of internship programs at B. Sc (Hons) degree program; therefore, it is recommended that budget could be allocated to the Department for conduction of postgraduate research.
- It is recommended that 20% budget of the institute may be increased for smooth functioning of the institute.
- Professional cooperation and trust among senior faculty may be improved.
- The department library could be enriched with induction of books, local and international journals, literature and computers on continuous basis by allocation of additional funds for departmental library.
- Safety arrangements and security plans are not in place. Emergency exits may be arranged. The laboratories may also be equipped in first aid kits/facilities.

- To broaden the view of the students and teachers, more linkages could be developed with institutions of higher learning both at national and international levels.
- Participation of faculty members in conferences, seminars and workshops may be encouraged to improve exposure and interaction with peer groups worldwide.

4.2 Final Recommendation

- The academic programs [(B. Sc (Hons) and M. Sc. (Hons) Agriculture specialization in Plant Pathology] of the Institute of Agriculture (IAGS), University of the Punjab, Lahore, are reasonably strengthened to cater the need of present enrolment of graduate and postgraduate levels of the above mentioned plant pathological degrees. The institute needs to address major weaknesses discussed in this report. The AIC has given recommendations for the improvement of the Degree programs at the institute.
 - On the basis of the inspection/evaluation, the team recommends accreditation/rating of the Degree Programs of [(B. Sc (Hons) and M. Sc (Hons) Agriculture specialization in Plant Pathology] of the IAGS, University of the Punjab, Lahore, Pakistan in the Lower band (67%) of “X” category of National Agriculture Education Accreditation Council/HEC.

4.3 Comments and signature of the Director:

I agree with the observations and recommendations made by the Accreditation Inspection Committee (AIC) in this report which is based on the discussions and visit to different facilities of this Department. The attitude of the Honorable members of the Committee remained highly helping and admirable apart from a high sense of decency, for which the under signed pay a lot of homage to them.



The Director,
Institute of Agricultural Sciences, University of the Punjab,
Lahore

Dated: January 13, 2012

4.4 Name, Designation and signatures of the AIC Members

Prof. Dr Muhammad Arif

Chairman,
Department of Plant Pathology, (Convener)
KPK Agricultural University,
Peshawar



Dr. Muhammad Bashir

Chief Scientific Officer (CSO)
(Rtd.), Crop Disease Research
Program (CDRP), National (Member)
Agricultural Research Center
(NARC), Park Road, Islamabad



Dated: January 13, 2012

**ANNEXURE-I:
Itinerary of AIC On-Site Accreditation Visit**

Host Institution: University of the Punjab, Lahore

Institute/Program: Institute of Agricultural Sciences (IAGS)

Review Team:

1. **Prof. Dr. Muhammad Arif** (Convener)
Chairman,
Department of Plant Pathology, KPK AUP
2. **Dr. Muhammad Bashir** (Member)
Chief Scientific Officer (CSO) (Rtd.),
CDRP, NARC, Park Road, Islamabad

NAEAC Resource Person: Naseer Alam Khan, Secretary NAEAC

Schedule of Visit: **October 19-20, 2011**

Day 01	Time	Activity
	09:00-10:30	<p>Presentation: Director, Institute of Agricultural Sciences (IAGS)</p> <ul style="list-style-type: none"> • History of Institute/Academic Programs • Mission Statement • Program Goals and Objectives • Annual operational budget (2011-12) & Human Resources (teaching, non teaching) • Curricula Summary, Revision/Update • Admission and withdrawal policy • Faculty Summary, Qualification/ Experience, Support Staff • Students intake, teaching load, students-teacher ratio • Grading System • Infrastructure Summary, Labs, Greenhouse, Library, class rooms and faculty offices etc. • Employers Feedback • Alumni Survey • Parents Viewpoint • Question/Answer Session • Strengths and weaknesses of degree programs, Mechanism of ensuring merit, transparency and unbiased-ness in place
	10:30-12:00	<p>Curriculum Review: IAGS Coordinator</p> <ul style="list-style-type: none"> • Course files maintenance - evidence • Intended students learning outcomes • Curricula is current - evidence • Curricula is globally compatible - evidence • Curricula is periodically reviewed by BOS & BOF - evidence • Stakeholders feedback for revision of curricula – minutes of BOS meetings • Course review reports - evidence • Attendance requirements • Maintenance of Examination Record • Session/Semester Record • Students Evaluation Instruments, examination of a sample of graduate Research Synopsis and theses • Research Projects by faculty/students
	12:00 – 13:00	<p>Infrastructure Visit: IAGS Coordinator</p> <ul style="list-style-type: none"> • Research & Teaching Labs, quality & use of lab equipment, lab manuals • Greenhouses & Experimental farms & farm machinery & equipment
	13:00-14:30	Zohar Prayers & Lunch
	14:30-16:00	<p>Infrastructure Visit: IAGS Coordinator</p> <ul style="list-style-type: none"> • Departmental and main Library, availability of recommended text-books & reference books • Computer Labs, Internet and multimedia facilities • Classrooms number & size with multimedia facility • Faculty Offices & facilities, Committee room & seminar room etc
	16:00-17:00	Meeting of AIC for review and synthesis

Day 02	Time	Activity
	08:30-10:30	Faculty Meetings: 10-15 minutes one-to-one with each Faculty Member <ul style="list-style-type: none"> • Graduation and Higher studies • Personal Background, courses being taught • Area of Interest Vs teaching –learning environment • Perception about the academic programs, Students and peers • Opportunities for professional growth • Research Opportunities, participation in seminars/conferences • Salary Perception and other incentives, Job satisfactions • Teaching Load, student- teacher ratio • Meetings with Support Staff
	10:30-12:00	Classroom Visit: Two classrooms with 45 min. each <ul style="list-style-type: none"> • Students dropout rate (B.Sc & M.Sc) scholarships, financial assistance, guidance & counseling facilities • Financial support, scholarships, interest free loans • Hostel accommodation, transport, outdoor –indoor sports • Medical facility • Counseling & guidance, interaction with teachers • Students perception about degree programs • SWOT analysis on curriculum, faculty and other teaching-learning resources • Access and quality of services of main library and other facilities • Job prospects, placements , Alumni association • Students Interviews (B.Sc Hons final & M.Sc Hons) • Students Assessment System (IAGS Coordinator) • Senior students views and suggestions to improve teaching-learning environment, facilities, resources & quality of teaching <p>* In case of no class, Meeting of AIC members with two groups of Undergraduate and Graduate (M.Sc Hons) students.</p>
	12:00-13:30	Prayers and Lunch
	13:30-15:00	SWOT Analysis: Faculty/Students view point <ul style="list-style-type: none"> • Strengths of Academic Programs • Weaknesses of Academic Programs • Opportunities for Academic Programs • Threats to Academic Programs
	15:00-15:15	Concluding Meeting with Director of the Institute
	15:15-16:00	Concluding/Exit meeting with Dean <ul style="list-style-type: none"> • Salient Findings of the on-site review • Sharing of salient findings and recommendations • Program for submission of final report • Formulation of Actionable Recommendations based on participatory SWOT Analysis • Next Procedure

ANNEXURE-II:
Profile of faculty: Relevance of their degrees with the degree awarding programs¹

S. No	Name of the Faculty	Designation	Degrees			AIC remarks
			Bachelor	Master	Ph. D	
1.	Dr. M. Saleem Haider	Professor & Director	B. Sc (Hons) in Agric. (Plant Pathology)	M. Sc (Hons) in Agric. (Plant Pathology)	Plant Pathology (Plant Virology)	Degrees are relevant² to the program offered at IAGS
2.	Dr. Ghazala Nasim	Professor	Botany	Botany	Botany	Degrees are not relevant² to the program offered at IAGS
3.	Dr. Sheikh M. Iqbal	Professor	B. Sc (Hons) in Agric. (Plant Pathology)	M. Sc (Hons) in Agric. (Plant Pathology)	Plant Pathology (Mycology)	Degrees are relevant² to the program offered at IAGS
4.	Dr. Safdar A. Anwar	Foreign Faculty	B. Sc (Hons) in Agric. (Plant Pathology)	M. Sc (Hons) in Agric. (Plant Pathology) (Plant Nematology)	Plant Pathology (Plant Nematology)	Degrees are relevant² to the program offered at IAGS
5.	Dr. Salik Nawaz Khan	Assistant Professor	B. Sc (Hons) in Agric. (Plant Pathology)	M. Sc (Hons) in Agric. (Plant Pathology)	Plant Pathology (Mycology)	Degrees are relevant² to the program offered at IAGS
6.	Dr. Ahmad Ali Shahid	Assistant Professor	B. Sc (Hons) in Agric. (Plant Pathology)	M. Sc (Hons) in Agric. (Plant Pathology) (Plant Nematology)	Plant Pathology (Plant Nematology)	Degrees are relevant² to the program offered at IAGS
7.	Dr. Tehmina Anjum	Assistant Professor	B. Sc (Botany)	M. Sc (Botany)	Botany (Biotechnology)	Degrees are not relevant² to the program offered at IAGS
8.	Dr. Arshad Javaid	Assistant Professor	B. Sc (Botany)	M. Sc (Botany)	Botany (Bio-fertilizers)	Degrees are not relevant² to the program offered at IAGS
9.	Dr. Shakil Ahmad	Assistant Professor	B. Sc (Botany)	M. Sc (Botany)	Botany (Environmental Sciences)	Degrees are not relevant² to the program offered at IAGS
10.	Dr. Amna Javaid	Assistant Professor	B. Sc (Botany)	M. Sc (Botany)	Botany (Mycology)	Degrees are not relevant² to the program offered at IAGS
11.	Dr. Uzma Bashir	Assistant Professor	B. Sc (Botany)	M. Sc (Botany)	Botany (Mycology)	Degrees are not relevant² to the program offered at IAGS

12.	Dr. Shazia Shafique	Assistant Professor	B. Sc (Botany)	M. Sc (Botany)	Botany (Mycology)	Degrees are not relevant ² to the program offered at IAGS
13.	Dr. Sobiya Shafique	Assistant Professor	B. Sc (Botany)	M. Sc (Botany)	Botany (Mycology)	Degrees are not relevant ² to the program offered at IAGS
14.	Dr. Javaid Iqbal	Assistant Professor	B. Sc (Hons) in Agric. (Entomology)	M. Sc (Hons) in Agric. (Entomology)	Entomology	Degrees are relevant to the program offered at IAGS
15.	Mr. Asad Shabbir	Lecturer	-	-	On Ph.D. Leave	Detail not available
16.	Ms. Zill-e-Huma	Lecturer	B. Sc (Botany)	M. Sc (Botany)	In progress at GC Univ. , Lahore	Degrees are not relevant ² to the program offered at IAGS
17.	Mr. Nadeem Shad	Lecturer	B. Sc (Hons) in Plant Pathology	M. Sc (Hons) in Plant Pathology	On Ph.D. Leave	Degrees are relevant ² to the program offered at IAGS
18.	Ms. Naureen Akhtar	Lecturer	B. Sc (Botany)	M. Sc (Botany)	On Ph.D. Leave	Degrees are not relevant ² to the program offered at IAGS
19.	Ms. Maleeha Uroos	Lecturer	B. Sc (Botany)	M. Sc (Chemistry)	On Ph.D. Leave	Degrees are not relevant ² to the program offered at IAGS
20.	Ms. Sana Hanif	Lecturer	B. Sc (Hons) in Plant Pathology	M. Sc (Hons) in Plant Pathology	-	Both degree in Plant Pathology from PU but no agricultural background;
21.	Ms. Shabnam Javaid	Lecturer	B. Sc (Botany)	M. Sc (Chemistry)		Degrees are not relevant ² to the program offered at IAGS
22.	Mr. Zakaullah	Lecturer	B. Sc (Hons) Agri-Engineering	M. Sc (Water Resources)	-	Degrees are relevant to the program offered at IAGS
23.	Mr. Muhammad Shafiq	Lecturer	B. Sc (Hons) in Agric. (Horticulture)	M. Sc (Hons) in Agric. Horticulture	-	Degrees are relevant to the program offered at IAGS
24.	Mr. Adnan Zahid	Lecturer	B. Sc (Hons) in Agric. (Agronomy)	M. Sc (Hons) in Agric. (Agron)	-	Degrees are relevant to the program offered at IAGS

¹The Institute of Agricultural Sciences (IAGS) at University of the Punjab, offering B. Sc (Hons) in Agriculture specialization in Plant Pathology and M. Sc (Hons) in Agriculture specialization in Plant Pathology, degree programs

²Minimum qualification for the appointment of a Lecturer (BPS-18) at HEC approved degree awarding institute/university is Master's Degree (first Class) in the **relevant field** with no 3rd division in the academic career from HEC recognized University/Institution (detail see Annex- III). Therefore, B. Sc (Hons) in Agriculture specialization in Plant Pathology, M. Sc (Hons) in Agriculture specialization in Plant Pathology and Ph. D in Plant Pathology from HEC recognized University/Institute shall be considered as **relevant** degree for the appointment of faculty at IAGS.

ANNEXURE-III:
Minimum qualification and experience for the appointment of faculty members in the
Universities: HEC requirement

S. No	Position	Minimum qualification	Experience	Publications
1	Lecturer (BPS-18)	Master's Degree (first Class) in the relevant field with no 3 rd division in the academic career from HEC recognized University/Institution.	No experience required	No publication require
2	Assistant Professor (BPS- 19):	Ph.D. in the relevant field from HEC recognized University/Institution, No experience required. OR Master's Degree (foreign) or M.Sc (Hons) (Pakistan) in the relevant field from HEC recognized University/Institutions.	Four years teaching/research experience in a recognized university or a post-graduate Institution.	No publication require
3	Associate Professor (BPS- 20)	Ph.D. in relevant field from HEC recognized University / Institution.	Ten-years teaching / research in HEC recognized University or a post-graduate Institution or professional experience in the relevant field in a National or International Organization OR Five-years post Ph.D. teaching/research experience in HEC recognized University or a post-graduate Institution or professional experience in the relevant field in a National or International Organization.	Eight research publications (with at least two publications in last five years) in internationally abstracted Journals recognized by the HEC.
4	Professor (BPS-21)	Ph.D. from HEC recognized Institution in relevant field .	Fifteen-years teaching / research experience in HEC recognized University or post-graduate Institution or professional experience in the relevant field in a National or International Organization OR Ten-years post-Ph.D teaching/research experience in a recognized University or a post-graduate Institution or professional experience in the relevant field in a National or International Organization.	Twelve research publications in internationally abstracted Journals recognized by the HEC (with at least five publications in last five years) in internationally abstracted Journals recognized by the HEC.

ANNEXURE-IV
Faculty profile: Experience and Publications

Name	Academic Degree		Major Area	Teaching Experience (years)		Publication Record									
	Degree	Awarding Institution		Graduate	Undergrad.	Journal Publications				Conference Publications		Books		Patents	Tech. Reports
						Intl.	Local		Intl.	Local	Books	Book Chapters			
							I.F	Non I.F					I.F		
Dr. M. Saleem Haider	Ph.D.	University of London	Molecular Plant Virology	14		10	06	5	9	02	-	-	01	-	01
Dr. Ghazala Nasim	Ph.D.	University of the Punjab	Botany	22											
Dr. Sheikh M. Iqbal	Ph.D.	Quaid-e-Azam University	Mycology	-	-	2	1	18	62	6	8	03	-	-	-
Dr. Salik Nawaz Khan	Ph.D.	Quaid-e-Azam University	Plant Pathology	08		5	1	2	19	-	-	01			06
Dr. Tehmina Anjum	Ph.D.	University of the Punjab	Botany	07		13		4	9	04	-	-	-	-	01
Dr. Arshad Javaid	Ph.D.	University of the Punjab	Botany	06		57		20	83	01	11	06	08	-	-
Dr. Shakil Ahmad	Ph.D.	G.C. University Lahore	Botany	06		03		02	18	-	-	-	-	-	-
Dr. Ahmad Ali Shahid	Ph.D.	University of the Punjab	Molecular Plant Biology	21		04	06	13	13	02	-	01	-	-	-

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Dr. Amna Shoaib	Ph.D.	University of the Punjab	Mycology & Plant Pathology	04	05	02	03		-	-	03	-	-	-
Dr. Uzma Bashir	Ph.D.	University of the Punjab	Mycology & Plant Pathology	03	-	-	01	02	-	-	01	-	-	-
Dr. Shazia Shafique	Ph.D.	University of the Punjab	Mycology & Plant Pathology	03	06	17	12	23	01	02	04	-	-	-
Dr. Sobiya Shafique	Ph.D.	University of the Punjab	Mycology & Plant Pathology	03	06	17	12	23	01	02	04	-	-	-
Dr. Javaid Iqbal	Ph.D.	Saarland University, Germany	Entomology	-	6 months	-	-	-	-	-	01	-	-	-
Ms. Zill-e-Huma	M.Phil	G.C. University Lahore	Botany	-	06	-	-	01	01	-	-	02	-	-
Ms. Sana Hanif	M.Sc. (Hons.)	University of the Punjab	Mycology & Plant Pathology	-	1½ year	-	-	01	-	-	-	01	-	-
Shabnam Javed	M.Phil	Uni. of the Punjab	Chemistry	-	03	01	01	-	-	-	-	-	-	-
Mr. M. Shafiq	M.Sc. (Hons.)	Uni. of Agriculture Faisalabad	Horticulture	-	10 months	01	-	01	-	-	-	-	-	-
Mr. Adnan Zahid	M.Sc. (Hons.)	University of Arid Agriculture Rawalpindi	Agronomy	-	10 months	-	-	01	-	-	01	-	-	-
Mr. Zakauallah	M.Sc	Uni. of Engineering & Technology Lahore	Water Resources Engineering	-	06 months									

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ANNEXURE-V

List of supporting staff indicating name, designation, highest qualification and In-line experience

S. No	Name of supporting staff	Designation	High Qualification	In-line experience (Years)
1	Mr. M. Aslam	PS	Intermediate	33
2	Mr. Taufiq Asghar	Admin Officer	B.Com	23
3	Ms. Saira Saroya	Librarian	M.Phil	3
4	Mr. Irfan Mahmood	Store Supervisor	D.Com	9
5	Mr. Khurram Shahzad	Sr. K.P.O.	B.A.	6
6	Mr. Sohail Sarwar	Nursary Supervisor	Matric	10
7	Mr. Muhammad Hammad	Sr. K.P.O.	B.Sc.	10
8	Mr. Ishtiaq Shahzad	Jr. Technician	B.A.	14
9	Ms. Aliya Ahmad	Laboratory Assistant	B.A.	9
10	Syed Ehsan Haider Zaidi	Jr. Clerk	B.A.	13
11	Mr. M. Nasir Shah	Jr. Clerk	Matric	8
12	Mr. Muhammad Akram	Laboratory Assistant	F.A.	5
13	Mr. Ch. Abdul Raffay	Field Assistant	B.A.	8
14	Mr. Iqbal Shad	Laboratory Attendant	B.A.	8
15	Mr. Sarfraz Nawaz	Laboratory Attendant	F.A.	6
16	Mr. Abid Hussain	Laboratory Attendant	B.A.	6
17	Mr. Amjad Badar Zaman	Laboratory Attendant	Matric	6
18	Muhammad Jameel	Laboratory Attendant	F.A.	1
19	Faiza Imtiaz	Lab. Attendant	F.Sc.	1
20	Mr. Sajjad Ali	Library Attendant	Matric	4
21	Mr. Irfan Ali	Library Attendant	Matric	9
22	Ms. Shazia Zaman	Jr. K.P.O.	M.A. History M.A. Islamiyat	9
23	Ms. Rubina Aslam	Store Keeper	B.A. B.Ed.	1
24	Mr. Sajjad Shaheen	Naib Qasid	Matric	1
25	Mr. Faisal Nasim	Naib Qasid	Matric	1
26	Samsoon Masih	Sanitary Worker	Un educated	9
27	Abid Ali	Electrician/ Security Guard	Middle	8
28	Fateh Muhammad	Farash	Un Educated	
29	Abid Ali	Security Guard	Middle	2
30	Muhamamd Riaz	Security Guard	Middle	2
31	Muhammad Ashfaq	Field Man	Middle	2
32	Abbas Ali	Gardner	Matric	7
33	Imran Hussain Bhatti	Baildar	Matric	7
34	Faqeer Hussain	Baildar	Un educated	2
35	Ikhtiar Ali	Gardner	Un-educated	6
36	Aziz Ullah	Gardner	Un-educated	7
37	Muhammad Riaz	Gardner	Un-educated	7
38	Jahanzeb Khan	Gardner	Un-educated	8
39	Shahzad Khan	Gardner	Un-educated	8

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**ANNEXURE-V I (A):
Comparison of HEC approved scheme of studies for B. Sc (Hons) in Agriculture
(Plant Pathology) with scheme of studies adopted at IAGS**

HEC approved scheme of studies		Scheme of studies at IAGS		AIC Remarks
Courses	Cr. Hr. ¹	Courses	Cr. Hr.	
1. Compulsory courses				
Mathematics / Biology (2 courses)	6 (3-0) (2-1)	√	3(3-0)	Adequate if F. Sc Pre-medical students admitted only
Statistics 1 & 2	6 (3-0) (3-0)	√	3(3-0)	(1) Less credited than the required (2) Stat-2 missing
Computers / IT	3 (2-1)	√	2(0-2)	Over credited than the required
Pakistan Studies	2 (2-0)	√	√	Adequate
Islamic Studies	2 (2-0)	√	3(3-0)	Over credited than the required
Communications Skills	3 (3-0)	√	2(1-1)	Less credited than the required
English	3 (3-0)	√	√	Adequate
Basic Agriculture	3 (2-1)	√	√	Adequate
Sub-total	28		21	07 Cr. Hr. deficient
2. Interdisciplinary Foundation Courses				
Agronomy	3 (2-1)	√	2(1-1)	Less credited than the required
Plant Breeding & Genetics	3 (2-1)	√	√	Adequate
Entomology	3 (2-1)	√	(3) 4(2-2)	Over credited than the required
Plant Pathology	3 (2-1)	√	√	Adequate
Food Technology	3 (2-1)	√	3(3-0)	Practical missing
Horticulture	3 (2-1)	√	√	Adequate
Soil Sciences	3 (2-1)	√	(3) 4(3-1)	Over credited than the required
Agriculture Economics	3 (2-1)	√	(3) 4(3-1)	Over credited than the required
Sub-total	24		20	04 Cr. Hr. deficient
3. Supporting Courses (6-8 courses (3 Cr. Hr.) amongst below				
Agriculture Extension		√	√	Adequate
Forestry & Range Management		√	√	Adequate
Animal Science		√	2(1-1)	Less credited than the required
Marketing & Agri Business		-	-	
Rural Development		√	2(2-0)	Less credited than the required
Human Nutrition		-	-	
Agriculture Chemistry		-	-	
Agriculture Engineering		√	2(1-1)	Less credited than the required
Water Management		√	2(1-1)	Less credited than the required
Other discipline recommended by the Univ.²				
(1) Introduction to Food Sci & Tech		√	√	Adequate
(2) General Crop Physiology		√	2(1-1)	Less credited than the required
(3) Introductory Horticulture		√	√	Adequate
Sub-Total	18-24		22	
Sub-Total during the first four semesters	70-76		63	07 Cr. Hr. deficient
Semester 5, 6, 7 & 8	56-60		36	20 Cr. Hr. deficient
Project / Internship	04		04	
Grand Total	130-140		103	38 Cr. Hr. are less than the required for Degree Program

¹One credit of theory =01contact hour per week and 01 Prac. / Lab hour = two contact hr. / wk for 16-18 wks.

²In case of non availability of department of supporting courses, courses from foundation can be opted.

ANNEXURE-V I (B):
Comparison of HEC approved scheme of studies for M. Sc (Hons) in Agriculture
(Plant Pathology) with scheme of studies adopted at IAGS

HEC approved scheme of studies		Scheme of studies at IAGS		AIC Remarks
M. Sc (H) First Year-Spring Semester				
Courses	Cr. Hr. ¹	Courses	Cr. Hr.	
Major Course I	3	√	√	Adequate
Major Course II	3	√	√	Adequate
Major Course III	3	√	√	Adequate
Major Course IV	3	√	√	Adequate
Total Credit Hours Major Courses	12		12	Adequate
Minor (Elective) I ²	3	X	X	Two courses, each of three credit from minor field are deficient
Minor (Elective) II	3	X	X	
Total Credit Hours Minor Courses	06		00	Deficiency of six Cr. Hr.
Sub-total	18		12	Less credited than the required
M. Sc (H) First Year-Fall Semester				
Major course I ³	3	√	√	Adequate
Major course II	3	√	√	Adequate
Major course III	3	√	√	Adequate
Major course IV	3	√	√	Adequate
Total Credit Hours Major Courses	12		12	Adequate
Minor (Elective) I	3	X	X	Two courses, each of three credit from minor field are deficient
Minor (Elective) II	3	X	X	
Total Credit Hours Minor Courses	06		00	Deficiency of six Cr. Hr.
Sub-total	18		12	Less credited than the required
Total Credit Hours Major Courses of First Year (Spring & Fall Sem.)	24	√	√	Adequate
Total Credit Hours Minor Courses of First Year (Spring & Fall Sem.)	12	X	X	Deficiency of 12 Cr. Hr.
Total Cr. Hr. for Major & Minor Courses at 2:1	36 (24:12)		24 (24:00)	Less credited than the required and deficient of courses of minor fields
Total Cr. Hr. for Research Thesis + Thesis Seminar-I	10+1	√	(10+1) 5	Considered as 10 Cr. Hr. for Thesis
Total Cr. Hr. of Course Work + Research Thesis	36+11 = 47		24+11= 35	Courses more than 10-12 Cr. Hr. less than the required for the Degree Program

¹One credit of theory = one contact hour per week for 16-18 weeks and 1 practical / Lab hour = two contact hours per week for 16-18 weeks.

²Statistics is compulsory minor course while other minor courses will be enrolled by the students on the recommendations of BOS in Plant Pathology/Chairman, Department of Plant Pathology with consultation of research supervisory committee

³Major courses semester wise distribution will be made on the recommendation of the Chairman, Department of Plant Pathology from the list of approved post-graduate curriculum of Plant Pathology

ANNEXURE-V II (A):
Proposed Scheme of Studies for B. Sc (Hons) Agriculture specialization in Plant Pathology
Degree Program with Revised Curriculum 2010

Courses for 1-5th Semesters			
Courses	Title	Cr. Hr.	
1. Compulsory courses	Mathematics / Biology (2 courses)	6 (3-0) (2-1)	
	Statistics 1 & 2	6 (3-0) (3-0)	
	Computers / IT	3 (2-1)	
	Pakistan Studies	2 (2-0)	
	Islamic Studies	2 (2-0)	
	Communications Skills	3 (3-0)	
	English	3 (3-0)	
	Basic Agriculture	3 (2-1)	
	Sub-total	28	
2. Interdisciplinary Foundation Courses	Agronomy	3 (2-1)	
	Plant Breeding & Genetics	3 (2-1)	
	Entomology	3 (2-1)	
	Plant Pathology	3 (2-1)	
	Food Technology	3 (2-1)	
	Horticulture	3 (2-1)	
	Soil Sciences	3 (2-1)	
	Agriculture Economics	3 (2-1)	
	Sub-total	24	
3. Supporting Courses (6-8 courses (3 Cr. Hr.) amongst below	Agriculture Extension		
	Forestry & Range Management		
	Animal Science		
	Marketing & Agri Business		
	Rural Development		
	Human Nutrition		
	Agriculture Chemistry		
	Agriculture Engineering		
	Water Management		
	Any other discipline recommended by the university		
	Sub-Total	18-24	
Sub-Total during the 1-4th semesters		70-76	
Courses for 5-8th semesters			
4. Major Courses	Semester 5, 6, 7 & 8		56-60
	Introduction to Plant Viruses	3(2-1)	
	Introduction to Plant Prokaryotes	3(2-1)	
	Introductory Mycology	3(2-1)	
	Introduction to Plant Parasitic Nematodes	3(2-1)	
	Beneficial Microorganisms	3(2-1)	
	Diseases of Field Crops	3(2-1)	
	Introductory Forest Pathology	3(2-1)	
	Diseases of Vegetable Crops	3(2-1)	
	Plant Resistance to Diseases	3(2-1)	
	Soil-borne Plant Pathogens and their Management	3(2-1)	
	Plant Disease Diagnosis	3(1-2)	
	Diseases of Fruits and Ornamentals	3(2-1)	
	Seed and Post-harvest Pathology	3(2-1)	
	Plant Disease Management	3(2-1)	
	Introduction to Molecular Plant Pathology	3(2-1)	
	Plant Disease Epidemiology	3(2-1)	
	Pesticides, their Action and Application	3(2-1)	
	Abiotic Diseases of Plants	3(2-1)	
	Methods and Techniques in Plant Pathology	3(2-1)	
	Sub-total	56-60	
Project / Internship		04	
Total (1-8th Semesters)		130-140	

¹ One credit of theory = one contact hour per week for 16-18 weeks and 01 practical/lab hour = two contact hours per week for 16-18 weeks

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ANNEXURE-V II (B):

Implementation plan of Proposed Scheme of Studies for B. Sc (Hons) Agriculture specialization in Plant Pathology Degree Program with Revised Curriculum 2010

Ist SEMESTER		
Course No.	Course Title	Credit Hours¹
AgM-301	Engineering Application to Agriculture	3(2-1)
Hort-301	Introductory Horticulture	3(2-1)
FST-301	Introduction to Food Science & Technology	3(2-1)
AEE-301	Introduction to Agriculture Extension Education	3(2-1)
Bot-301 or Math-301	Botany or Math-I (Algebra)	3(2-1) 3(3-0)
Eng-301	English-I (Functional English)	3(3-0)
	Sub-total	18
2nd SEMESTER		
PBG-311	Introductory Genetics	3(2-1)
RD-311	Introduction to Rural Development	3(3-0)
AgEc-311	Introduction to Economics & Agricultural Economics	3(3-0)
Agron-311	Basic Agriculture	3(2-1)
Ent-311 or Math-311	Zology or Math-II (Calculus)	3(2-1) 3(3-0)
CS-IT-311	Introduction to information & Communication Technologies	3(2-1)
IS-ES-311	Islamic Studies or Ethics (for non-Muslim students)	2(2-0)
	Sub-total	20
3rd SEMESTER		
Agron-401	General Crop Production	3(2-1)
PBG-401	Introductory Plant Breeding	3(2-1)
Ent-401	Introductory Entomology	3(2-1)
HN-401	Human Nutrition	3(2-1)
Stat-401	Statistics-I	3(2-1)
PakS-401	Pakistan Studies	2(2-0)
	Sub-total	17
4th SEMESTER		
SES-411	Introduction to Soil & Environmental Sciences	3(2-1)
WM-411	Fundamental of Water Management	3(2-1)
Eng-411	English-II (Communication Skills)	3(3-0)
PP-411	Introductory Plant Pathology	3(2-1)
Stat-411	Statistics-II	3(2-1)
PPr-411	Fundamentals of Plant Protection	3(2-1)
	Sub-total	18
	Total (1-4th Semesters)-General Courses	73
5th SEMESTER		
PP-501	Introductory Mycology	3(2-1)
PP-502	Introduction to Plant Viruses	3(2-1)
PP-503	Introduction to Prokaryotes	3(2-1)
PP-504	Introduction to Plant Parasitic Nematodes	3(2-1)
PP-505	Introductory Forest Pathology	3(2-1)
	Sub-total	15
6th SEMESTER		
PP-511	Introduction to Molecular Plant Pathology	3(2-1)
PP-512	Diseases of Field Crops	3(2-1)

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PP-513	Diseases of Vegetable Crops	3(2-1)
PP-514	Beneficial Microorganisms	3(2-1)
PP-515	Soil-borne Plant Pathogens and their Management	3(2-1)
	Sub-total	15
7th SEMESTER		
PP-601	Plant Resistance to Diseases	3(2-1)
PP-602	Plant Disease Diagnosis	3(2-1)
PP-603	Diseases of Fruits and Ornamentals	3(2-1)
PP-604	Plant Disease Management	3(2-1)
PP-605	Seed and Post Harvest Pathology	3(2-1)
	Sub-total	15
8th SEMESTER		
PP-611	Plant Disease Epidemiology	3(2-1)
PP-612	Methods and Techniques in Plant Pathology	3(2-1)
PP-613	Pesticides, their Action and Applications	3(2-1)
PP-699	Internship	4 (0-4)
	Sub-total	13
	Total (5-8th Semesters)-Specialization courses	58
	Grand Total (1-8th Semesters)	131

¹ One credit of theory = one contact hour per week for 16-18 weeks and 01 practical/lab hour = two contact hours per week for 16-18 weeks. Minimum Credit Hours requirement for B. Sc (Hons) Agriculture specialization in Plant Pathology Degree Program including Internship = 130-140 Cr. Hr.

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ANNEXURE-V II (C):

Proposed Scheme of Studies for M. Sc (Hons) Agriculture specialization in Plant Pathology Degree Program with Revised Curriculum 2010

- Minimum Credit Hours requirement for M. Sc (Hons) Agriculture specialization in Plant Pathology
 - **Total Credit Hours = 47**
 - Course work (credit Hours) = 36 (2:1 Major courses: Minor Courses 24:11 or 23:12)
 - Research (Thesis) & Seminar-I (Credit Hours) = 11

M. Sc (H) First Year-Spring Semester		
Course No.	Course Title	Credit Hours ¹
PP-...	Major Course I ²	3
PP-...	Major Course II	3
PP-...	Major Course III	3
PP-...	Major Course IV	3
	Total Credit Hours Major Courses	12
	Minor (Elective) I ³	3
	Minor (Elective) II	3
	Total Credit Hours Minor Courses	06
M. Sc (H) First Year-Fall Semester		
Course No.	Course Title	Credit Hours
PP-...	Major course I	3
PP-...	Major course II	3
PP-...	Major course III	3
PP-...	Major course IV	3
	Total Credit Hours Major Courses	12
	Minor (Elective) I	3
	Minor (Elective) II	3
	Total Credit Hours Minor Courses	06
	Total Credit Hours Major Courses of First Year (Spring & Fall Semesters)	24
	Total Credit Hours Minor Courses of First Year (Spring & Fall Semesters)	12
	Total Cr. Hr. for Major & Minor Courses at 2:1	36 (24:12)
	Total Cr. Hr. for Research Thesis + Thesis Seminar-I	10+1
	Total Cr. Hr. of Course Work + Research Thesis	36+11 = 47

¹ One credit of theory = one contact hour per week for 16-18 weeks and 01 practical/lab hour = two contact hours per week for 16-18 weeks

²Major courses semester wise distribution will be made on the recommendation of the Chairman, Department of Plant Pathology from the list of approved post-graduate curriculum of Plant Pathology

³Statistics and Chemistry are compulsory minor courses while other minor courses will be enrolled by the students on the recommendations of BOS in Plant Pathology/Chairman, Department of Plant Pathology with consultation of research supervisory committee

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ANNEXURE-V II (D): Proposed Scheme of Studies for Ph. D in Plant Pathology Degree Program with Revised Curriculum 2010

- Minimum Credit Hours requirement for Ph. D in Plant Pathology
 - **Total Credit Hours = 50**
 - Course work (credit Hours) = 30 (2:1 Major courses: Minor Courses 20:10)
 - Research (Thesis) (credit Hours = 20)

Ph. D First Year-Spring Semester		
Course No.	Course Title	Credit Hours ¹
Ph. D Semester-I (Spring)		
PP-...	Major course I ²	3
PP-...	Major course II	3
PP-...	Major course III	3
Total Credit Hours Major Courses		9
	Minor (Elective) II ³	3
Total Credit Hours Minor Courses		3
Ph. D First Year-Fall Semester		
Course No.	Course Title	Credit Hours
Ph. D Semester-II (Fall)		
PP-...	Major course I	3
PP-...	Major course II	3
Total Credit Hours Major Courses		6
	Minor (Elective) I	3
Total Credit Hours Minor Courses		3
Ph. D Second Year-Spring Semester		
Course No.	Course Title	Credit Hours
Ph. D Semester-III (Spring)		
PP-...	Major course I	3
PP-...	Major course II	3
Total Credit Hours Major Courses		06
	Minor (Elective) I	3
	Minor (Elective) II	3
Total Credit Hours Minor Courses		6
Ph. D Second-Fourth Year- Semesters IV-VIII		
PP-...	Seminar-II (Ph. D Synopsis)	1(1-0)
PP-...	Seminar -III (Ph. D Thesis)	1(1-0)
PP-...	Research Thesis (Ph. D)	20(0-20)
Total Credit Hours Major Courses (Semester I-III)		21
Total Credit Hours Minor Courses (Courses (Semester I-III))		12
Total Cr. Hr. for Major & Minor Courses at 2:1		33 (21:12)
Total Cr. Hr. for Research Thesis + Thesis Seminar-II&III		22(20+1+1)
Total Cr. Hr. of Course Work + Research Thesis		55 (33+22)

¹ One credit of theory = one contact hour per week for 16-18 weeks and 01 practical/lab hour = two contact hours per week for 16-18 weeks

²Major courses semester wise distribution will be made on the recommendation of the Chairman, Department of Plant Pathology from the list of approved post-graduate curriculum of Plant Pathology

³Statistics and Chemistry are compulsory minor courses while other minor courses will be enrolled by the students on the recommendations of BOS in Plant Pathology/Chairman, Department of Plant Pathology with consultation of research supervisory committee

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**ANNEXURE-VIII:
Complete inventory of operational Laboratory Equipment**

S. No.	Description of Equipment	Qty.	S. No.	Description of Equipment	Qty.
01	Auto clave	12	38	Water Distillation apparatus	06
02	Monocular/Binocular microscopes	71	39	Mini centrifuge	01
03	Oven electric	03	40	Global positioning system	01
04	Digital balance	14	41	Florescent Microscope	01
05	Laminar flow cabinet	08	42	Poly Acryl amide Gel Apparatus	01
06	Triple beam balance	01	43	Eppendorf centrifuge	02
07	Psychrometer	04	44	Cooled Incubator	03
08	pH meter	10	45	Digital Camera	01
09	Conductivity Meter	01	46	Freeze dryer	01
10	Magnetic stirrer with hot plate	07	47	Cryostat system	01
11	Incubator	03	48	Rotary Microtome with knife sharpener	01
12	Water distillation apparatus plus Deionizer	01	49	Tissue Processor	01
13	Stereomicroscope	09	50	Tissue embedding system	01
14	Micro-centrifuge	02	51	Cryo-preservation apparatus	01
15	Horizontal gel electrophoresis system	01	52	UV Trans-illuminator	01
16	Electrophoresis power supply	02	53	Temperature (Humidity) Chamber	01
17	Electrophoresis blotting system	01	54	Ultra Low Chest Deep Freezer	01
18	Drying cabinet	01	55	Flame Photometer	02
19	UV Illuminator	04	56	Vertical Gel Apparatus	02
20	Spectrophotometer UV visible	05	57	Elisa Reader Washer System	03
21	Hybrigene hybridization incubator	01	58	Rotary Microtome with quick Freezer unit	01
22	PCR machine thermal cycler	02	59	Upright Deep Freezer -86	01
23	UV lamp	02	60	Plant Growth Chamber	02
24	Dark hood ultra violet PVP	01	61	Shaking Incubator with Illuminator	02
25	Camera Lucida	01	62	Gel Documentation System with Thermal Printer	03
26	Rotary Evaporator	01	63	Essential oil Steam Distillation unit	01
27	Laboratory Grinder	01	64	Aloe Vera Gel Processing unit	01
28	Orbital Shaker	02	65	Maxi Vertical Gel Electrophoresis	01
29	Moisture Meter	01	66	Variable Micropipettes	02
30	Microwave Oven	02	67	Air Humidifier	01
31	Humidity Meter	01	68	Centrifuge Machine for Four Falcon Tubes	01
32	Bubble Stirrer Mixer	01	69	Chiller	01
33	Freezer	01	70	Water Bath	02
34	Fridge	08	71	Oil Expression unit	01
35	Display Freezer	02	72	Multimedia Projector	05
36	Freezer Upright	02	73	Slide Projector	01
37	Slide Cabinet	02			

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ANNEXURE-IX:

Detail of funded research projects completed; and ongoing with P.I. and funding source

Externally project-**Completed**:

S. No	Project title	Principal Investigator	Funding source
1	Soil microbial analysis for biosafety hazards and risk management in some hybrid varieties of corn, pea and radish.	Prof. Dr. Ghazala Nasim	U P., Lahore
2	Development of software for the identification of Macromycetes of Ayubia National Park.	Prof. Dr. Ghazala Nasim	U P., Lahore
3	Post harvest constraints of tomato	Dr. Salik Nawaz Khan	U P., Lahore
4	Pathological constraints of cut flowers in Punjab	Dr. Salik Nawaz Khan	U P., Lahore
5	“exploring new fungal sources for the production of Cyclosporin A”	Dr. Tehmina Anjum	U P., Lahore
6	Production enhancement of Cyclosporin ‘A’ by <i>Aspergillus terreus</i>	Dr. Tehmina Anjum	U P., Lahore
7	Herbicidal activity of metabolites of <i>Trichoderma</i> spp. against some problematic weeds of wheat	Dr. Arshad Javaid	U P., Lahore
8	Evaluation of antifungal potential of <i>Datura metel</i> for management of root rot in mungbean caused by <i>Macrophomina phaseolina</i>	Dr. Arshad Javaid	U P., Lahore
9	Management of Capsicum Wilt by <i>Coronopus didymus</i>	Dr. Arshad Javaid	U P., Lahore
10	Optimization of cultural condition for the production and partial purification of Xylanase from <i>Aspergillus</i> species.	Dr. Shakil Ahmad	U P., Lahore
11	Biological control and genetic characterization of <i>Fusarium solani</i> .	Dr. Shazia Shafique	U P., Lahore
12	Biological control and genetic characterization of <i>Alternaria alternata</i> .	Dr. Sobiya Shafique	U P., Lahore
13	Effect of Agricultural Pesticides on the Neurological Behaviour of Honeybee (<i>Apis mellifera</i>) in Pakistan	Dr. Javaid Iqbal	HEC, Islamabad

Externally project-**Ongoing**:

S. No	Project title	Principal Investigator	Funding source
1	Molecular analyses of Potato virus Y infecting potato crop in different regions of Punjab.	Prof. Dr. M. Saleem Haider	U P., Lahore
2	Novel approach to generate wide spectrum virus resistance to all cotton infecting begomoviruses infecting cotton and other cultivated crops.	Prof. Dr. M. Saleem Haider	PARB
3	Pak-US Cotton Productivity Enhancement Project (2011-2014)	Prof. Dr. M. Saleem Haider	USAID
4	Pak-Australia linked project on “Biology and Management of Parthenium weed”.	Prof. Dr. Ghazala Nasim	HEC, Islamabad
5	VAM commercialization for higher farm production	Prof. Dr. Ghazala Nasim	HEC, Islamabad
6	Biosorption as a solution to industrial pollution	Prof. Dr. Ghazala Nasim	E P D, Punjab
7	Post harvest disease management of tomato (<i>Lycopersicon esculentum</i> Mill.) by application of fungicides	Salik Nawaz Khan	U P., Lahore
8	Natural compounds from allelopathic trees as antifungal agents against <i>Ascochyta rabiei</i> (Pass.) Lab.	Dr. Arshad Javaid	PSF, Islamabad
9	Management of Basal Plate Rot Disease of Onion by Extracts and Residue incorporation of <i>Withania somnifera</i>	Dr. Arshad Javaid	U P., Lahore
10	Development of Myco-technological process for treatment of Pulp & Paper industries effluent	Dr. Shakil Ahmad	E P D, Punjab
11	Establishment & Up-gradation of Industrial Mycology Research Lab.	Dr. Shakil Ahmad	U P., Lahore
12	Management of root rot of <i>Arachis hypogaea</i> L. in rainfed areas of Punjab.	Dr. Shakil Ahmad	PhD- HEC Scholar Project , Islamabad

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13	Influence of arsenic on wheat growth and its bioremediation through agricultural waste	Dr. Shakil Ahmad	U P., Lahore
14	Bioefficacy of extracts of Ageratum cornyzoides to control Drechslera species	Dr. Shakil Ahmad	U P., Lahore
15	Influence of arsenic on wheat growth and its bioremediation through agricultural waste	Dr. Amna Javaid	U P., Lahore
16	Bioefficacy of extracts of Ageratum cornyzoides to control Drechslera species	Dr. Shazia Shafique	U P., Lahore
17	Cymbopogon Citratus as a remedy to control Alternaria species - a cause of leaf spot diseases	Dr. Sobiya Shafique	U P., Lahore
18	Quantitative analysis of ligninolytic enzymes by Phanerochaete chrysosporium	Ms. Zill-e-Huma	U P., Lahore

Annexure X:

Detail of Current enrollment of Undergraduate and Post-graduate students
in different semesters

Detail of Current Enrolment of Students in Department of Plant Pathology						
Year	Undergraduate Program				Post-graduate Programs	
	B. Sc (H)				M. Sc (Hons)	Ph. D
	Semesters					
	V	VI	VII	VIII		
2008	21	17	17	40	62	05
2009	29	21	21	17	69	13
2010	38	29	29	21	35	17
2011	39	38	29	29	22	17

Annexure XI:

Student teacher Ratio

S. No	Year	B. Sc (Hons)	M. Sc (Hons)
1	2008	12:1	6:1
2	2009	14:1	6:1
3	2010	12:1	8:1

a) Student/Faculty Ratio in B. Sc (H) Program

b) Student/Faculty Ratio for M. Sc (Hons) Program

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Annexure XII:

List of courses for postgraduate degree (M. Sc (Hons)/M. S & Ph. D) in Plant Pathology

S. No.	Course No	Course title	Cr. Hr. ²
1	PP-701	Fungal Systematics	3(2-1)
2	PP-702	Fungal Plant Pathology ¹	3(2-1)
3	PP-703	Plant Virology ¹	3(2-1)
4	PP-704	Plant Bacteriology ¹	3(2-1)
5	PP-705	Plant Nematology ¹	3(2-1)
6	PP-706	Ecology and Epidemiology of Plant Diseases	3(2-1)
7	PP-707	Biochemistry and Physiology of Diseased Plants	3(2-1)
8	PP-708	Genetics of Plant Pathogens	3(3-0)
9	PP-709	Seed Pathology	3(2-1)
10	PP-710	Integrated Plant Disease Management	3(2-1)
11	PP-711	Post Harvest Pathology	3(2-1)
12	PP-712	Biology and Cultivation of Edible Fungi	3(2-1)
13	PP-713	Insects in Relation to Plant Diseases	3(2-1)
14	PP-714	Forest and Shade Tree Pathology	3(2-1)
15	PP-715	Urban Plant Pathology	3(2-1)
16	PP-716	Plant Quarantine and SPS measures	3(2-1)
17	PP-717	Advances in Plant Pathology	3(3-0)
18	PP-718	Molecular Plant Virology	3(2-1)
19	PP-719	Molecular Plant Microbe Interactions	3(2-1)
20	PP-720	Biological Control of Plant Pathogens	3(2-1)
21	PP-796	Special Problem	1(1-0)
22	PP-794	Seminar-I (M. Sc (H) Thesis)	1(1-0)
23	PP-795	Research Thesis (M. Sc (H))	10 (0-10)
24	PP-797	Seminar-II (Ph. D Synopsis)	1(1-0)
25	PP-798	Seminar -III (Ph. D Thesis)	1(1-0)
26	PP-799	Research Thesis (Ph. D)	20(0-20)

¹ Core courses for M. Sc (Hons) Specialization in Plant Pathology

² One credit of theory = one contact hour per week for 16-18 weeks and 01 practical/lab hour = two contact hours per week for 16-18 weeks