September 25, 2019

Dr. Nadia Tahir

MD QAA

Higher Education Commission

Islamabad

Subject: **SUBMISSION OF EXECUTIVE SUMMARY OF SELF-ASSESSMENT REPORT (SAR) PLANT PROTECTION PROGRAM 2018-19**

Dear Madam

Please find attached duly signed, executive summary of SAR Plant Protection Program (2018-19) offered by Department of Agriculture & Agribusiness Management, University of Karachi.

Thanking you in anticipation

Regards

Jawaid Akram

Executive Summary

Self-Assessment Report (SAR) of Program Plant Protection

Department of Agriculture & Agribusiness Management

Quality Enhancement Cell (QEC)

University of Karachi

University of Karachi has established a Department of Agriculture and Agribusiness Management to structure a roadmap to counter the challenges that our farmers are facing. The department offers specialized courses in "Plant Protection", which enables the students acquire in-depth knowledge of pest and diseases affecting various crops, and the management strategies to overcome the problems as well.

To pursue this aim the Department is designated to initiate and implement Self-Assessment process designed by Quality Assurance Agency (QAA) of HEC. The department is committed to produce students who can be good plant protectionist to enhance efficiency & performance of various organizations to lead in global market place. Department follows its vision in all of its courses and specializations that are being offered at undergraduate, postgraduate and doctoral level. The department feels contentment on the completion of following list of tasks.

1. Preparation of Self-Assessment Report (SAR) by Program Team for plant protection program.
2. Conduction of critical review and submission of Assessment Report (AR) by Assessment Team.
3. Development of Rectification Plan by Head of Department.

This all methodology was completed through Program Teams and Assessment Teams nominated by QEC.

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Methodology

The following steps were adopted to complete this whole SAR process:

1. A Program Team (PT) was nominated for the program (Table 1). Initial orientation and training sessions for all members were arranged by QEC.

Table 1: Program Team

S.No.	Name	Affiliation
1.	Dr. Muhammad Faheem Akbar	Assistant Professor Department of agriculture & Agribusiness Management, University of Karachi
2.	Dr. Muhammad Shahid	Assistant Professor Department of agriculture & Agribusiness Management, University of Karachi

2. All the relevant material such as SAR manual, different Survey forms, etc. was provided to PT.
3. Continuous support, guidance and feedback were also provided to PT members to prepare the SAR for said program.
4. After completion and submission of the final SAR from PT, an Assessment Team (AT) was formulated by Director QEC with the consent of Vice chancellor and a team Subject Specialists & Experts from outside was also included (Table 2).

Table 2: Assessment Team

S.No.	Name	Affiliation
1.	Prof. Dr. Abdul Mubeen Lodhi	Professor Department of Plant Protection, Faculty of Crop Protection Sindh Agriculture University, Tandojam
2.	Dr. Hakim Ali Sahito	Associate Professor Date palm Research Institute Shah Abdul Latif University (SALU) Khairpur Pakistan

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5. The SAR developed by PT was forwarded to AT for the purpose of critical review.
6. After completion of critical review and assessment of the SAR, AT members made a visit to the department and held a meeting with PT.
7. After the visit, AT submitted a report and feedback form to QEC.
8. QEC forwarded the observations & findings of AT report to the chairperson for developing a rectification plan.
9. QEC would now monitor implementation of Rectification Plan.

Parameters for the SAR:

The SAR is prepared on the following eight (8) criteria prescribed by the HEC:

1: Program Mission, Objectives and Outcomes

- 2: Curriculum Design and Organization
- 3: Laboratory and Computing Facility
- 4: Student Support and Advising
- 5: Process Control
- 6: Faculty
- 7: Institutional Facilities
- 8: Institutional Support

Findings in the SAR:

Following is the summary of the key SAR findings:

Academic Observations:

1. More spacious and well equipped laboratories to fulfill the contemporary level of research/education are necessitated for better output
2. developing linkages with national and international organization
3. Exposure of students in job markets
4. Encouragement and formation of incubation Centre

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5. Farmers field days, participatory research activities.
6. Establishment of demonstration plots at farmers' fields.
7. Arrangement of faculty trainings in advanced countries to equip them with latest developments and research skills
8. Four (04) Computers are available for teachers, 02 for the other staff, but none for the students at the department,

Administrative Observations:

1. More screen house facility is required to conduct research trials.
2. Improvement in permanent and extended agriculture farm should be established for field research.
3. Improvement in resources including research journals, and magazines.
4. Lack of digital lab and internet in department.

Conclusion and Recommendations:

In the SAR it has been analyzed that the department with plant protection program is satisfactory with some recommendation to follow. The reflection in the SAR reported good for the program with the assessment score of 82.99 out of 100 reported by the AT.

AT also reported improvement of screen house facility, improvement in permanent and extended agriculture farm, lack of resources including digital lab, research journals, magazines and internet in department. These shortfalls rectified in entire SAR and has been reported to Chairperson Department of Agriculture & Agribusiness Management. QEC will follow up the implementation plan as per QEC guidelines.

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Director QEC

DR. SABOOHI RAZA
CHAIRPERSON
Department of Agriculture &
Agribusiness Management
University of Karachi

VC
For approval.

Approved
Acting Vice Chancellor
University of Karachi
Karachi.

UNIVERSITY OF KARACHI
KARACHI

DEPARTMENT OF AGRICULTURE& AGRIBUSINESS MANAGEMENT

PLANT PROTECTION

SELF ASSESSMENT REPORT
B.S., M.Phil., Ph.D. in Agriculture

2018-19

Program Team Members
Dr. Saboohi Raza
Dr. M. Faheem Akbar
Dr. Muhammad Shahid
along with QEC

DR. SABOOHI RAZA
CHAIRPERSON
Department of Agriculture &
Agribusiness Management
University of Karachi

Assessment Team Member
Prof. Dr. Abdul Mubeen Lodhi
Dr. Hakim Ali Sahito
along with QEC

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CONTENTS

Introduction

Agriculture plays a major part in Pakistan's economy with 19.5 percent of the gross domestic production, employing 42.3 percent of the labor force and providing raw material for several value-added sectors. Sindh is gifted with Indus river and Sindh produces a variety of field and horticultural crop. Of the total Pakistan agriculture production, Sindh produces 35% of the rice, 28% of sugarcane, 12% of wheat, 20% of the cotton, 88% of chilies, 73% of bananas, and 34% of the mangoes. Sindh also produces fodder, pulses, condiments, oilseeds, fruits, vegetables, and production of a large livestock industry.

Exportation of agricultural products are the main source to improve the economy of Pakistan. To facilitate trade with other countries, certain sets of rules and obligation have been developed by WTO and the trading nations which are normally followed in foreign trade today. Pakistan is facing the multifaceted problems in agriculture trade. This has caused a great loss to our country and which might result in permanent banned of trade. After fulfilling the requirement of WTO, Pakistan can export its commodities and able to open new dimensions of export to high earning countries. This will lead to high foreign exchange and farmers will be able to get better prices for their produce.

Karachi is a business hub of Pakistan. Majority of the multinational and local agricultural companies are based in Karachi. Apart from this, major agriculture export and import activities are carried out in Karachi. To create the manpower in the field of agriculture in Karachi, University of Karachi has created a Department of Agriculture to structure a roadmap to counter the challenges that our farmers are facing. To counter the challenges, Department of Agriculture was initiated as BS Program in Agriculture in 2004. It acquired the status of the Department in 2006 and renamed as Department of Agriculture and Agribusiness Management in 2008. The department offers specialized courses in "Plant Protection, Plant Pathology and Agribusiness Management". Pests and diseases produce huge pre- and post-harvest losses in crop yield that contributes a great deal to the ever-increasing food crises. Implementation of efficient and precise pest and disease management strategies can be helpful in increasing the crop yield and ultimately to boost the economy of the country. Courses offered for specialization in Plant Protection enables the students acquire in-depth knowledge of pest and diseases affecting crop, vegetable, fruit, and ornamental plants in the country as well as the management strategies to overcome the problem.

CRITERION-1: PROGRAM MISSION, OBJECTIVES AND OUTCOMES

Programme Mission Statement

The programme is solely entitled to educate and train the young and prospective plant protectionist by providing them necessary skills and experiences to develop sound decision-making capacity.
It provides its graduates with a capacity to learn advanced pest management techniques and lead them to stay abreast with the recent up fronts in plant protection.
The department aims to develop well-educated and skilled manpower to manage the pre- and post-harvest losses caused by different pests affecting crops productivity in the country.

Standards:

Standards 1.1: Documented strategic and measurable objectives:

1. To educate and train future plant protectionist for better understanding for crop protection and research.
2. To produce learned skilled and technically sound human resource for the job market and effective research and development.
3. To foster and promote agriculture entrepreneurship.

Outcomes:

After completion of the BS programme in Agriculture with major in Plant Protection, the students shall be able to:

1. Identify the plant pathogen and pest correctly.
2. Proper understanding of management pest and pathogens.
3. Will be able to learn and implement good agricultural practices and environmentally friendly methods.
4. Focus on implementation of biodiversity and ecological conservation methods.
5. Make a business plan and lead an agricultural enterprise.
6. Can manage existence businesses related to plant protection.
7. Undertake and commence research related to various aspects of plant protection

Main elements of strategic plan to achieve mission and objectives

Program objectives assessment

Table 1: Objective assessment

Sr. #	Objectives	How Measured	When Measured	Improvement Identified	Improvement Made
1.	To educate and train future plant protectionist for better understanding for crop protection and research.	**Surveys** a. Course Evaluation Questioner b. Graduating students survey c. Employer survey d. Alumni survey	2018-19	1. lab facilities 2. developing linkages with national and international organization	Molecular plant pathology lab was built with well-equipped machine, ELIZA, PCR, Tissue culture Insect rearing laboratory was also established
2.	To produce learned, skilled and technically sound human resource for the job market and effective research and development.	Surveys as above	2018-19	Exposure of students in job markets	Field visits to different research station, companies and business research Centers related to plant protection.
3.	To foster and promote agriculture entrepreneurship.	Surveys as above	2018-19	Encouragement and formation of incubation Centre	Students were encouraged to start a new business. Department has offered students incubation rooms for the startup business.

Standard 1-2: The programme must have documented outcomes for graduating students. It must be demonstrated that the outcomes support the programme objectives and that graduating students can perform these outcomes.

Standard 1.2: Objectives vs outcomes

Programs Objective	Programs Outcomes						
	1	2	3	4	5	6	7
1	⊙	⊙	⊙	⊙	⊙	⊙	⊙
2	⊙	o	⊙	⊙	⊙	⊙	o
3	o	o	o	o	⊙	o	o

Legend

- ⊙ denotes substantial contribution to the objective and
- o denotes moderate contribution to the objective.
- • denotes no contribution to the objective

Proforma 1 & 10 Course and Teacher Evaluation

Report submitted to the QEC office.

Proforma 2. Faculty course review report

Report submitted to the QEC office.

Proforma-3. Survey of Graduating Students.

Survey of Graduating students through Questionnaire-session: 2018-19	Score in %
1. The work in the program is adequate and induces a lot of knowledge.	90.56
2. program is effective in enhancing team-working abilities	81.11
3. The program administration is effective in supporting learning	79.80
4. The program is effective in developing analytical and problem-solving skills	82.80
5. The program is effective in developing independent thinking	83.34
6. The program is effective in developing written communication skills	84.86
7. The program is effective in developing planning abilities	86.11
8. The objectives of the program have been fully achieved	84.45
9.Whether the contents of curriculum are advanced and meet program objectives	88.17
10. Faculty was able to meet the program objectives	83.11
11. Environment was conducive for learning	82.22
12. Whether the Infrastructure of the department was good	84.51
13. Whether the program was comprised of Co-curricular and extra-curricular activities	83.78
14. Whether scholarships/ grants were available to students in case of hardship	85.23
15.The Internship experience is effective in enhancing a. Ability to work in teams b. Independent thinking c. Appreciation of ethical Values d. Professional Development e. Time Management Skills f. Judgment	84.82 85.23 86.33 85.22 83.33 86.33 82.53

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Proforma 7 Alumni Survey:

Alumni Survey through questionnaire for Academic year: 2018-19	Score in %
Questions	
I. Knowledge	
1. Math, Science, Humanities, and professional discipline	70.34
2. Problem formulation and solving skills	75.67
3. Collecting and analyzing appropriate data	76.34
4. Ability to link theory to practice.	71.45
5. Ability to design a system component or process	73.22
6. IT Knowledge	90.28
II. Communications Skills	
1. Oral Communication	95.35
2. Report writing	75.67
3. Presentation	93.33
III. Interpersonal Skills	
1. Ability to work in teams.	84.74
2. Ability to work in arduous /challenging situation	80.53
3. Independent thinking	81.58
4. Appreciation of ethical values	81.58
IV. Management/ Leadership Skills	
1. Resource and Time management skills	81.58
2. Judgment	79.47
3. Discipline	84.74
VII. Department Status	
1. Infrastructure	90.33
2. Faculty	85.66
3. Repute at National level	73.11
4. Repute at intonational level	71.43

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Proforma 8 Employer Survey

Employer Survey through questionnaire for Academic year: 2018-19	
Questions	**Score in %**
I. Knowledge	
Math, Science, Humanities, and professional discipline	83.21
Problem formulation and solving skills	80.30
Collecting and analyzing appropriate data	84.51
Ability to link theory to practice.	86.32
Ability to design a system component or process	82.25
Computer Knowledge	
II. Communication Skills	
1. Oral Communication	81.00
2.Report writing	82.31
3. Presentation skills	83.60
Ill. Interpersonal Skills	
1. 1. Ability to work in teams.	83.12
2. Leadership	81.32
3. Independent thinking	81.34
4. Motivation	81.32
5.Reliability	86.71
6.Appreciation	85.20
IV. Management/ Leadership Skills	
1.Time Management Skill	82.21
2.Judgment	86.90
3.Disipline	89.31

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Standard 1-3: The results of Program's assessment and the extent to which they are used to improve the program must be documented.

Strength of the discipline

- New building having proper classrooms, research laboratories and advance equipment.
- The availability of highly qualified faculty.
- Collaborations with provincial and national Agricultural research organizations, PARC, HEJ, KIBJE
- Frequent field trips and visit to different research organization

Weakness of the discipline

1. Computer laboratory
2. No access to internet facility in the department.

Quantitative Assessment of the Department

Standard 1-4: Overall performance using quantifiable measures.

Present Performance Measures for Research Activities till 2019

S. No.	Name of faculty member	Research Papers	Projects Completed
1.	Prof. Dr. Saleem Shahzad	115	05
1.	Dr. Saboohi Raza	31	02
2.	Dr. M. Faheem Akbar	27	02
3.	Dr. Amjad Sultan	09	03
4.	Dr. Shagufta Sehar	01	-
5.	Dr. M. Shahid	18	-

Faculty satisfaction regarding the administrative Services

Administrative meetings (departmental, university, academic council, and syndicates) are attended as and when required.
The department upholds a 4:1 ratio for the academic (technical) and administrative non-technical staff which fulfils the standard set by HEC. Proper records are maintained in this regard

Table No: 5

Degree	Pre-requisites for the degrees in Agriculture (Plant Protection)
BS Agriculture	Academic minimum score of 2.45 CGPA on completion of 144 credits hours in eight semesters
M. Phil Agriculture	Completion of 24 credit hours course work with at least 3 CGPA and 6 credit hours Thesis work
P.h. D. Agriculture	Completion of 18 credit hours course work and 12 credit hours Thesis work

Major Future Improvement Plans

- Establishment of computer lab for students
- 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:

Degree Title: BS/M.Phil/Ph. D

Curriculum design and update is initiated by the faculty members of the discipline after the approval of Board of Studies which comprises of senior faculty members and subject specialists from department and other Universities or research Institutions. It is headed by the Chairperson of the Department of Agriculture. The approved curriculum is then sent to Board of Faculty, headed by the Dean Faculty of Sciences. This Board consists of Chairmen/HODs from all the Departments of the faculty of science, including Director Academics and Director QEC. 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 hour theory lecture and three hours practical work per week. A semester lasts for about 16-18 weeks

Pre-requisites Academic Requirements BS/MS/Ph.D.

A person holding F.Sc. pre-medical/pre-engineering from any recognized institute with at least second division or overall 45 % marks is eligible for application submission. Merit is determined on the basis of intermediate marks. Eligibility criteria for MPhil and PhD is subject based entry test (50% passing marks) followed by an interview before DRC members of the Department. 3 CGPA in the course work is mandatory for research work.

Degree Requirements BS/M.Phil/Ph.D.:

Degrees are awarded after completing the required number of credit hours (courses). Minimum CGPA for obtaining the BS degree is 2.45 and 3.0 for MPhil

Examination Weightage BS/M.Phil/Ph.D.:

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 a make-up 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 prescribed here under:

Credit Hours (2+1)	
Mid-term Examination	20%
Assignments/Surprise test	10%
Final theory examination	50%
Final Practical examination	20%

Credit Hours (3+0)	
Mid-term Examination	20%
Assignments/Surprise test	10%
Final theory examination	70

A student is eligible to sit for the examination if he/she has attended not less than 75% of the classes in theory and practical, separately. The minimum pass marks for each course are 45 % for BS programme.

Degree Plan

The BS Agriculture degree consists of minimum 8 semesters/4 years. A student must study 144 credit hours. Degree is awarded after completing courses/credit hours with at least CGPA 2.45.

List of Courses offered by the Department of Agriculture and Agribusiness Management for specialization in Plant Protection is given at Annexure-1

Standard 2.1: Assessment of the Curriculum of Plant Protection

Courses	**Objectives**		
	1	**2**	**3**
501, 503,509, 511, 607, 609,606, 608,610,632, 701, 703, 801, 802,	O	O	O
505, 507,509, 502, 504, 506,508, 510, 512, 603, 605, 615, 602,606, 608,610,632, 702, 704, 721, 803, 804	o	o	O
501, 503,509, 511, 508, 601, 605, 607, 609, 602, 606, 608, 610,632	o	o	o

Legend

- O denotes substantial contribution to the objective
- o denotes moderate contribution to the objective.
- • denotes no contribution to the objective.

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).

<u>Standard 2.2</u>: Theoretical background, problems analysis and solution design in the program material.

Elements	Course No.	Course Title
Theoretical and Practical Background	AGR-501	Methods and Techniques in Plant Protection
	AGR-503	Principles of Plant Protection
	AGR-505	Pest Ecology
	AGR-507	Introductory Acarology
	AGR-509	Introductory Molecular Plant Pathology
	AGR-511	Pesticides Types, Applications and Hazards Management
	AGR-502	Introduction to Plant Parasitic Nematodes
	AGR-504	Epidemiology & Management of Plant Diseases
	AGR-506	Diseases of Field Crops
	AGR-508	Insect Pests of field crops
	AGR-510	Field Crop Ecology
	AGR-512	Insect Classification
	AGR-601	Plant Quarantine and SPS Methods (3+0)
	AGR-603	Diseases of Fruits, Vegetable and Ornamentals
	AGR-605	Insect Pest of Fruits, Vegetable and Ornamentals
	AGR-607	Post-Harvest Management
	AGR-609	Vertebrate Pest Management
	AGR-615	Post-Harvest Processing and Management
	AGR-602	Integrated Pest Management
	AGR-606	Biotechnology & Molecular Techniques in Plant Protection
	AGR-608	International Agreements and Plant Protection (3+0)
	AGR-610	Pesticide Toxicology
Problem analysis/ Solution Design	AGR-632	Special Problem/Internship (0+6)

Standard 2.3: Credit hours distribution

Elements	Credit hours/ semester	Total credit hours	Theory	practical
BS Agriculture	18	144	~ 90	~ 50

Standard 2.4: Credit hours and HEC requirement

The courses offered by the discipline of Plant Protection 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 must be integrated throughout the program.

S#	Course	I.T Component
01	Pesticide Toxicology	Use of computer software in Plant Protection, data analysis, digital library search.
02	Pest Ecology IPM	Forecasting of epidemics and their modeling; and development of disease warning systems.

Standard 2.7: Enhancing Oral and Written Communication Skills of the students

- Assignments are given to students relevant to course having practical usage which are presented by them orally and submitted as written report. This practice not only increases their knowledge but also enhances their oral and written communication skills.
- A 3 credit hours course "Communication Skills" has also been included in the curriculum.

CRITERION 3: LABORATORIES AND COMPUTER FACILITIES

Laboratory Titles:

1. Molecular Plant Pathology Lab
2. Pest and Disease Research Lab
3. Pesticides Toxicology Lab
4. Biological control Lab
5. Entomology Post Graduate Research Lab
6. Seed Testing Lab
7. Plant Tissues Culture Lab

Location and Area

Old building Department of Agriculture & Agribusiness Management, university of Karachi, Main Campus

Objectives of the Laboratories

Practical exercise and demonstrations to graduate students in their introductory and major courses.

1. Research work for the graduate and post-graduate students.
2. Used for execution of the research/development projects funded by HEC, PSF, PARC, and other national and international agencies/institutions.

Future Need

More spacious and well-equipped laboratories to fulfill the contemporary level of research/education are necessitated for better output.

WELL EQUIPPED CLASSROOMS

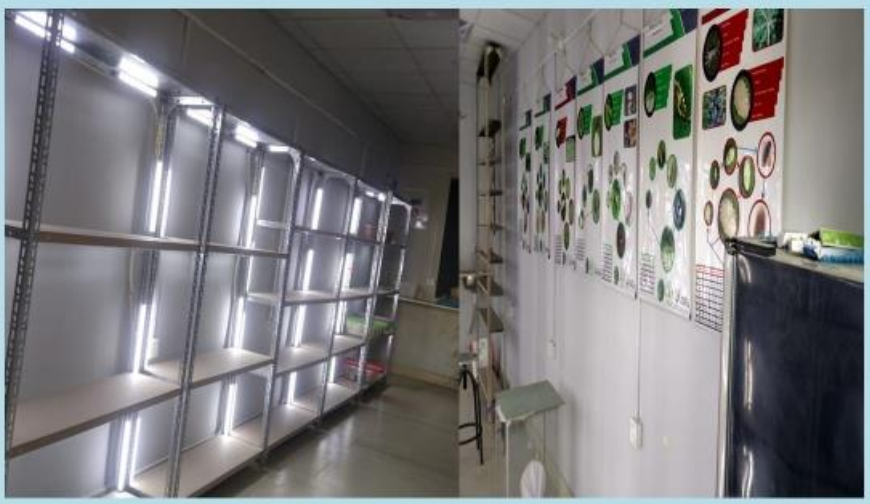
SEMINAR LIBRARY

Molecular Plant Pathology Laboratory

Plant Pathology

Plant Tissue culture lab

Biological control Lab



Standard 3.1: Laboratory manuals / documentation / instructions for experiments

Laboratory manuals for all courses are available and provided to the students in each semester.

Standard 3-2: Support personnel for instruction and maintaining the laboratories.

1.	Muhammad Miraj Uddin	Lab Assistant
2.	Shakir Hussain	Office Assistant
3.	Nooruddin	Lab Assistant
4.	Rizwan Siddiqui	C. C. T.
5.	Muhammad Afzal	Lab Assistant
6.	Masroor Ali	Garden Mistry
7.	Muhammad Shahid	Lab Assistant

Standard 3-3: Computing infrastructure and facilities

Computer facilities:
04 Computers are available for teachers, 02 for the other staff, but none for the students at the department, however a centralized computer lab with > 20 computers in and at LEJ digital lab for the students.

CRITERION 4: STUDENT SUPPORT AND ADVISING

After the recommendation students get financial assistance from various sources like HEC need based scholarship, Karachi University alumni, Musajee & Sons, and other funding agencies.

Standard 4-1: Number and frequency of courses offered for the students.

- Courses are taught as per policy of HEC Plant Protection Revised 2015. Total 48 courses in 4 years and 6 courses in each semester.

Standard 4-2: Courses offered in the major area of study.

- Total 24 courses are taught in last two years including mandatary internships and projects
- 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: Academic advising and guidance on making course decisions and career choices

- Students are advised about the program requirements by the faculty and career counseling by student advisor
- Students are also welcomed to consult their relevant teachers whenever they face any professional problem.

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: Criteria for admission of students in the discipline

Students of BS Agriculture 5th semester choose the discipline of Plant Protection out of the total three available disciplines.

Table No. 6. Admission requirements in the department

Degree	Pre-requisites
BS Agriculture	F.Sc. (Pre-medical/Engineering or equivalent)
M.Phil in Agriculture	At least sixteen years of studies or equivalent qualification with at least second division in the Agriculture. Subjective test /NTS subjective test followed by interview.
Ph.D. in Agriculture	M.Phil., M.Sc. (Hons) or equivalent qualification in the Agriculture from an HEC recognized university/institution. Subjective test /NTS subjective test followed by interview.

Standard 5-2: Student registration/admission procedure.

- The student names, after completion of the admission process, are forwarded to the registrar office and the directorate of admissions for proper registration in the specific program and registration numbers are issued to the students.

Standards 5-3: Faculty recruitment procedure.

- Faculty recruitment procedure/policy may be taken from registrar

Standard 5-4: Process and procedures used for ensuring teaching and delivery of course material to the students for emphasizing active learning.

- 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 to the students.
- Most of the lectures are supplemented by multimedia and other audio-visual aids.
- All-out efforts are made that the courses and knowledge imparted should meet the objectives and outcomes. The progress is regularly reviewed in the faculty meetings.

Standard 5-5: Process for ensuring that the graduates meet the requirements

Examination is conducted as per the academic calendar of the university.
The question papers cover the entire syllabus of the course.

CRITERION 6: FACULTY

Standard 6-1: Full time faculty for the discipline of Plant Protection

S.No.	Name of faculty member	Designation	Qualification	Name of Country Awarding Highest Degree	Date of Birth	Email address
1.	Prof. Dr. Saleem Shahzad	Meritorious Professor	Ph. D.	Pakistan	28-08-1960	sshahzad@uok.edu.pk
2.	Dr. Saboohi Raza	Associate Professor	Ph. D.	Pakistan	03/04/1974	razasaboohi@uok.edu.pk
3.	Dr. M. Faheem Akbar	Assistant Professor	Ph. D.	Pakistan	21/03/1966	faheemakbar@uok.edu.pk
4.	Dr. Amjad Sultan	Assistant Professor	Ph. D.	Pakistan	24/10/1984	amjad.sultan@uok.edu.pk
5.	Dr. Shagufta Sehar	Assistant Professor	Ph. D.	Pakistan	04-01-1988	shagufta.sahar@uok.edu.pk
6.	Dr. M. Shahid	Assistant Professor	Ph.D.	China	10/02/1980	shahid@uok.edu.pk

Table: 8 Faculty Distribution by Program Areas

S. No.	Area of Specialization	Faculty members
1.	Plant Pathology	Prof. Dr. Saleem Shahzad
2.	Agriculture Biotechnology and Molecular Plant Pathology	Dr. Saboohi Raza
3.	Agricultural Entomology	Dr. M. Faheem Akbar
4.	Pest Management & Biological control	Dr. Amjad Sultan
5.	Plant Protection & Agricultural Biotechnology	Dr. Shagufta Sehar
6.	Entomology	Dr. Muhammad Shahid

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.

- Faculty members continuously update their knowledge by communicating the recent developments in their field of specialization through latest books and research publications.
- Training programs offered by different national and international institutes in relevant fields are also attended by the faculty members to enhance their skills.

Standard 6-3: All faculty members should be motivated and have job satisfaction to excel in their profession.

Yes.

CRITERION – 7: INSTITUTIONAL FACILITIES

Standard 7.1: The institutional infrastructure

1. The department has five spacious classrooms.
2. The department well equipped 07 research laboratories.
3. Department has well equipped molecular lab having facility of PCR, ELIZA, SDS-PAGE and Tissue culture facility.

Standard 7.2: Books in the library relevant to the discipline of Plant Protection

The university Central Library has many books and hard copies of latest journals. Department seminar library has more than 1000 books available

Books in Seminar Library	No. of books
Plant protection & Plant pathology	335
Agribusiness Management	448
Agriculture	340

Standard 7.3: Classrooms must be adequately equipped, and offices must be adequate to enable faculty to carry out their responsibilities.

1. Each class is well equipped with multimedia and sound system.
2. Faculty has adequate offices with furniture and fixtures.
3. Teaching labs are equipped with necessary equipment.

CRITERION – 8: INSTITUTIONAL SUPPORT

Standard 8-1: There must be sufficient support and financial resources to attract and retain high quality faculty and provide the means for them to maintain competence as teachers and scholars.

Individual research grants for faculty are available. There is a dire need for increasing the financial resources to be allocated to the department to establish laboratories and a departmental digital library as well.

Standard 8-2: There must be an adequate number of high-quality graduate students, research assistants and Ph.D. students.

1.	BS Agriculture	180 Enrolled 677 passed out
2.	M. Phil. Agriculture (Passed out students)	51 Enrolled 21 Passed out
3.	PhD. Agriculture (Passed out students)	23 Enrolled 10 Passed out

Standard 8-3: Financial resources must be provided to acquire and maintain Library holdings, laboratories, and computing facilities.

Adequate funds are provided annually for the seminar library, no computer lab is available at the department, however, students use LEJ digital library for their studies.

Annexure-1. SCHEME OF STUDY/LIST OF COURSES

Course Title	First Year (First Semester)	Credit hours
AGR-311	Introduction to Agriculture and Agribusiness	3+0
AGR-301	Basic Soil Science	2+1
303	Mechanization in Agriculture	2+1
AGR-305	Field Crop Production	2+1
300.1 FM	Mathematics I	2+1
AGR-300.1 FB	Biology I	2+1
AGR-300.1 E	English	3+0
Course Title	**First Year (Second Semester)**	**Credit hours**
AGR-312	Introduction to Plant Protection	2+1
AGR-302	General Horticulture	2+1
AGR-304	Communication Skills	3+0
AGR-306	Introduction to Food Science & Technology	2+1
300.2 (F.M)	Mathematics-II (Compulsory)	3+0
300.2 (F.B)	Biology - II (Compulsory)	2+1
300.2 (I.S)	Islamic Studies (Compulsory)	3+0
Course Title	**Second Year (Third Semester)**	**Credit hours**
AGR-400.1 PS	Pakistan Studies	3+0
AGR-401	Introductory Plant Entomology	2+1
AGR-403	Economics of Agricultural Production	3+0
AGR-405	Introduction to Crop Physiology and Biochemistry	2+1
AGR-407	Fundamentals of Animal Husbandry	2+1
AGR-409	Basic Agricultural Statistics I	2+1
Course Title	**Second Year (Fourth Semester)**	**Credit hours**
AGR-400.2 (U)	Urdu (Compulsory)	3+0
AGR-400.2 (C.A)	Computer Applications (Compulsory)	2+1
AGR-402	Introduction to Plant Pathology	2+1
AGR-404	Introduction to Plant Breeding & Genetics	2+1
AGR-408	Agricultural Microbiology	2+1
AGR-410	Basic Agricultural Statistics – II	2+1
Course Title	**Third Year (Fifth Semester)**	**Credit hours**
AGR-501	Methods and Techniques in Plant Protection	2+1
AGR-503	Principles of Plant Protection	2+1
AGR-505	Pest Ecology	2+1
AGR-507	Introductory Acarology	2+1
AGR-509	Introductory Molecular Plant Pathology	2+1

AGR-511	Pesticides Types, Applications and Hazards Management	2+1
Course Title	**Third Year (Sixth Semester)**	**Credit hours**
AGR-502	Introduction to Plant Parasitic Nematodes	2+1
AGR-504	Epidemiology & Management of Plant Diseases	2+1
AGR-506	Diseases of Field Crops	2+1
AGR-508	Insect Pests of field crops	2+1
AGR-510	Field Crop Ecology	3+0
AGR-512	Insect Classification	2+1
Course Title	**Fourth Year (Seventh Semester)**	**Credit hours**
AGR-601	Plant Quarantine and SPS Methods	3+0
AGR-603	Diseases of Fruits, Vegetable and Ornamentals	2+1
AGR-605	Insect Pest of Fruits, Vegetable and Ornamentals	2+1
AGR-607	Post-Harvest Management	2+1
AGR-609	Vertebrate Pest Management	2+1
AGR-615	Post-Harvest Processing and Management	2+1
Course Title	**Fourth Year (Eighth Semester)**	**Credit hours**
AGR-602	Integrated Pest Management	2+1
AGR-606	Biotechnology & Molecular Techniques in Plant Protection	2+1
AGR-608	International Agreements and Plant Protection	3+0
AGR-610	Pesticide Toxicology	2+1
AGR-632	Thesis / Internship + Project	0+6
Course Title	**MS (First Semester)**	**Credit hours**
AGR-701	Research Methodology	3+0
AGR-703	Pesticide Resistance Management	2+1
AGR-705	Insect Pathology	2+1
AGR-707	Biochemistry and Physiology of Diseased Plants	2+1
AGR-709	Plant Nematology	2+1
AGR-717	Mycology-I	2+1
Course Title	**MS (Second Semester)**	**Credit hours**
AGR-702	Host Plant Resistance	3+0
AGR-704	Community IPM	3+0
AGR-721	Plant Protection and Environment	2+1
AGR-708	Plant Virology	2+1
AGR-710	Plant Bacteriology	2+1
AGR-712	Fungal Plant Pathology	2+1
AGR-714	Mycology II	2+1