SELF ASSESSMENT REPORT 2009-10
Department of Entomology
B.Sc. (Hons.) Agric.

Program Team

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Introduction

It was 1980, when the Department of Entomology started working with the establishment of Agriculture College, Rawalpindi. The intention to establish this department was to educate the agriculture graduates with crop protection techniques along with production methodology. As the college took off, the department offered minor courses of Entomology for the students of B.Sc. (Hons) agriculture specializing in disciplines other than Entomology. During the year 1986, the department started B.Sc. (Hons.) degree program in Entomology. The department is committed to provide quality education and research in the area of Entomology. The mission of this department is to produce professionally skilled and academically sound entomologists able to identify the future issues related to Entomology and resolve the challenges relating to the insect pests of our field crop, stored commodities, diseases vectors and producing useful products directly and to improve quality of the human life and economy of the country indirectly. Keeping in view its mission and objectives, the department of Entomology periodically reviews its curriculum to meet the challenges and to keep up with the pace of development. The department is always committed to enhance students’ professional training and career opportunities. It arranges field visits and holds national and international seminars on current issues relating to the protection and quality of post-harvest etc. The faculty is actively engaged in a number of research projects some of which are funded by the Higher Education Commission.

The department never compromises on quality. It is committed to promote merit and improve quality of education, teaching and research. The department is always willing to cooperate with the Quality Enhancement Cell of the University as well as to incorporate their recommendations for improving standard of teaching, quality of learning and achievement of its objectives. This report reflects efforts of the department to evaluate its performance for future improvement in collaboration with the QEC. This Self Assessment Report (SAR) is comprises of eight sections. The first section outlines the programme mission and objectives. Section 2 provides information about the curriculum development. Section 3 enlists the laboratories and other relevant information followed by student support and guidance. The last four sections provide information about student support, process control, faculty characteristics and institutional facilities and support provided by the university.

Criterion-1: Programme Mission, Objectives and Outcomes

Insects as one of the most successful group of animals are members of the largest phylum of animal kingdom. They are arthropods and may be differentiated from other arthropods by having three well
defined body regions, head, thorax and abdomen, a single pair of segmented antenna in the head region, the thorax with three pairs of legs in adult insect and generally one or two pairs of wings. Entomology deals with the study of insects. It covers all the fields like harmful insect pests, beneficial insects including biocontrol agents, pollinators, scavengers, honey bee, silkworm and other useful insects. Management of major insect pests of field crop, stored grains, fruit trees, vegetables and ornamentals etc using IPM techniques and safe and judicious use of pesticides is also a key component of entomology. In case of medical discipline, entomology is playing a key role in healing of wounds by application of sterile maggots which are otherwise difficult to heal specially in diabetic patients. Likewise environmental pollution, biodiversity and insect resistance against the pesticides are the burning issues of today which warrant continuous processes of education and research. Basic and applied education to the students at graduate and post-graduate level, in this specialized field, involves the use of modern/advanced teaching methods and innovative analytical techniques for insect pest identification, monitoring, scouting, forecasting and development of pest management techniques. Application of applied knowledge regarding pest management not only reduces enormous losses due to insect pests, lessen pollution hazards and develop a sustainable and substantially profitable production system for the farmers.

**Standard 1-1: The program must have documented measurable objectives that support institution mission statements.**

To produce professionals of strong background and recent technical knowledge to resolve the challenges relating to the insect pests infesting field crop, fruits and vegetables and stored commodities and the beneficial insects to produce valuable products like honey and silk etc thereby helping in development of agricultural and industrial economy, and producing useful products directly and to improve quality of the human life and economy of the country indirectly.

**Main elements of strategic plan to achieve the mission and objectives**

- Strengthening and implementation of a solid teaching system based on the knowledge, expertise and vision gathered from world reviews, literature, innovations, proceedings, symposia etc for the award of degree.
- Scheming and improving the curricula involving core subjects, elective subjects, field demonstrations and internship programs.
- Post-graduate research including special problems, research reports.
- Provocation of linkages with national and international research organizations to solve indigenous problems relating to research.

**PROGRAM OBJECTIVES AND THEIR ASSESSMENT**

The department monitoring system is focused on the lines:

- Student-Teacher interaction
- Students views for program/faculty
- Critical analysis and policy formulation for development of infrastructure
- Policy formulation for faculty training and exposure to current advancement in the field of Entomology through various seminars, national workshops, congresses etc.
- Development of department through the submission of various projects to various funding agencies
- Periodic review of the target achievements at department level

**Table: 1 Program Objectives Assessment**

<table>
<thead>
<tr>
<th>S. #</th>
<th>Objective</th>
<th>How Measured</th>
<th>When Measured</th>
<th>Improvement Identified</th>
<th>Improvement made</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Improvement and intensification of Entomology at AAUR</td>
<td>Getting views of the graduate students Based on identification of insect pests infesting crop plants in the field Suggest management practices for specific pest problems</td>
<td>It is a regular process as per requisite</td>
<td>Establishing an insect pest advisory service at the department Developmet of Techniques of guidelines are required to be improved</td>
<td>For insect pest identification identified specimen are preserved for technical support Techniques regarding research and field practices developed and dissemination to the students and the growers also</td>
</tr>
<tr>
<td>2</td>
<td>To communicate fundamental and practical knowledge to the graduating students</td>
<td>Assessing the previous understanding of students through exams/tests and student response</td>
<td>During the already established regular and periodic exam system by the university</td>
<td>Incorporation of new techniques in entomology course work and accordingly some new subjects are required to be incorporated in the syllabus</td>
<td>Improvement of existing courses as per requisite Communication system is made better by developing the class lectures and using audio visual aids</td>
</tr>
<tr>
<td>3</td>
<td>Supervision of students in internship</td>
<td>Evaluating the students internship project topics, by the concerned committees/evaluators, etc</td>
<td>Existing evaluation procedure, prior to initiate the projects and at the completion of the internship</td>
<td>Strong scrutiny system for topics and prepare reports</td>
<td>Seminars, presentation sessions and class discussions, were organized for communication proficiency improvement</td>
</tr>
<tr>
<td>4</td>
<td>Incorporation of associated fields</td>
<td>Reviewed by concerned departmental or faculty level committees, and councils (academic council)</td>
<td>In the periodic meetings of the concerned bodies</td>
<td>Allied topics/courses are suggested in the light of university/HEC</td>
<td>New development in related fields are incorporated for awareness and exposure regarding the field</td>
</tr>
</tbody>
</table>
Standard 1-2: The program must have documented outcomes for graduating students. It must be documented that the outcomes support the program objectives and that graduating students are capable of performing these outcomes.

**Expected Outcomes of the Programme:**

1. The students must have ability to understand the entomological issues related to pests, their identification and management.

2. The graduates should have a substantial skill to identify the pests and biocontrol agents and its application in devising IPM techniques for sustainable pest solutions.

3. The graduate students must have capability to take up small scale research on some national issue related to entomology which they come across during their course of duty. The students shall gain advanced theoretical and practical knowledge of the subject helping them to advance in their professional life and higher studies.

4. The graduates shall be capable to establish their own enterprises and business using their skills such as silkworm production, honey production, sterile maggot production, mass scale production of predators and parasites.

5. The students shall have potential to contribute in national economy.

Relationship between programme outcomes and objectives are given in table 2.

**Table 2:** Programme outcomes and their relationship with the Programme objectives

<table>
<thead>
<tr>
<th>Objectives</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>2</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>3</td>
<td>++</td>
<td>+++</td>
<td>+</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>4</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>+++</td>
<td>+</td>
</tr>
</tbody>
</table>
Programme Outcome Measurement

So as to evaluate the performance of the most concerned with regard to achievement of the stipulated objectives; information was gathered from the target groups through prescribed proforma provided by the Quality Enhancement Cell of Pir Mehr Ali Shah, Arid Agriculture University, Rawalpindi. The prescribed proformas were filled in by the respective class students, respective faculty members, department alumni, and the graduates (previously passed out from the university) working in different organizations, research institutes, and agriculture departments in different capacities/positions at national level.

PROGRAM ASSESSMENT RESULTS

Teachers’ Evaluation

Regarding the teachers’ performance and their assessment, evaluation was done by the respective students and their comments were gathered on prescribed performa. This evaluation was done for different courses assigned to individual teachers through filling in Proforma 10 (Annexure-IV). During the reporting period there were 7 teachers in the department which are numbered as 1-7. They are, Dr. Muhammad Naeem¹, Mr. Humayun Javed², Dr. Ata ul Mohsin³, Dr. M. Farooq Nasir⁴, Mr. Muir Ahmad⁵, M. Asif Aziz⁶, and Mr. Imran Bodlah⁷. The results showed that the teacher # 1 & 3 were scoring 4.8, teacher 2 & 4 with 3.7, teacher 5 with 4.6 and teacher 6 & 7 with scoring 4.5.
Pie Charts Showing Teacher Evaluation

**Teacher 1** Evaluation results showed very good performance of the teacher. Almost 85 - 100% of the students stated that the teacher has performed well for all the indicators to be evaluated. 14% of the students are found uncertain regarding giving citation about current situation in the country, fairness in exams and integration of theoretical concepts of course with the real world.
The instructor has completed the whole course

- 71% completed
- 29% not completed

The instructor provides additional material apart from the textbook

- 71% provided
- 29% not provided

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

- 57% cited
- 29% not cited
- 14% partially cited
- 0% not applicable

The instructor communicates the subject matter effectively

- 86% communicated effectively
- 14% partially communicated
- 0% not communicated

The instructor shows respect towards students and encourages class participation

- 57% respectful
- 43% partly respectful
- 0% not respectful
- 0% not applicable

The instructor maintains an environment that is conducive to learning

- 71% conducive
- 29% partly conducive
- 0% not conducive
- 0% not applicable

The instructor arrives on time

- 57% on time
- 43% partly on time
- 0% not on time
- 0% not applicable

The instructor leaves on time

- 57% on time
- 43% partly on time
- 0% not on time
- 0% not applicable
Teacher 2  Analyses of the proforma revealed good performance of the teacher on overall basis. Generally all the indicators are categorized as strongly agreed and agreed. 14% of the
students disagree with the integration of the theoretical course with the real world applications.
The instructor arrives on time
100%

The instructor leaves on time
100%

The instructor is fair in examination
86%
14%

The instructor returns the graded script etc in reasonable amount of time
57%
43%

The instructor was available during the specified official hours and for after class consultations
71%
29%

The subject matter presented in the course has increased your knowledge of the subject
43%
57%

The syllabus clearly states course objectives, requirements procedures and grading criteria
43%
57%

The course integrates theoretical course concepts with real-world applications
14%
29%
57%
The assignments and exams covered the materials presented in the course.

The course material is modern and updated.

SA: Strongly Agree  A: Agree  UC: Un-certain  D: Disagree  SD: Strongly Disagree

Teacher 3  The pie charts indicated that overall performance of the teacher was good. Generally all the indicators are categorized as strongly agreed and agreed by all the students.
The instructor gives citations regarding current situations with reference to Pakistani context

71% 29% 0% 0% 0%

SA  A  UC  D  SD

The instructor communicates the subject matter effectively

57% 43% 0% 0% 0%

SA  A  UC  D  SD

The instructor shows respect towards students and encourages class participation

57% 43% 0% 0% 0%

SA  A  UC  D  SD

The instructor maintains an environment that is conducive to learning

86% 14% 0% 0% 0%

SA  A  UC  D  SD

The instructor arrives on time

71% 29% 0% 0% 0%

SA  A  UC  D  SD

The instructor leaves on time

86% 14% 0% 0% 0%

SA  A  UC  D  SD

The instructor is fair in examination

71% 29% 0% 0% 0%

SA  A  UC  D  SD

The instructor returns the graded script etc in reasonable amount of time

71% 29% 0% 0% 0%

SA  A  UC  D  SD
The instructor was available during the specified official hours and for after class consultations. 71% of respondents showed strong agreement, while 29% were neutral or disagreed.

The subject matter presented in the course has increased your knowledge of the subject. 86% of respondents strongly agreed, while 14% were neutral or disagreed.

The syllabus clearly states course objectives, requirements procedures and grading criteria. 57% of respondents strongly agreed, while 43% were neutral or disagreed.

The course integrates theoretical course concepts with real-world applications. 57% of respondents strongly agreed, while 43% were neutral or disagreed.

The assignments and exams covered the materials presented in the course. 57% of respondents strongly agreed, while 43% were neutral or disagreed.

The course material is modern and updated. 71% of respondents strongly agreed, while 29% were neutral or disagreed.

Teacher 4 The data analysis indicated that overall performance of the teacher was good. Almost 70-100% of the respondents were found strongly agreed with the statements. Generally all the indicators are categorized as strongly agreed and agreed by all the students.
The instructor is prepared for each class

95%

5% 0%

The instructor demonstrates knowledge of the subject

86%

14% 0%

The instructor has completed the whole course

82%

18% 0%

The instructor provides additional material apart from the textbook

73%

27% 0%

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

68%

32% 0%

The instructor communicates the subject matter effectively

77%

23% 0%

The instructor shows respect towards students and encourages class participation

82%

18% 0%

The instructor maintains an environment that is conducive to learning

73%

27% 0%
The instructor arrives on time

The instructor leaves on time

The instructor is fair in examination

The instructor returns the graded script etc in reasonable amount of time

The instructor was available during the specified official hours and for after class consultations

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

The syllabus clearly states course objectives, requirements procedures and grading criteria
The assignments and exams covered the materials presented in the course.

The course material is modern and updated.

Teacher 5  The pie charts indicated that overall performance of the teacher was good. However some students (17%) were found uncertain about instructor’s time management in class, integrity of the theoretical course with the real world and course syllabus clearly states objectives, requirements procedure and grading criteria.
The instructor gives citations regarding current situations with reference to Pakistani context

The instructor communicates the subject matter effectively

The instructor shows respect towards students and encourages class participation

The instructor maintains an environment that is conducive to learning

The instructor arrives on time

The instructor leaves on time

The instructor is fair in examination

The instructor returns the graded script etc in reasonable amount of time
The pie charts indicated that overall performance of the instructor was good. Generally all the indicators are categorized as strongly agreed and agreed by all the students.
The instructor is prepared for each class

The instructor demonstrates knowledge of the subject

The instructor has completed the whole course

The instructor provides additional material apart from the textbook

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

The instructor communicates the subject matter effectively

The instructor shows respect towards students and encourages class participation

The instructor maintains an environment that is conducive to learning
The instructor arrives on time
86%
14%
0%
0%
0%
SA A UC D SD

The instructor leaves on time
71%
29%
0%
0%
0%
SA A UC D SD

The instructor is fair in examination
86%
14%
0%
0%
0%
SA A UC D SD

The instructor was available during the specified official hours and for after class consultations
71%
29%
0%
0%
0%
SA A UC D SD

The syllabus clearly states course objectives, requirements procedures and grading criteria
71%
29%
0%
0%
0%
SA A UC D SD

The course integrates theoretical course concepts with real-world applications
71%
29%
0%
0%
0%
SA A UC D SD

The assignments and exams covered the materials presented in the course
71%
29%
0%
0%
0%
SA A UC D SD

The course material is modern and updated
57%
43%
0%
0%
0%
SA A UC D SD
Teacher 7  The data gathered from the respondents revealed that overall performance of the instructor was good. Generally all the indicators are categorized as strongly agreed and agreed by all the students.
The instructor shows respect towards students and encourages class participation

- 71% 29%

SA A UC D SD

The instructor maintains an environment that is conducive to learning

- 100%

SA A UC D SD

The instructor arrives on time

- 71% 29%

SA A UC D SD

The instructor leaves on time

- 86% 14%

SA A UC D SD

The instructor is fair in examination

- 86% 14%

SA A UC D SD

The instructor was available during the specified official hours and for after class consultations

- 100%

SA A UC D SD

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

- 71% 29%

SA A UC D SD
The syllabus clearly states course objectives, requirements procedures and grading criteria

The course integrates theoretical course concepts with real-world applications

The assignments and exams covered the materials presented in the course

The course material is modern and updated

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SA: Strongly Agree               A: Agree               UC: Uncertain      D: Disagree               SD: Strongly Disagree

**Students Course Evaluation**

Courses taught by all the teachers at department level were also evaluated the concerned students. The course of the individual teachers was evaluated on the basis of information gathered from Proforma 1 (Annexure-III). There were 7 teachers numbered as 1-7 for evaluation purpose; they are, Dr. Muhammad Naeem¹, Mr. Humayun Javed², Dr. Ata ul Mohsin³, Dr. Farooq Nasir⁴ Mr. Munir Ahmad⁵, Mr. Asif Aziz⁶, and Mr. Imran Bodlah⁷. The performance level for each course is depicted in figure as shown below. Evaluation of courses alongwith their scores as done by the students are given as under.
The course workload was manageable
57%
43%
0%
0%
0%
SA A UC D SD

The course objectives were clear
71%
29%
0%
0%
0%
SA A UC D SD

Figure: The performance level for each Entomology course

Pie Charts Showing Student Course Evaluation

Course ENT 506 (Teacher 1)
Majority of the students were found agreed with the statement that course work was manageable, objectives were clear, and the course was well organized. 14% were found disagreed with appropriate level of attendance, 14% were uncertain about the relevancy of books recommended. 14% disagreed with adequacy of the learning material on web. Additionally 14% of the students were disagreed with the help percent of the students were not certain about their appropriate attendance level. 3 % of the students were disagreed with the statement that ideas and concepts in the course are presented clearly and they understand what is presented in class.
The course was well organized

Approximate level of your attendance during the whole course

I participated actively in the course

I think I have made progress in this course

I think that the course was well structured to achieve the learning outcomes

The learning and teaching methods encouraged participation

The overall environment in the class was conducive to learning

Classroom was satisfactory
Leaning materials were relevant and useful

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

The course stimulated my interest and thought on the subject area

Ideas and concepts were presented clearly

Recommended reading books etc were relevant and appropriate

The provision of learning resources on the web was adequate and appropriate

The pace of the course was appropriate

The methods of assessment were reasonable
Feedback on assessment was timely

- 86%
- 14%

- SA
- A
- UC
- D
- SD

Feedback on assessment was helpful

- 71%
- 29%
- 0%

- SA
- A
- UC
- D
- SD

I understand the lectures

- 71%
- 29%
- 0%

- SA
- A
- UC
- D
- SD

The material was well organized and presented

- 57%
- 43%
- 0%

- SA
- A
- UC
- D
- SD

The instructor was responsive to students needs and problems

- 57%
- 43%
- 0%

- SA
- A
- UC
- D
- SD

Had the instructor been regular throughout the course?

- 57%
- 29%
- 14%

- SA
- A
- UC
- D
- SD

The material in the tutorials was useful

- 57%
- 29%
- 14%

- SA
- A
- UC
- D
- SD

I was happy with the amount of work needed for tutorials

- 43%
- 43%
- 14%

- SA
- A
- UC
- D
- SD
Course ENT 607  (Teacher 2)
A big majority of the respondents strongly agreed with the statement that course objectives were clear, course work was manageable and the course was well organized. Participation of the students was adequate. 14% of the students were uncertain about the appropriate level of attendance in class. Almost 70% reported that they understand lectures and feedback on assessment was given timely.
The course was well organized

Approximate level of your attendance during the whole course

I participated actively in the course

I think I have made progress in this course

I think that the course was well structured to achieve the learning outcomes

The learning and teaching methods encouraged participation

The overall environment in the class was conducive to learning

Classroom was satisfactory
Leaning materials were relevant and useful

Recommended reading books etc were relevant and appropriate

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

The provision of learning resources on the web was adequate and appropriate

The course stimulated my interest and thought on the subject area

The pace of the course was appropriate

Ideas and concepts were presented clearly

The methods of assessment were reasonable
Feedback on assessment was timely
86%
14%
0%
0%
0%
SA A UC D SD

Feedback on assessment was helpful
86%
14%
0%
0%
0%
SA A UC D SD

I understand the lectures
86%
14%
0%
0%
0%
SA A UC D SD

The material was well organized and presented
57%
43%
0%
0%
0%
SA A UC D SD

The instructor was responsive to students needs and problems
86%
14%
0%
0%
0%
SA A UC D SD

Had the instructor been regular throughout the course?
43%
57%
0%
0%
0%
SA A UC D SD

The material in the tutorials was useful
57%
43%
0%
0%
0%
SA A UC D SD

I was happy with the amount of work needed for tutorials
57%
43%
0%
0%
0%
SA A UC D SD
Course ENT 508  (Teacher 3)

In majority of the cases (asked statements), almost 65-70 percent of the respondents were found agreed. They were agreed with the statement that course objectives were clear, course load was manageable and they understand lectures fully and feedback was given properly for the assessments. About 14 % of the students uncertain about their appropriate attendance level in the class. A few students expressed their view as uncertain. Detail is given as below given pie charts.
The course was well organized

Approximate level of your attendance during the whole course

I participated actively in the course

I think I have made progress in this course

I think that the course was well structured to achieve the learning outcomes

The learning and teaching methods encouraged participation

The overall environment in the class was conducive to learning

Classroom was satisfactory
Leaning materials were relevant and useful

Recommended reading books etc were relevant and appropriate

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

The provision of learning resources on the web was adequate and appropriate

The course stimulated my interest and thought on the subject area

The pace of the course was appropriate

Ideas and concepts were presented clearly

The methods of assessment were reasonable
Feedback on assessment was timely

Feedback on assessment was helpful

I understand the lectures

The material was well organized and presented

The instructor was responsive to students needs and problems

Had the instructor been regular throughout the course?

The material in the tutorials was useful

I was happy with the amount of work needed for tutorials
The tutor dealt effectively with my problems

- 86% agreed
- 14% neutral
- 0% disagreed

The material in the practicals was useful

- 71% agreed
- 29% neutral
- 0% disagreed

The demonstrators dealt effectively with my problems

- 71% agreed
- 29% neutral
- 0% disagreed

Course ENT 507 (Teacher 4)

Majority of the responding students were found agreed with the statement that course objectives were clear, course was well structured and they have made progress. 5 % were found uncertain about the approximate level of attendance. According to 5 % of the students classrooms were not satisfactory and 5% percent showed their uncertainty about the provision of learning resources in library were adequate.
The course was well organized
77%

Approximate level of your attendance during the whole course
72%

I participated actively in the course
86%

I think I have made progress in this course
86%

I think that the course was well structured to achieve the learning outcomes
95%

The learning and teaching methods encouraged participation
77%

The overall environment in the class was conducive to learning
86%

Classroom was satisfactory
77%
<table>
<thead>
<tr>
<th>Topic</th>
<th>Percentage</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning materials were relevant and useful</td>
<td>91%</td>
<td></td>
</tr>
<tr>
<td>Recommended reading books etc were relevant and appropriate</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>The provision of learning resources in the library was adequate and appropriate</td>
<td>81%</td>
<td></td>
</tr>
<tr>
<td>The provision of learning resources on the web was adequate and appropriate</td>
<td>68%</td>
<td></td>
</tr>
<tr>
<td>The course stimulated my interest and thought on the subject area</td>
<td>82%</td>
<td></td>
</tr>
<tr>
<td>The pace of the course was appropriate</td>
<td>59%</td>
<td></td>
</tr>
<tr>
<td>Ideas and concepts were presented clearly</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>The methods of assessment were reasonable</td>
<td>82%</td>
<td></td>
</tr>
</tbody>
</table>
Feedback on assessment was timely
68%
32%
0%
0%
0%

Feedback on assessment was helpful
68%
32%
0%
0%
0%

I understand the lectures
91%
9%
0%
0%
0%

The material was well organized and presented
59%
41%
0%
0%
0%

The instructor was responsive to students needs and problems
64%
36%
0%
0%
0%

Had the instructor been regular throughout the course?
82%
18%
0%
0%
0%

The material in the tutorials was useful
86%
14%
0%
0%
0%

I was happy with the amount of work needed for tutorials
55%
45%
0%
0%
0%
Course ENT 603  (Teacher 5)

About 60 – 90% of the students were agreed with the statement that course objectives were clear, course load was manageable and the course was well organized. They were fully agreed with the statement that course was well structured and they understood well. 17% were uncertain about their active participation in the course. 14% were uncertain about relevancy of recommended books and 17% showed their uncertainty about the provision of learning resources in library were adequate.
The course was well organized

Approximate level of your attendance during the whole course

I participated actively in the course

I think I have made progress in this course

I think that the course was well structured to achieve the learning outcomes
The learning and teaching methods encouraged participation
- Excellent: 67%
- Good: 33%
- Fair: 0%
- Poor: 0%
- Bad: 0%

The overall environment in the class was conducive to learning
- Excellent: 100%
- Good: 0%
- Fair: 0%
- Poor: 0%
- Bad: 0%

Classroom was satisfactory
- Excellent: 83%
- Good: 17%
- Fair: 0%
- Poor: 0%
- Bad: 0%

Leaning materials were relevant and useful
- Excellent: 83%
- Good: 17%
- Fair: 0%
- Poor: 0%
- Bad: 0%

Recommended reading books etc were relevant and appropriate
- Excellent: 43%
- Good: 43%
- Fair: 14%
- Poor: 0%
- Bad: 0%

The provision of learning resources in the library was adequate and appropriate
- Excellent: 83%
- Good: 0%
- Fair: 17%
- Poor: 0%
- Bad: 0%

The provision of learning resources on the web was adequate and appropriate
- Excellent: 50%
- Good: 50%
- Fair: 0%
- Poor: 0%
- Bad: 0%

The course stimulated my interest and thought on the subject area
- Excellent: 83%
- Good: 17%
- Fair: 0%
- Poor: 0%
- Bad: 0%
The pace of the course was appropriate

33%
67%

Ideas and concepts were presented clearly

33%
67%

The methods of assessment were reasonable

33%
67%

Feedback on assessment was timely

100%

Feedback on assessment was helpful

83%
17%

I understand the lectures

67%

The material was well organized and presented

67%
33%

The instructor was responsive to students needs and problems

100%
Course ENT-502 (Teacher 6)

A big majority of the students were found agreed with the statement that course objectives were clear, course work was manageable and the course was well structured and well organized. They were agreed with the impact of the course from the point view of increase in knowledge. A majority of the student
disagreed with appropriate attendance level and 14% were found disagree with provision of learning resources on the web are adequate and appropriate.
The overall environment in the class was conducive to learning.

Classroom was satisfactory.

Learning materials were relevant and useful.

Recommended reading books etc were relevant and appropriate.

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

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

The course stimulated my interest and thought on the subject area.

The pace of the course was appropriate.
Ideas and concepts were presented clearly
- 71% agreed
- 29% disagreed
- 0% neutral
- 0% do not know

The methods of assessment were reasonable
- 71% agreed
- 29% disagreed
- 0% neutral
- 0% do not know

Feedback on assessment was timely
- 43% agreed
- 57% disagreed
- 0% neutral
- 0% do not know

Feedback on assessment was helpful
- 29% agreed
- 71% disagreed
- 0% neutral
- 0% do not know

I understand the lectures
- 86% agreed
- 14% disagreed
- 0% neutral
- 0% do not know

The material was well organized and presented
- 86% agreed
- 14% disagreed
- 0% neutral
- 0% do not know

The instructor was responsive to students needs and problems
- 71% agreed
- 29% disagreed
- 0% neutral
- 0% do not know

Had the instructor been regular throughout the course?
- 71% agreed
- 29% disagreed
- 0% neutral
- 0% do not know
Course ENT-504 (Teacher 7)

Almost 50-100% of the students were found agreed with the statement that course objectives were clear, and the course was well structured and well organized. 14 percent of the students were uncertain that the course load was manageable. About 70% were disagreed with the statement that attendance was up to appropriate level during the whole course.
The course objectives were clear

The course workload was manageable

The course was well organized

Approximate level of your attendance during the whole course

I participated actively in the course

I think I have made progress in this course

I think that the course was well structured to achieve the learning outcomes

The learning and teaching methods encouraged participation
The overall environment in the class was conducive to learning.

Classroom was satisfactory.

Learning materials were relevant and useful.

Recommended reading books etc were relevant and appropriate.

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

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

The course stimulated my interest and thought on the subject area.

The pace of the course was appropriate.
Ideas and concepts were presented clearly

- 71% agree
- 29% disagree

The methods of assessment were reasonable

- 86% agree
- 14% disagree

Feedback on assessment was timely

- 57% agree
- 43% disagree

Feedback on assessment was helpful

- 86% agree
- 14% disagree

I understand the lectures

- 86% agree
- 14% disagree

The material was well organized and presented

- 86% agree
- 14% disagree

The instructor was responsive to students needs and problems

- 71% agree
- 29% disagree

Had the instructor been regular throughout the course?

- 86% agree
- 14% disagree
FACULTY COURSE REVIEW REPORT

In total seven courses were taught during the reported period (Proforma-2). A total of 21-39 students got registered in these courses; among these 9.5-47% scored A grade, 34.78-86 % scored B grade and 4.8-33% scored C grade. The courses were found very much appropriate and in line with the curriculum and intended objectives.
ALUMINI SURVEY

The alumni survey was conducted through gathering information using Proforma # 7 (Annexure-I). The feedback of five graduate students was obtained through Alumni survey. The results of this assessment are given in the form of the following pie graphs. The information gathered from these respondents revealed that indicators like knowledge, communication skills, interpersonal skills, leadership skills, and Departmental status are mostly labeled with excellent, very good, and good categories. In case of interpersonal skills and departmental status there observed 4% and 18 percent share, respectively.

Skills and Capabilities enhanced as an Entomologist.
The graduates of this department developed their ability to apply knowledge of Entomology and specifically pest management to work as a skilled and successful professional in research, extension and development fields. While studying, students learn advanced theoretical and practical knowledge about the subject, build confidence, experience and skills to handle problems relating to their field of specialization independently. Meanwhile they are also trained to work efficiently as a member of a team.

**SURVEY OF GRADUATING STUDENTS**

The survey regarding graduate students’ was conducted associated with around 18 graduate students using proforma # 3 (Annexure-II). The programme assessment results are given in the following graphical format. It is evident from the graphical data that majority of the students reported about their satisfaction with the programme. However, a few students were dissatisfied with the environment, contents of the curriculum and team work abilities. A segment of the respondents also expressed dissatisfaction with regard to development of analytical and problem solving skills, program’s support in learning process, development of written communication skills, achievement of objectives and effective in developing planning abilities.
The Program is effective in developing independent thinking

- Very satisfied: 0%
- Satisfied: 19%
- Uncertain: 0%
- Dissatisfied: 0%
- Very dissatisfied: 81%

The Program is effective in developing written communication skills

- Very satisfied: 18%
- Satisfied: 10%
- Uncertain: 0%
- Dissatisfied: 0%
- Very dissatisfied: 72%

The work in Programme is too heavy and induce a lot of pressure

- Very satisfied: 17%
- Satisfied: 83%
- Uncertain: 0%
- Dissatisfied: 0%
- Very dissatisfied: 0%

The program administration is effective in supporting learning

- Very satisfied: 10%
- Satisfied: 12%
- Uncertain: 0%
- Dissatisfied: 0%
- Very dissatisfied: 60%

The Program is effective in developing planning abilities

- Very satisfied: 24%
- Satisfied: 0%
- Uncertain: 0%
- Dissatisfied: 0%
- Very dissatisfied: 10%

The objectives of the program have been fully achieved

- Very satisfied: 12%
- Satisfied: 64%
- Uncertain: 0%
- Dissatisfied: 0%
- Very dissatisfied: 24%

Whether the contents of curriculum are advanced and meet program objectives

- Very satisfied: 15%
- Satisfied: 8%
- Uncertain: 0%
- Dissatisfied: 22%
- Very dissatisfied: 63%

Faculty was able to meet the program objectives

- Very satisfied: 0%
- Satisfied: 0%
- Uncertain: 0%
- Dissatisfied: 0%
- Very dissatisfied: 19%
Internship Experience:

Feed back regarding internships of the students was very encouraging. The respondents reported that this activity was found helpful in improving the ability to work in teams, discipline, professional development, time management skills and appreciation of esthetic values. Arround 58% students expressed their satisfaction considering all the parameter as represented in the figure given below. 26% expressed their views as very satisfied while 12% were uncertain about it. Only 4% were expressing dissatisfaction about the above mentioned indicators.

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 Department
Entomology department has a regular activity regarding inhouse accountability or review of the previous semester to discuss achievements, performance, attitude and regularity of the students. The main strength of the department is the urge and desire to promote the entomological knowledge and research to solve the field problems relating to crop pests, systematics, pesticide resistance, food security and economic entomology. At present three of the senior faculty members are foreign qualified Ph.Ds, one local Ph. D whereas three junior faculty members are doing Ph.D. abroad. It is hoped that on their return the department will be capable to achieve the targets of success in research and teaching methodologies. So far as equipment and laboratories are concerned; through HEC funded project entitled” Strengthening of Entomology Department” procurement of required equipment and upgradation of laboratories is being done which would be a big support in upgradation of both educational and research activities at the department.

**Weakness Identified In the Program**

The department is facing acute shortage of:

- Lack of Electron microscope, Microtome, Growth chambers and equipment related to molecular techniques etc.
- With the increase in students’ registration a severe dearth of space (class rooms) is being felt.

**Standard 1-4: The department must assess its overall performance periodically using quantifiable measures**

**Present Performance Measures for Research Activities**

**Table 3 Research Performance of the Faculty**

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Journal Publications (National &amp; International)</th>
<th>Conference Publications (Proceedings Abstract)</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Muhammad Aslam</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Dr. Muhammad Naeem</td>
<td>5</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Mr. Humayun Javed</td>
<td>4</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Dr. Ata-ul-Mohsin</td>
<td>7</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Mr. Mobushir Riaz Khan</td>
<td>Abroad for PhD studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Javaid Iqbal</td>
<td>-</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Dr. Munir Ahmed</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Dr. Asif Aziz</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mr. Imran Bodlah</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dr. Muhammad Farooq Nasir</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mr. Muhammad Tariq</td>
<td>Abroad for PhD studies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The department is under staffed and need more Ph.Ds to be inducted.
Faculty with Excellent Research Award

- PEF 8th National Education Award, 2002.
- Quid-i-Azam Gold Medal, 2004

*(Prof. Dr. Muhammad Aslam, Chairman Entomology Department was honored with these awards).*

Community Services by the Department

- Participated in “Kisan Mela” organized by PMAS-Arid Agriculturer Univeristy Rawalpindi at Koont Farm near Chakwal.
- Pest identification service for the visiting farmers and recommendation of pest management methodology

Faculty Satisfaction Regarding the Administrative Services

- Department regularly participate/attend all periodical/scheduled meetings including departmental, university, academic council, and syndicate).
- Corresponding to the HEC standards Entomology Department maintains a ratio of 8:3 for the academic (technical) and administrative (non-technical) staff.
- All sorts of records/inventories pertaining to personnel, students, results or thesis etc have been maintained in a regular and proper way.
- A good level of regularity has been maintained in quick office disposal; so far no complaint has been lodged from any quarter in this regard.
- Regular Review meeting at the end of semester has become a usual feature of the department.

Major Future Improvement Plans

Keeping under consideration the previous evaluation / monitoring activity, the following improvements will be in future related with the programme.

1. Course contents will be revised time by time with updated knowledge in order to meet international standards of education.
2. Practicals will be supported with field trips, seminars, and visits of various national organizations and research organizations related with Entomology.
3. Graduating students will be involved in various research projects in the department in order to make them scientific minded at graduate level.
4. Establishment of separate graduate laboratories equipped with all high-tech instruments required for various courses of B.Sc (Hons.)

<table>
<thead>
<tr>
<th>Sr.#</th>
<th>Particular</th>
<th>No.</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Undergraduates B.Sc. (Hons.) produced</td>
<td>7</td>
<td>85% of them joined M.Sc, 15% got employment</td>
</tr>
<tr>
<td>ii</td>
<td>M.Sc. (Hons.) degree awarded</td>
<td>18</td>
<td>One got scholar Scholarship for PhD in Germany. A few of the students got employment, currently holding various positions</td>
</tr>
<tr>
<td>iii</td>
<td>Ph.D. produced</td>
<td>1</td>
<td>In employment</td>
</tr>
<tr>
<td>iv</td>
<td>Post-Doc fellowship</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>v</td>
<td>Ph.D. Scholarship for faculty</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>vi</td>
<td>Students: Faculty ratio</td>
<td>35:1</td>
<td>Fulfils HEC criteria</td>
</tr>
<tr>
<td>vii</td>
<td>Technical: Non Technical ratio</td>
<td>8:3</td>
<td>Fulfils HEC criteria</td>
</tr>
<tr>
<td>viii</td>
<td>Average grade point</td>
<td>Around 3</td>
<td>Fulfils HEC criteria</td>
</tr>
</tbody>
</table>

The periodic assessment of the departmental activities exhibited high efficiency of system and adequate impact of outcomes. Two students have got admission in PhD (one inland and the other abroad) and most of them (graduates and post graduates) got jobs in various organizations (Federal & provincial departments, universities, research organizations, banks NGOs, pesticide companies etc.).
Degree
B.Sc. (Hons) Agric. Entomology
M.Sc. (Hons) Agric. Entomology
Ph.D. Entomology

Pre-requisites
F.Sc. Pre-medical and Pre-engineering, after entry test
B.Sc. (Hons) Agric. with Entomology as major subject, entry test
M.Sc. (Hons) Agric. in Entomology, Entry test, Interview

Employer Survey:

Information gathered from different organizations helped in conducting employer survey for the determination of student skills. This activity was conducted using proforma 8 (Annexure 8). Survey shows that students graduating from Entomology Department fall above average in all areas under study. An improvement needed in communication skills and interpersonal will be improved during future.

![Employer Survey Bar Chart]

**Figure: Results of employer survey**

A majority of the employers were found contented with knowledge and potential of the students in handling entomological problems independently and as a team member. Performance of our students was appreciated by the employers. Some employers suggested that students should be given opportunity to take up courses on communication and motivational skills before they are awarded degrees. Besides some suggested for improvement of managerial skills of the students by incorporating courses in their curricula.
Pie figures shows the overall results of employer survey as assessed during the reporting period. More than 80-85% graduates were considered to be excellent/very good in knowledge and communication skills. The study also shows that there is segment of students which yet needs improvement in interpersonal and work skills.
CRITERION 2: CURRICULUM DESIGN AND ORGANIZATION

**Degree Title:** B.Sc (Hons) Agriculture, Majoring Entomology

**Intent:** All the courses for degree program were developed by a committee constituted by the Higher Education Commission, Pakistan. The committee consists of experts and learned professors, subject matter specialists from the Universities and research organization from Pakistan. When and if needed, curriculum for the Department of Entomology is revised/updated through different bodies. At department level Board of Studies, which is comprised of senior faculty members, is responsible for updating the curriculum. This body is authorised to formulate syllabus and course content. The chairman of the Department is the convener of this body. The courses are then sent to the Board of Faculty for approval. The Dean of the Faculty, who is also the Convener, conducts the meeting. As per University Rules, after the approval of courses from the Faculty Board, these are placed before the University Academic Council for their approval. Final approval of all the courses is accorded by the University Syndicate for implementation.

**Definition of Credit Hour**
A student must complete a definite number of credit hours. One credit hour is one theory lecture or two hours laboratory (practical)/week. One credit hour carries 20 marks. Duration of a semester is 18 Weeks.

**DEGREE PLAN**
Presently three degree programs are organized by the department

**B.Sc. (Hons.) Agric. Majoring in Entomology:** The B.Sc. (Hons) degree programme consists of 4 academic years/8 semesters. As a whole a student has to study 52 credit hours of theory of the total 155 credit hours. out of this, 10% marks are assigned for evaluation through assignments, test and exercises by the concerned teacher and the remaining 90% marks from the theory part has been assigned for Mid and Final examinations as per University examination rules. In total B.Sc. (Hons.) Entomology degree requirement is 211 credit hours (101 theory + 110 practical) including 30 credit hours for internship. Degrees are awarded after completing the required number of credit hours (courses) following by internship report and its presentation.

- **Curriculum course requirements for B.Sc. (Hons) Entomology degree is summarized below**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits (L-T-P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ent-401</td>
<td>Introductory Entomology</td>
<td>2(1-2)</td>
</tr>
<tr>
<td>Ent-402</td>
<td>Applied Entomology</td>
<td>3(2-2)</td>
</tr>
<tr>
<td>Ent-501</td>
<td>Insect Morphology</td>
<td>3(2-2)</td>
</tr>
<tr>
<td>Ent-502</td>
<td>Insect Physiology</td>
<td>3(2-2)</td>
</tr>
<tr>
<td>Ent-503</td>
<td>Principales of Insect Taxonomy</td>
<td>3(2-2)</td>
</tr>
<tr>
<td>Ent-504</td>
<td>Insect Biodiversity and Evolution</td>
<td>3(2-4)</td>
</tr>
<tr>
<td>Ent-505</td>
<td>Insect Ecology and Behaviour</td>
<td>3(2-2)</td>
</tr>
<tr>
<td>Ent-506</td>
<td>Agricultural Pests and Their Management</td>
<td>3(2-2)</td>
</tr>
<tr>
<td>Ent-507</td>
<td>Insect Pests of Household, Man and Animals</td>
<td>3(2-2)</td>
</tr>
<tr>
<td>Ent-508</td>
<td>Stored Products Pests and Their Management</td>
<td>3(2-2)</td>
</tr>
<tr>
<td>Ent-509</td>
<td>Beneficial Insects</td>
<td>3(2-2)</td>
</tr>
<tr>
<td>Ent-601</td>
<td>Pest Forecasting and Management</td>
<td>4(2-4)</td>
</tr>
<tr>
<td>Ent-602</td>
<td>Internship</td>
<td>20(0-40)</td>
</tr>
<tr>
<td>Ent-603</td>
<td>Insect Ecology and Behaviour</td>
<td>4(3-2)</td>
</tr>
<tr>
<td>Ent-605</td>
<td>Insecticides and Their Application</td>
<td>3(2-2)</td>
</tr>
<tr>
<td>Ent-607</td>
<td>Range and Forest Entomology</td>
<td>3(2-2)</td>
</tr>
<tr>
<td>Ent-609</td>
<td>Project Planning and Scientific Writing</td>
<td>2(1-2)</td>
</tr>
<tr>
<td>Ent-611</td>
<td>Agriculture &amp; Environmental Pollution</td>
<td>3(3-0)</td>
</tr>
</tbody>
</table>

**Standard 2-1:** The curriculum must be consistent and support the program’s documented objectives.

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

| Table 5 | Courses Taught during the semester Versus Outcome |
### Table 6: Programme Courses corresponding to theoretical background and problem analysis.

<table>
<thead>
<tr>
<th>Elements</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theoretical backgrounds</strong></td>
<td>Ent-401, Ent-402, Ent-607, Ent-601, Ent-602, Ent-603, Ent-501</td>
</tr>
</tbody>
</table>

*All these courses were offered during the semester (reporting period).*

**Standard 2-6:** Information Technology Component of the Curriculum Must Be Integrated Throughout The Program:

While the curriculum was prepared, all aspects of information technology were considered and after a critical analysis, relevant aspects were integrated into the program as:

- 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.
- Three computer and I.T. courses (6 credit hours) and two courses of statistics (6 credit hours) based on computer practical usage were included in the curriculum to fulfill the I.T. requirements for the students of B.Sc. (Hons) Agric. degree
- Computer and I.T. courses (3 credit hours) have been integrated in the curriculum of M.Sc (Hons) and Ph.D students which fulfill the requirements of I.T.

**Standard- 2.7:** Oral and written communication skills of the student must be developed and applied in the program.

- At graduate level, delivering of presentations on various topics related with course have been made compulsory for each student.
- Students of BSc (Hons) Agriculture are assigned presentations and group works during different courses which are presented in the class to develop and enhance their written and oral communication and motivation skills.

**CRITERION 3: LABORATORIES AND COMPUTER FACILITIES**

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

- **Laboratory Title:**
  - Biosystematics laboratory
  - Biocontrol laboratory
  - Insect Toxicology Laboratory
  - Stored grain insect laboratory
  - Apiculture laboratory
- **Location and Area:** Faculty of Crop and Food Sciences, A-Block, 2nd Floor, Main Campus
- **Objectives:** Laboratories are used for:
  - Practicle exercise and demonstrations to graduate students in their introductory and major courses.
  - Research work for the graduate and post-graduate students
  - 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.
Standard-3.1: Laboratory manuals/documentation/instructions for experiments must be available and easily accessible to faculty and students

Laboratory manuals are not available. Presently the department library has all the relevant books. Though laboratories are not specious but serving the purpose at limited level. The equipments being procured and replaced as per availability of funds. Equipments regarding molecular approaches are lacking e.g. centrifuge (slow and ultr), PAG-Electrophoresis apparition, PCR Spectrophotometer, relevant software, and some biochemicals.

Standard-3.2: There must be support personal for instruction and maintaining the laboratories.

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

Standard-3.3: The University computing infrastructure and facilities must be adequate to support program’s objectives.

- To upgrade the prevailing education facilities, separate class rooms are needed as presently classes (lectures) are taken in laboratories.
- Space limitation is a major constraint as department could not initiated some of the major subjects like sericulture, host plant resistance and insect vectors’ research activities.
  - **Computing facilities support:** Available to a limited number of faculty members and the post graduate students.
  - **Shortcoming in computing infrastructure:** Computers with internet facilities should be available to all faculty members and postgraduate students.
  - **Safety Arrangements:** There is no proper safety arrangements and no security plan are in place in case of emergency. The department is located on the 2nd floor, there is no emergency exits for the labs.
CRITERION 4: STUDENT SUPPORT AND ADVISING

To resolve students’ issues regarding provision of guidance and information in various social and educational matters, Directorate of Students Affairs provides an effective support. University organizes various cultural activities and study tours/visits to broaden the students knowledge and experience to be utilized in their practical life.

Standard-4.1: Courses must be offered with sufficient frequency and number for students to complete the program in a timely manner

- Corresponding to the HEC guidelines and Academic Council’s recommendations regarding schemes of study, all the courses are offered accordingly at graduate level. Though at Masters level all the courses are offered as per the above mentioned approvals/guidelines of the authorities but depend upon the availability of teachers and facilities.
- All the courses (number and type) are taught as per the HEC criterion/standard.
- To meet the human resource needs in public and private sector at national level, the post-graduate level courses are tailored accordingly.

Standard-4.2: Courses in the major area of study must be structured to ensure effective interaction between students, faculty and teaching assistants.
All of the courses are designed / tailored to address the teaching needs in an effective way. In this regard teaching staff and students are consulted periodically to get the feedback for further improvement. Along with theoretical aspects of the courses, practical work is also done in field/laboratories while students are also oriented to tackle their professional needs through different assignments and submission of reports. They are coupled with various institutions/organization to get updated knowledge and insight addressing their future needs.

In this regard

- Keeping in view the feedback from students and teachers, courses are structured and updated in the board of study meeting.
- It is common and general practice to maintain an effective interaction between students and faculty and inter and intra classes of the students.

**Standard-4.3: Guidance on how to complete the program must be available to all students and access to qualified advising must be available to make course decisions and career choices.**

Students are guided properly in relation to their on-going educational programs at university and also focusing their future needs.

- Entomology department has developed full hormony among the faculty members and students especially the post-graduate ones. Management has made all sorts of efforts to update their knowledge and information source.
- Students are informed about the program requirement through the office of the head of the department.
- Their information records related to their studies are regularly updated through teacher – student interaction.
- Directorate of Placement Bureau also helps in communicating and exploring jobs for the university students.
CRITERION 5: PROCESS CONTROL

It includes student admission, students’ registration, faculty recruitment activities which are dealt by various statutory bodies and the university administration.

Standard-5.1: The process by which students are admitted to the program must be based on quantitative and qualitative criteria and clearly documented. This process must be periodically evaluated to ensure that it is meeting its objectives.

- A well established admission system works at university/department level. This is followed as per the rules and regulations set by the university. Admissions for different degree courses are properly advertised in the news papers having national level circulation.
- Admission criteria for different degree courses are described in definite terms by the university and admission system is based upon the recommendations of supervisory committee.
- Prior to the admission process, criterion for admission is revised every year as a regular process.

Standard-5.2: The process by which students are registered in the program and monitoring of students progress to ensure timely completion of the program must be documented. This process must be periodically evaluated to ensure that it is meeting its objectives
• Registration of students is done once in a degree course but evaluation is done a number of times through different examination stages. Successful completion of one semester ensures the promotion to the next semester.

• Recommendations regarding admission process for different departments are forwarded to the Registrar office for their formal registration as university student.

• On successful completion of 4th semester, graduate students are allotted major courses by the Dean Faculty of FC & FS.

• Admission merit based upon marks percentages of previous and entry test exams etc.

**Standard-5.3:** The process of recruiting and retaining highly qualified faculty members must be in place and clearly documented. Also processes and procedures for faculty evaluation, promotion must be consistent with institution mission statement. These processes must be periodically evaluated to ensure that it is meeting with its objectives

University follows recruitment policy given by the HEC. Induction of all positions at Faculty level is done as per rule:

• Different faculty positions are advertised in different newspapers of national circulation; Applications are received by the Registrar office, call letters are issued to the short-listed candidates on the basis of experience, qualification, publications and other qualities/activities as fixed by the University.

• The candidates are interviewed by the University Selection Board and Principal and alternate candidates are selected.

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

• Induction of new candidates depends upon the number of approved vacancies.

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

• HEC also supports appointment of highly qualified members as foreign faculty Professor, National Professors and deputes them in various departments of the University.
Standard 5-4: The process and procedures used to ensure that teaching and delivery of course material to the students emphasizes active learning and that course learning outcomes are met. The process must be periodically evaluated to ensure that it is meeting its objectives.

- To impart the most recent advances and techniques in entomology, course curriculum are regularly revised / updated time to time.
- With the emergence of new fields, new courses are set and included in the curriculum.
- Students usually buy relatively cheaper books of Asian Editions. These editions are also available in university library where computers, electronic journals and internet facility are made available to all faculty members and students.
- All sorts of audio visual aids are utilized in educational process.
- All efforts are made that the courses and knowledge imparted meet the objectives and outcome. The progress is regularly reviewed in the staff meetings.

Standard 5-5: The process that ensures that graduates have completed the requirements of the program must be based on standards, effective and clearly documented procedures. This process must be periodically evaluated to ensure that it is meeting its objectives.

- The Controller of Examinations announces the date of commencement of examination. After 10-20 days of the examinations, the controller office notifies the results of the students. The evaluation procedure involves quizzes, mid and final examinations, practicals, assignments and reports, oral and technical presentations. Candidates who secure 80% or above marks are awarded grade A; grade Gold medals are awarded to the students who secure highest marks in various fields. Degrees are awarded to the students on the annual convocation that is held annually.
CRITERION 6: FACULTY

6-1: There must be enough full time faculty who are committed to the program to provide adequate coverage of the program areas/courses with continuity and stability. The interests and qualifications of all faculty members must be sufficient to teach all courses, plan, modify and update courses and curricula. All faculty members must have a level of competence that would normally be obtained through graduate work in the discipline. The majority of the faculty must hold a Ph.D. in the discipline.

At present there is one professor, one associate professor, two assistant professors and two lecturers working in the programme. One assistant professor and two lecturers are abroad perusing Ph.D. studies.

Table 7: Faculty Distribution by Program Areas in Entomology

<table>
<thead>
<tr>
<th>Program area of specialization</th>
<th>Courses in the area and average number of students per year</th>
<th>Number of faculty members in each area</th>
<th>Number of faculty with Ph.D. degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Entomology</td>
<td>18</td>
<td>03</td>
<td>-</td>
</tr>
<tr>
<td>Stored Product Entomology</td>
<td>07</td>
<td>01</td>
<td>01</td>
</tr>
<tr>
<td>Insect Biosystematics</td>
<td>05</td>
<td>01</td>
<td>01</td>
</tr>
<tr>
<td>Applied Entomology</td>
<td>02</td>
<td>02</td>
<td>01</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

Standard 6-2: All faculty members must remain current in the discipline and sufficient time must be provided for scholarly activities and professional development. Also, effective programs for faculty development must be in place. Effective Programs for Faculty Development

- Faculty members are provided with different academic, research and training facilities as per availability in the university system.
- Currently three faculty members are abroad for completion of their PhD degrees sponsored by HEC.
- Research supervisors are offered incentives for implementing different laboratory and field experiments to promote high standard research activities.
Standard 6-3: All faculty members should be motivated and have job satisfaction to excel in their profession.

Motivation and encouragement are among the main tools for the better performance of the faculty team members. Faculty members are contented by the initiatives undertaken by the management in this regard. Formal and informal coaching by the senior faculty members, different entertainment events, field visits and excursions etc play a vital role in motivating the young faculty members.

Faculty Survey:
Below given figure represents the Faculty survey (Proforma 5, Annexure V). The results indicated that significantly 60% are satisfied as compared to others. However around 30% are very satisfied. Our HEC strengthened project will help to improve the practical workability.

At present one Professor, one associate professor, three assistant professors and four lecturers are working in the department. Most faculty members are experienced and professionally sound in their respective fields.
# Faculty Resume

## 1. DR. MUHAMMAD NAEEM

**Associate Professor**

<table>
<thead>
<tr>
<th>Name</th>
<th>Dr. Muhammad Naeem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Associate Professor</td>
</tr>
<tr>
<td></td>
<td>Department of Entomology, Pir Mehr Ali Shah, Arid Agriculture University, Rawalpindi</td>
</tr>
<tr>
<td></td>
<td>E-mail: <a href="mailto:naeem18ap@yahoo.co.uk">naeem18ap@yahoo.co.uk</a>, <a href="mailto:muhammad.naeem@uaar.edu.pk">muhammad.naeem@uaar.edu.pk</a></td>
</tr>
<tr>
<td></td>
<td>Phones: Office: +92-519062206, Cell: 03335751475</td>
</tr>
<tr>
<td>Experience</td>
<td><strong>PROFESSIONAL EXPERIENCE:</strong></td>
</tr>
<tr>
<td></td>
<td>1. Associate Professor (2006-2010): Served in Department of Entomology, PMAS-Arid Agriculture University, Rawalpindi, Pakistan.</td>
</tr>
<tr>
<td></td>
<td>2. Assistant Professor (2001-2005): Served as Assistant Professor, Department of Entomology, University of Arid Agriculture, Rawalpindi.</td>
</tr>
<tr>
<td></td>
<td>3. Lecturer (1998-2001): Served as Lecturer, Department of Entomology, University of Arid Agriculture, Rawalpindi.</td>
</tr>
<tr>
<td></td>
<td>2. Pakistan Ministry of Education Three years postgraduate foreign scholarship for Ph.D. in United Kingdom</td>
</tr>
<tr>
<td></td>
<td>3. Pakistan Ministry of Education Two years scholarship for M.Sc.(Hons). UAF. Pakistan</td>
</tr>
</tbody>
</table>
Hold memberships of the following Organisation and Societies
1992-97 Agroforestry Research Group, UK
1993-97 Pakistan Overseas Society, England
1994-95 International Student Organisation, Leeds
2002 to date The Agrics, Alumni Association, UAF.

MEMBERSHIP OF VARIOUS COMMITTEES OF THE UNIVERSITY:

<table>
<thead>
<tr>
<th>S/#</th>
<th>Name of the Committee</th>
<th>Served as</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tour Coordinator</td>
<td>Convener</td>
</tr>
<tr>
<td>2</td>
<td>Time table and Date sheet Committee</td>
<td>Convener</td>
</tr>
<tr>
<td>3</td>
<td>Comprehensive (Written &amp; Oral) Examination Committee, Dept. Zoology, Dept. Wild life</td>
<td>Member</td>
</tr>
<tr>
<td>4</td>
<td>Applications Scrutiny Committee for admission to B.Sc.(Hons.) Agri.</td>
<td>Member</td>
</tr>
<tr>
<td>5</td>
<td>Scrutiny of Synopsis and Thesis, Department of Sociology and Anthropology</td>
<td>Member</td>
</tr>
<tr>
<td>6</td>
<td>Quality control</td>
<td>Member</td>
</tr>
</tbody>
</table>

STATUS FOR M.Sc.(Hons.) STUDENTS UNDER MY SUPERVISION

(a) Department of Entomology

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name</th>
<th>Year</th>
<th>Title</th>
<th>Status</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>(94-arid-172)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(95-arid-14)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Shakeel Ahmed</td>
<td>2002</td>
<td>Population Dynamics And Distribution of Wheat Aphids And Their Natural Enemies</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td>(96-arid-49)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Irfan Ahmed</td>
<td>2004</td>
<td>Development of the Cereal Bait Formulations for the Lesser Bandicoot Rat, Bandicota bengalensis (Gray).</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td>(00-arid-354)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Waqas Abdullah</td>
<td>2006</td>
<td>Interrelationship of Cereal Aphids and their Natural Enemies on Wheat.</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td>(00-arid-819)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Abrar</td>
<td>2006</td>
<td>Bionomics of Rose Aphids and</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.No.</td>
<td>Name</td>
<td>Year</td>
<td>Title</td>
<td>Status</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------</td>
<td>------</td>
<td>----------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>7</td>
<td>Imran Abbas</td>
<td>2008</td>
<td>Comparative study of parasitoids attacking aphids on wheat and Brassica</td>
<td>Completed</td>
</tr>
<tr>
<td>8</td>
<td>Sohaib Shahid</td>
<td>2009</td>
<td>Bionomics of Aphids and Their Parasitoids on Wheat and Brassica</td>
<td>Completed</td>
</tr>
<tr>
<td>9</td>
<td>M. Naveed Usman</td>
<td>2009</td>
<td>Potential of biocontrol agents against population size of aphids on Brassica</td>
<td>Completed</td>
</tr>
<tr>
<td>10</td>
<td>Saleha S. Siddiqu. (03-arid-180)</td>
<td>2009</td>
<td>Responses of aphid and their natural enemies on cauliflower varieties</td>
<td>Completed</td>
</tr>
<tr>
<td>11</td>
<td>Ghulam Rabbani (07-arid-280)</td>
<td>2009</td>
<td>Biological studies of <em>Diaretiella rapae</em> (Mcintosh)</td>
<td>Completed</td>
</tr>
<tr>
<td>12</td>
<td>M. Mohsin Hasnat</td>
<td>2009</td>
<td>Taxonomy of Crane flies of Pothwar region</td>
<td>Completed</td>
</tr>
<tr>
<td>13</td>
<td>M. Ramzan</td>
<td>2010</td>
<td>Taxonomic studies of Cetoniid beetle (<em>Cetoniidae: Coleoptera</em>) of Pothwar Region</td>
<td>in process</td>
</tr>
<tr>
<td>14</td>
<td>M. Umair</td>
<td>2010</td>
<td>Taxonomy study of ants in Islamabad and Rawalpindi</td>
<td>In process</td>
</tr>
<tr>
<td>15</td>
<td>Imitinan Akram Khan</td>
<td>2010</td>
<td>The pattern of an aphid-parasitoid community in field and horticultural crops</td>
<td>In process</td>
</tr>
<tr>
<td>16</td>
<td>Tanzeel Ahmad</td>
<td>2010</td>
<td>Systematics of Pyralidae (Lepidoptera) from Pothwar region</td>
<td>In process</td>
</tr>
<tr>
<td>17</td>
<td>S.M. Shahzad Ali</td>
<td>2010</td>
<td>Taxonomic study of Dung beetles (Coleoptera: Scarabidae) from Pothwar region</td>
<td>In process</td>
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</tbody>
</table>

STATUS FOR Ph.D. STUDENTS UNDER MY SUPERVISION

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name</th>
<th>Year</th>
<th>Title</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ahmad Zia (98-arid-889)</td>
<td>2010</td>
<td>Biosystematics of Damselflies (<em>Zygoptera:Odonata</em>) of Pakistan</td>
<td>Completed</td>
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<tr>
<td>2</td>
<td>Imran Bodla (98-arid-778)</td>
<td>2010</td>
<td>Biosystematics of aphid parasitoids from Punjab Province of Pakistan</td>
<td>Completed</td>
</tr>
<tr>
<td>3</td>
<td>Mubashar</td>
<td></td>
<td>Investigations on adaptability</td>
<td>In progress</td>
</tr>
</tbody>
</table>

78
<table>
<thead>
<tr>
<th></th>
<th>Hassan (05-arid-26)</th>
<th>of some silkworm lines to adverse temp. and humidity for seed cocoon production</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Abdul Sattar (08-arid-772)</td>
<td>Ecology and management of Termites in Urban environment (Islamabad)</td>
</tr>
<tr>
<td>5</td>
<td>Anwar Hyder Khan Alvi (08-arid-02)</td>
<td>Role of Nucleopolyhedrovirus in the Management of Chickpea pod borer (Helicoverpa armigera Hubner)</td>
</tr>
<tr>
<td>6</td>
<td>Asia Riaz (93-ag/arid-347)</td>
<td>Relative efficacy of potent biocontrol agents of Earias vitella (FAB.)</td>
</tr>
</tbody>
</table>

Member of M.Sc.(Hons.) Students (15 Students)  
Member for Ph.D. Students (07 Students)  

Service Activity  
Termite treatment, Household insect management in University

Brief Statement of Research Interest  
Insect biosystematics and ecology

Publications


<table>
<thead>
<tr>
<th>Number</th>
<th>Reference</th>
</tr>
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</table>

**International**

<table>
<thead>
<tr>
<th>Number</th>
<th>Reference</th>
</tr>
</thead>
</table>


**CONFERENCES /PROCEEDING**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Authors</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>1</td>
<td>M. Naeem and I. Bodla</td>
<td>Biosystematics of <em>Tribolium castaneum</em> (Herbst).</td>
</tr>
<tr>
<td>2005</td>
<td>3</td>
<td>Compton SGA and M. Naeem</td>
<td>Dispersal and Landing of Insects in silvoarable agroforestry: Implications for Better Pest Management</td>
</tr>
</tbody>
</table>

Proceedings of training workshop on “Controlled and modified atmospheres to preserve post harvest quality of stored grains”

26th Pakistan Congress of Zoology (International). University of the Punjab, Lahore

Proceeding of International Workshop of Sanitary and Phytosanitary Measures
## 2. RESUME OF MR. HUMAYUN JAVED

<table>
<thead>
<tr>
<th>Name</th>
<th>Humayun Javed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td>PMAS-AAUR 0333-5154954</td>
</tr>
<tr>
<td>Experience</td>
<td>28-02-1987 Working as Lecturer</td>
</tr>
<tr>
<td></td>
<td>Jan, 1998 Working as Assistant Professor up till now</td>
</tr>
<tr>
<td>Honor and Awards</td>
<td>Member Syndicate</td>
</tr>
<tr>
<td>Membership</td>
<td>Membership Pakistan Journal of Botany</td>
</tr>
<tr>
<td></td>
<td>Incharge Refreshment Committee</td>
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</tbody>
</table>

### Graduate Students

- **Years** | **Degree** | **Name**                  |
- 2009      | M.Sc. (Hons) | Soaib Ali Hassan (03-arid-22) |
- 2009      | M.Sc. (Hons) | Zia-ul-Hassan (07-arid-266)   |
- 2009      | M.Sc. (Hons) | Laila Khalid (07-arid-260)    |
- 2009      | M.Sc. (Hons) | Tahir Mehmood Khan (03-arid-103) |
- 2010      | M.Sc. (Hons) | Hassan Yasoob (08-arid-719)   |
- 2010      | M.Sc. (Hons) | Saifullah (08-arid-722)      |

### Research Grants and Contracts

1. **HEC FUNDED PROJECT**
   - Project No. 20-305/R&D
   - Project Title “Biosystematics of Odonata of Pakistan”
   - Worked as Principle Investigator
   - (Completed with National & International publications in 2008)

### Other Research or Creative Accomplishments

- Three species of aphid parasitoids new to science

### Selected Professional Presentations

- Three species of aphid parasitoids new to science
<table>
<thead>
<tr>
<th>Service Activity</th>
<th>Advise to the farmers for the management of insect/pests in field as well as in houses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brief Statement of Research Interest</td>
<td>Host plant resistance/integrated pest management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Publications</th>
</tr>
</thead>
</table>


against *Callosobruchus analis* under laboratory conditions. International journal of agriculture and veterinary medical sciences. (Accepted).


<table>
<thead>
<tr>
<th>Research Grants and Contracts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Research or Creative Accomplishments</td>
</tr>
<tr>
<td>Evaluated comparative resistant cultivar (Nirala) during Ph.d. research</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Selected Professional Presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physico-Morphic variations among brinjal cultivars against <em>Leucinodes orbonalis</em> Guenee [Pyralidae: Lepidoptera] and its management with different techniques</td>
</tr>
</tbody>
</table>

### 3. RESUME OF DR. ATA UL MOHSIN

**Performa 9**

<table>
<thead>
<tr>
<th>Name</th>
<th>Dr. Ata ul mohsin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal</strong></td>
<td>House No. 7, St. # 1, Sanobar Hill, Satra Meel, Bhara Kaho, Islamabad <a href="mailto:mohsin.malik1@hotmail.com">mohsin.malik1@hotmail.com</a> Tel. 0300-5504577, 051-2550567</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experience</th>
<th>May 07, 2008 – To date Assistant Professor (Higher Education Commission Pakistan) Department of Entomology Arid Agriculture University, Murree road, Rawalpindi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>July 01, 2004 - To Jan. 31, 2008 National Project Coordinator National Urban Poverty Alleviation Programme (United Nations Development Programme) Services Block, Univ. of Arid Agriculture Murree Road, Rawalpindi</td>
</tr>
<tr>
<td></td>
<td>October, 2002 – December 2003 Assistant Project Manager/IPM</td>
</tr>
</tbody>
</table>
Specialist Area Development Project South AJK (United Nations Development Programme) Forest Office Premises, Allama Iqbal Road Mirpur, AJK

May 1997 to December 1997 Scientific officer Integrated Pest Management Institute NARC, Islamabad
August 1986-May 1992 Scientific officer Entomological Research Laboratories
December 85 - August 86 Assistant Research Officer Fodder Research Institute Sargodha, Pakistan

<table>
<thead>
<tr>
<th>Honor and Awards</th>
<th>SCHOLARSHIPS AWARDED</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>• Benevolent Fund Scholarship during Higher Secondary School Certificate</td>
</tr>
<tr>
<td></td>
<td>• University Merit Scholarship during B.Sc. (Hons.) degree course</td>
</tr>
<tr>
<td></td>
<td>• Pakistan Atomic Energy Commission Talent Scholarship, during Master degree course</td>
</tr>
<tr>
<td></td>
<td>• Cultural Exchange Scholarship during Ph.D.</td>
</tr>
<tr>
<td></td>
<td>DISTINCTIONS/ AWARDS</td>
</tr>
<tr>
<td></td>
<td>• Silver medal in university Debates Univ. of Agriculture Faisalabad Certificate of Merit, 1985-86.</td>
</tr>
<tr>
<td></td>
<td>• 2nd position in M.Sc. (Hons.) degree course among 50 students class Entomology Deptt. U.A. Faisalabad</td>
</tr>
<tr>
<td></td>
<td>• 2nd position in B.Sc. (Hons.) degree course among 45 students class Entomology Dept.U.A. Faisalabad</td>
</tr>
<tr>
<td></td>
<td>• 3rd position in Arabic language Diploma Course at University of Agri. Faisalabad</td>
</tr>
<tr>
<td></td>
<td>• Letter of Appreciation from Chairman, Pakistan Agricultural Research Council, Islamabad.</td>
</tr>
<tr>
<td></td>
<td>• A number of shields awarded in recognition of developmental work in UNDP funded projects</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Membership</th>
<th>ASSOCIATION WITH SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Member of Pakistan Congress of Zoology</td>
</tr>
<tr>
<td></td>
<td>• Member of Pakistan Entomological Society</td>
</tr>
<tr>
<td></td>
<td>• Professional Member of Human Resource Development Network (HRDN), Islamabad, Pakistan.</td>
</tr>
<tr>
<td></td>
<td>MEMBER OF EDITORIAL BOARD</td>
</tr>
<tr>
<td></td>
<td>• Co-Editor of “Idrak” a quarterly news paper of Neelum and</td>
</tr>
</tbody>
</table>
- Editor of Quarterly Newsletter “AKS”, ADP South AJK, Mirpur.
- Editor of “NUPAP Newsletter” of National Urban Poverty Alleviation Programme, a UNDP founded project.

<table>
<thead>
<tr>
<th>Graduate Students</th>
<th>Postdocs</th>
<th>Undergraduate Students</th>
<th>Honour Students</th>
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</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Nil</td>
<td>22 students in Entomology major subject</td>
<td>Nil</td>
</tr>
</tbody>
</table>

Service Activity

Brief Statement of Research Interest

Biological control of insect pests

Publications

20. Published papers = 12

21. Submitted for publication = 3

Research Grants and Contracts

Nil

Other Research or Creative Accomplishments

Establishment of Trichogramma chilonis rearing laboratory at Entomology Dept. Directorate General of Agriculture, Muzaffarabad, AJK

Development of Pest Management system for Walnut Borer in Neelam and Jhelum Vallies Muzaffarabad AJK

Selected Professional Presentations

Pest Management of insect pests in Barani Areas.
Natural resource Development with special focus on agriculture

4. RESUME OF DR. M. FAROOQ NASIR

<table>
<thead>
<tr>
<th>Name</th>
<th>Dr. M. Farooq nasir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td>House # 234, Street # 31, Sector I-8-2, Islamabad, Pakistan cell: 03005215084</td>
</tr>
<tr>
<td>Experience</td>
<td>Assistant Professor PMAS-Arid Agriculture University Rawalpindi (Oct. 2009 to date)</td>
</tr>
</tbody>
</table>
Higher Scientific Officer  
CABI South Asia, Pakistan  
(Jan.2006-June 2007)  
Worked as Project Manager of “IPM Advisory Group Project” in North Western Frontier Province (NWFP) districts of Chitral, Swat, and DIKhan in collaboration with the Intercooperation (an International NGO). The project was financially sponsored by the Swiss Development Corporation (SDC). The responsibilities included:  
Scientific Officer  
CAB International Regional Bioscience Centre Pakistan (1997-2004)  
Assistant Manager  
Five years (1991-1996) experience as Assistant Manager in multinational Agro-chemical Company (BAYER) Chemdyes Pakistan Pvt. Ltd. The details of duties performed were as under:  
Junior Scientific Officer  
Pakistan Agricultural Research Council, Islamabad, Pakistan  
(1987-1988)

<table>
<thead>
<tr>
<th>Honor and Awards</th>
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</thead>
<tbody>
<tr>
<td>Membership</td>
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<table>
<thead>
<tr>
<th>Graduate Students</th>
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<tbody>
<tr>
<td>Postdocs</td>
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<tr>
<td>Undergraduate Students</td>
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<thead>
<tr>
<th>Honour Students</th>
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<tbody>
<tr>
<td>Years</td>
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<table>
<thead>
<tr>
<th>Service Activity</th>
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</table>

| Brief Statement of Research Interest |

<table>
<thead>
<tr>
<th>Publications</th>
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</thead>
</table>


<table>
<thead>
<tr>
<th>Research Grants and Contracts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Research or Creative Accomplishments</td>
</tr>
<tr>
<td>Selected Professional Presentations</td>
</tr>
</tbody>
</table>

- Participated in the 2nd International Symposium on Biological Control of Arthropods 12-16 September 2005, Davos, Switzerland.
- Participated in the Conference of the German Entomological Society (DgaaE) 21-24 March 2005, Dresden, Germany.
- Participated in 2nd Global workshop of Bio-Net International at Cardiff, Wales, United Kingdom from 22 to 29 August 1999.

### 5. RESUME OF MR. MUNIR AHMAD

<table>
<thead>
<tr>
<th>Name</th>
<th>Munir Ahmad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td>Department of Entomology, PMAS-Arid Agriculture University Rawalpindi 03006361618</td>
</tr>
<tr>
<td>Experience</td>
<td>18.09.2008 to date Lecturer, Department of Entomology, Pir Mehr Ali Shah, Arid Agriculture University Rawalpindi</td>
</tr>
<tr>
<td></td>
<td>May 2008 to 15.09.2008 Scientific Officer, Central Cotton Research Institute, Old Shujabad Road, Multan under Project “Biological control of cotton insect pests of cotton in Pakistan”</td>
</tr>
</tbody>
</table>
|            | Sep 2002 – April 2004 Scientific Officer, Central Cotton Research Institute, Old Shujabad Road, Multan under CFC Project “Sustainable control of cotton bollworm, *Helicoverpa armigera* under
<table>
<thead>
<tr>
<th>Honor and Awards</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. International Research Support Initiative Program for PhD studies,</td>
</tr>
<tr>
<td>2. Merit Scholarship under 200 Scholarship Scheme for PhD Studies,</td>
</tr>
<tr>
<td>Ministry of Science and Technology, (Higher Education Commission) Government of</td>
</tr>
<tr>
<td>Pakistan (September, May, 2004 – May 16, 2008)</td>
</tr>
<tr>
<td>1. Merit Scholarship for F. Sc studies by Board of Education, Multan,</td>
</tr>
<tr>
<td>Pakistan (1991-1993)</td>
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</table>

<table>
<thead>
<tr>
<th>Membership</th>
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<tbody>
<tr>
<td>Entomological Society of America (for year 2007)</td>
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</table>

<table>
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<tr>
<th>Graduate Students Postdocs Undergraduate Students</th>
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<tbody>
<tr>
<td>Not applicable</td>
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<table>
<thead>
<tr>
<th>Honour Students</th>
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<table>
<thead>
<tr>
<th>Service Activity</th>
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</thead>
<tbody>
<tr>
<td>In-charge laboratories of Entomology department</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brief Statement of Research Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insecticide resistance management and control</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Munir Ahmad, Mushtaq A. Saleem and Ali H. Sayyed (2009) Efficacy of</td>
</tr>
<tr>
<td>insecticide mixtures against pyrethroids and organophosphates resistant</td>
</tr>
<tr>
<td>populations of <em>Spodoptera litura</em> (Lepidoptera: Noctuidae). Pest</td>
</tr>
<tr>
<td>Management Science 65: 266-274.</td>
</tr>
<tr>
<td>limit the development of resistance to indoxacarb and deltamethrin in</td>
</tr>
<tr>
<td><em>Heliothis virescens</em> (Lepidoptera: Noctuidae) Journal of Economic</td>
</tr>
<tr>
<td>3  Mushtaq A Saleem, Munir Ahmad, Mushtaq Ahmad, Muhammad Aslam and A. H.</td>
</tr>
<tr>
<td>Sayyed (2008) Resistance to selected</td>
</tr>
</tbody>
</table>
organochlorine, organophosphate, carbamates and pyrethroid insecticides in *Spodoptera litura* (Lepidoptera: Noctuidae) from Pakistan Journal of Economic Entomology 101(5): 1667-1675.


<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>

**Research Grants and Contracts**

Not applicable

**Other Research or Creative Accomplishments**

Not applicable

**Selected Professional Presentations**

- **International**
  7. Mushtaq Ahmad, Muhammad Iqbal Arif, Munir Ahmad, Abid Khan

National


5. Muhammad Ishtiaq, Mushtaq A. Saleem and Munir Ahmad (2009) Baseline susceptibility data for four insecticides against beet armyworm, Spodoptera exigua (Hubner) (Lepidoptera: Noctuidae). 29th Pakistan Congress of Zoology. February 24-26, 2009, University of Sindh, Jamshoro, Pakistan

4. Munir Ahmad, Mushtaq Ahmad Saleem and Mushtaq Ahmad (2006) Occurrence of time-oriented mortality against leaf worm, *Spodoptera litura* (Fab.) (Lepidoptera: Noctuidae) of some new chemistry insecticides. 26th Pakistan Congress of Zoology (International) April 4-6, 2006. University of the Punjab, Lahore, Pakistan

3. Munir Ahmad, Mushtaq Ahmad Saleem and Shafqat Saeed (2006) Larval parasitism of *Helicoverpa armigera* (Hubner) (Lepidoptera: Noctuidae) from unsprayed field crops 26th Pakistan Congress of Zoology (International) April 4-6, 2006. University of the Punjab, Lahore, Pakistan

2. Muhammad Rafiq, Abdul Ghaffar and Munir Ahmad (2006) Host plant survey of *Spodoptera litura* (Fab.) (Lepidoptera: Noctuidae) from 2004-05. 26th Pakistan Congress of Zoology (International) April 4-6, 2006. University of the Punjab, Lahore, Pakistan

1. Munir Ahmad, Mushtaq Ahmad Saleem and Mushtaq Ahmad (2005) Comparative efficacy of some conventional and new chemistry insecticides against armyworm, *Spodoptera litura* (F.) (Lepidoptera: Noctuidae) under laboratory conditions. 25th Pakistan Congress of Zoology (International) March 1-3, 2005. Sind Agricultural University, Tandojam, Pakistan

### 6. RESUME OF M. ASIF AZIZ

<table>
<thead>
<tr>
<th>Name</th>
<th>Dr. Muhammad Asif Aziz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td>Village Ghazi Minara P/O Tehsil and District Sheikhupura, Punjab (Pakistan) (Cell.) 03226862246 (E-mail) <a href="mailto:asifaziz572@gmail.com">asifaziz572@gmail.com</a></td>
</tr>
<tr>
<td>Experience</td>
<td>Lecturer in Department of Entomology in PMAS- Arid Agriculture University Rawalpindi from 26-01-2008 to present</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------</td>
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<tr>
<td>Honor and Awards</td>
<td>N/A</td>
</tr>
<tr>
<td>Membership</td>
<td>N/A</td>
</tr>
<tr>
<td>Graduate Students Postdocs</td>
<td>List supervision of graduate students</td>
</tr>
<tr>
<td>Undergraduate Students</td>
<td>List of undergraduate (B.Sc. Hons) students supervised during internship</td>
</tr>
<tr>
<td>2010</td>
<td>M.Sc. (Hons)</td>
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<tr>
<td>Bushra Siddique</td>
<td>04-arid-190</td>
</tr>
<tr>
<td>2008</td>
<td>B.Sc. (Hons)</td>
</tr>
<tr>
<td>Bushra Siddique</td>
<td>04-arid-190</td>
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<tr>
<td>List of undergraduate (B.Sc. Hons) students supervised during internship</td>
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</tr>
<tr>
<td>2008</td>
<td>B.Sc. (Hons)</td>
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<tr>
<td>Muhammad Arslan Anwar</td>
<td>04-arid-96</td>
</tr>
<tr>
<td>2008</td>
<td>B.Sc. (Hons)</td>
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<tr>
<td>Muhammad Younas</td>
<td>04-arid-115</td>
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<td>2010</td>
<td>B.Sc. (Hons)</td>
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<tr>
<td>Huma Nazir Kayani</td>
<td>06-arid-43</td>
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<tr>
<td>2010</td>
<td>B.Sc. (Hons)</td>
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<tr>
<td>Zahid Iqbal</td>
<td>06-arid-211</td>
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<tr>
<td>Honour Students</td>
<td>Show other information as appropriate and list membership on graduate degree committees.</td>
</tr>
<tr>
<td>Service Activity</td>
<td>• Teaching and Research</td>
</tr>
<tr>
<td></td>
<td>• Member of Admission Committee of B. Sc. (Hons.) students</td>
</tr>
<tr>
<td>Brief Statement of Research Interest</td>
<td>May be as brief as a sentence or contain additional details [to one page in length]</td>
</tr>
<tr>
<td></td>
<td>• Sustainable management of Spotted Bollworm of Okra</td>
</tr>
<tr>
<td></td>
<td>• Eco-friendly management of wheat aphids with botanicals</td>
</tr>
<tr>
<td></td>
<td>• Monitoring of insecticide resistance in Cotton bollworm and Whitefly</td>
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<tr>
<td>Publications</td>
<td></td>
</tr>
</tbody>
</table>
## Research Grants and Contracts

Entries should include:

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Agency/Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Exploration of pesticidal effect of different neem products for the management of wheat aphids</td>
<td>PMAS-AAUR</td>
</tr>
</tbody>
</table>

Total Award Amount: 106900

Segment the list under following headings:

- Completed: One
- Funded and in progress: Nil
- In review: Nil

### Other Research or Creative Accomplishments

- N/A

### Selected Professional Presentations

List patents, software, new products developed, etc. N/A

### 7. RESUME OF MR. IMRAN BODLAH

<table>
<thead>
<tr>
<th>Name</th>
<th>IMRAN BODLAH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td>District Layyah, wariach garden near police line, 03228758287</td>
</tr>
<tr>
<td>Experience</td>
<td>April, 2008, Lecturer, Department of Entomology-PMAS-AAUR October 2004, Water Management Officer, Own farm water management district Muzafar Garh.</td>
</tr>
<tr>
<td>Honor and Awards</td>
<td>Teachings assistantship scholarship during PhD</td>
</tr>
<tr>
<td>Membership</td>
<td>N/A</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Graduate Students</td>
<td>2010  BSc. Hons. Muhammad Naeem</td>
</tr>
<tr>
<td>Postdocs</td>
<td></td>
</tr>
<tr>
<td>Undergraduate Students</td>
<td></td>
</tr>
<tr>
<td>Honour Students</td>
<td>N/A</td>
</tr>
<tr>
<td>Service Activity</td>
<td>Teaching classes to B.Sc (Hons) and M.Sc. (Hons) and in the Project activities entitled: Strengthening of Department of Entomology.</td>
</tr>
<tr>
<td>Brief Statement of Research Interest</td>
<td>Biosystematics of Aphids, aphid parasitoids and hyperparasitoids and their Biology</td>
</tr>
</tbody>
</table>

| Research Grants and Contracts | N/A                           |
| Other Research or Creative Accomplishments | Three species of Aphid parasitoids |
| Selected Professional Presentations | N/A                           |

**LIST OF PUBLICATIONS**

1. **RESEARCH PUBLICATIONS BY DR MUHAMMAD NAEEM**

**RESEARCH PUBLICATIONS:**
National


**International**


**2. RESEARCH PUBLICATIONS BY MR. HUMAYUN JAVED**


3. **RESEARCH PUBLICATIONS BY Dr. ATA UL MOHSIN**

**International Publications;**


**National Publications:**


6. Nahid Akhtar; Rao Tanwir Hashmat; Ghulam Gillani; Ehsan ul Haq; M. Irshad; Ata ul Mohsin and Shahina Yasmin, 2007. Resistance of different wheat lines to Rhopalosiphum padi (L),


5. **RESEARCH PUBLICATIONS BY Dr. FAROOQ NASIR**


6. RESEARCH PUBLICATIONS BY MR. MUNIR AHMAD

*International Research papers*


National research papers


Presentations in conferences

International presentation


National presentation


7. **RESEARCH PUBLICATIONS BY M. ASIF AZIZ**


8. **RESEARCH PUBLICATIONS BY MR. IMRAN BODLAH**

1. First record of *Binodoxys basicurvus* Shujauddin, 1973 (Hymenoptera: Braconidae, Aphidiinae) from the Punjab Province of Pakistan. (Accepted)

2. Record of *Aenasius bambawale* Hayat, 2009 (Hymenoptera: Encyrtidae) from Punjab, Pakistan. (Published)

3. Checklist, distribution, host range, and ecology of Aphidoidea (Homoptera) from the rainfed region of Punjab Province of Pakistan (Accepted)
CRITERION 7: INSTITUTIONAL FACILITIES

Standard- 7.1: The institution must have the infrastructure to support new trends in learning such as e-learning:

The faculty has access to e-library which is very helpful for the high quality education and producing research of international standard. They also have access to the internet. However the department lacks facilities as mentioned below:

- Majority of the faculty members do not have access to the PCs as department have only three Computers provided by the university.
- No registered softwares of computer programmes are available to be installed at departmental level.
- Registered antivirus software is immediately required.
- Registered versions of Microsoft Windows, Office XP, Adobe reader, writer are required.
- A printer with in built scanner and fax facility is urgently needed by the department.

Standard- 7.2: The library must possess an up-to-date technical collection relevant to the program and must be adequately staffed with professional personnel

The University Central Library has very limited number of books, journals and periodicals. It’s a small library in term of space and facilities with no catalogue systems. It does not meet the standards of a University Library. Department itself is developing its own library. It needs funds allocation to establish a well equipped library at departmental level.

Standard- 7.3: Class-rooms must be adequately equipped and offices must be adequate to enable faculty to carry out their responsibilities

Currently the class rooms are not enough and the space is not only limited but some basic facilities are lacking. Multimedia are not available for the lecture halls. Practical lab space is also not meeting the needs which affects the quality of teaching. Although at present offices for the faculty are sufficient, yet on the return of the remaining faculty, we will face severe problem regarding shortages of offices for the staff.
**CRITERION 8: INSTITUTIONAL SUPPORT**

The university administration has been striving to strengthen all the departments and up-gradation of departments and establishing new Faculties and Institutes. The university is also trying to attract highly qualified faculty members. Currently, the university has launched tenure track system which would be helpful in pooling up better human resources as faculty members.

**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.

At present department is having inadequate financial resource to meet the present needs for a better education system. Individual research grants for students and faculty are mainly supporting the departmental research activities. Keeping in view the awful need for increasing the financial resources to establish a library, laboratories and computer facilities, The HEC has approved a project for strengthening the department. This project will prove beneficial in improving the quality of education and research.

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

The department offers admission annually to graduate and M.Sc. Hons students. However Ph.D. admission are usually offered in each semester.

**RESEARCH STUDENTS REVIEW**

Proforma 4 was used to conduct survey to review the progress of Ph.D and M.Sc. Hons students. General inferences are drawn hereunder.

- Majority of the students were found satisfied with the level of supervision maintained at department.
- The students had access to the available sophisticated equipments through a well managaged system.
- The students have access to scientific literature through central laboratory.
Some students have requested for the provision of computers or their research work.

Some students argued that equipments relating molecular and biochemical techniques should be made available in the department to carry out biochemical analysis of cereals, toxicological study of insecticides and biosystematics study of insects.

**Standard- 8.3:** Financial resources must be provided to acquire and maintain Library holdings, laboratories and computing facilities.

Although administration provides adequate financial resources, yet there is need to increase budget to carry out advance level research.
Summary and Conclusion

Department of Entomology, Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi is giving its input in production of highly skilled manpower at graduate level and providing practical and economical solution to the insect pest problems for enhancing agricultural productivity in arid agriculture setup. During present self assessment activity, the program’s mission objectives and outcomes are evaluated. Most of the Program’s outcomes are found highly satisfactory. Teachers’ evaluation figures of eight teachers depict high standards; their performance score ranges from 4.60 to 4.70 with an average of 4.65. Student’s evaluation score ranged from 4.2 to 4.3 with an average value of 4.25. Alumni survey revealed variable results with regard to different traits like knowledge, management and leadership qualities, interpersonal communication skill etc. Bottlenecks earmarked as lack of labs, classrooms, some sort of high tech equipment in laboratories along with computers and other accessories.

To design and develop degree courses curriculum, department also rendered its technical input in designing and development of course curriculum. All periodic activities related to education, department played its role very effectively and efficiently. All the examinations were conducted as per schedules given by the Controller Exams and all of the academic schemes were prepared as per guidelines provided. The number of courses along with their titles and credit hours for each semester, their course contents for degree program were fully planned and finalized. The evaluation score concerning their effectiveness was found very much above the satisfactory level.

Assessment activity also incorporates a survey about the available facilities and blockage in the field of education. Presently, through an HEC funded project, facilities for quality education are being developed at department level. This development will help both students and faculty members in attaining stipulated targets in an efficient manner. In a very much planned manner, measures have been adopted to guide students in developmentof communication skills through organizing meetings and tutorials, conducting field visits, hunting employment and effective cooperation and interaction with all stakeholders.

Besides, the guidelines and the course of action formulated by the Higher Education Commission and the university itself are fully followed in all sort of activities related to admissions, teaching, research, examinations, procurement and recruitment processes etc. In order to build capacity of the faculty and the staff members there is a felt need to be in contact with the educational and training institutions at
national and international level. Incidentally, sorts of diverse level of findings were gathered through this assessment activity but within satisfactory level. Restricted access incases of availability of additional infrastructure and classrooms/laboratory needs were also identified. This sort of support to the department can enhance its effectivety and capability in meeting the stipulated targets and objectives.
Annexure -1

Proforma - 1
Student Course Evaluation Questionnaire
(To be filled by each Student at the time of Course Completion)

Department ___________________________ Course No ___________________________
Course Title ___________________________ Teacher Name _______________________
Year of Study ___________________________ Semester / Term _____________________

Please give us your views so that Course quality can be improved. You are encouraged to be frank and constructive in your comments.

**CORE QUESTIONS**

<table>
<thead>
<tr>
<th>Course Content and Organization</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The course objectives were clear</td>
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<td>2. The Course workload was manageable</td>
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<tr>
<td>3. The Course was well organized (e.g. timely access to materials, notification of changes, etc.)</td>
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<td></td>
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</tr>
<tr>
<td>4. Comments</td>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Student Contribution</th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>5. Approximate level of your own attendance during the whole Course</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I participated actively in the Course</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>7. I think I have made progress in this Course</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Comments</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Environment and Teaching Methods</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical etc)</td>
<td></td>
<td></td>
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<tr>
<td>10. The learning and teaching methods encouraged participation.</td>
<td></td>
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</tr>
<tr>
<td>11. The overall environment in the class was conducive to learning.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>12. Classrooms were satisfactory</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Comments</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
## Learning Resources

14. Learning materials (Lesson Plans, Course Notes etc.) were relevant and useful.
15. Recommended reading Books etc. were relevant and appropriate
16. The provision of learning resources in the library was adequate and appropriate
17. The provision of learning resources on the Web was adequate and appropriate (if relevant)
18. Comments

## Quality of Delivery

19. The Course stimulated my interest and thought on the subject area
20. The pace of the Course was appropriate
21. Ideas and concepts were presented clearly
22. Comments

## Assessment

23. The method of assessment were reasonable
24. Feedback on assessment was timely
25. Feedback on assessment was helpful
26. Comments

## Additional Core Questions

### Instructor / Teaching Assistant Evaluation

27. I understood the lectures
28. The material was well organized and presented
29. The instructor was responsive to student needs and problems
30. Had the instructor been regular throughout the course?

### Tutorial

30. The material in the tutorials was useful
31. I was happy with the amount of work needed for tutorials
32. The tutor dealt effectively with my problems
Practical
33. The material in the practicals was useful
☐ ☐ ☐ ☐ ☐ ☐
34. The demonstrators dealt effectively with my problems.
☐ ☐ ☐ ☐ ☐ ☐

Overall Evaluation
35. The best features of the Course were:

36. The Course could have been improved by:

Equal Opportunities Monitoring (Optional)
37. The University does not tolerate discrimination on any irrelevant distinction (e.g. race, age, gender) and is committed to work with diversity in a wholly positive way. Please indicate below anything in relation to this Course which may run counter to this objective:

Demographic Information: (Optional)
38. Full/part time study: Full Time ☐ Part Time ☐
39. Do you consider yourself to be disabled: Yes ☐ No ☐
40. Domicile:
41. Gender: Male ☐ Female ☐
42. Age Group: less than 22 ☐ 22-29 ☐ over 29 ☐
43. Campus: Distance Learning/ Collaborative ☐

THANK YOU
ANNEXURE 2

Proforma: 2

FACULTY COURSE REVIEW REPORT

(To be filled by each teacher at the time of course completion)

For completion by the course instructor and transmission to head of department of his/her nominee (Deputy Quality Officer) together with copies of the course syllabus outline.

<table>
<thead>
<tr>
<th>Department</th>
<th>Entomology</th>
<th>Faculty</th>
<th>FC&amp;FS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course code</td>
<td>Ent-607</td>
<td>Title</td>
<td>Range and forest Entomology</td>
</tr>
<tr>
<td>Session</td>
<td>2009-10</td>
<td>Semester</td>
<td>Autumn</td>
</tr>
<tr>
<td>Credit Value</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name of Course instructor</td>
<td>Humayun javed</td>
<td>No. of Students contact hours</td>
<td>Lectures</td>
</tr>
<tr>
<td>Assessment Methods</td>
<td>Give precise details (No. and length of assignments, exams and weightings etc.)</td>
<td>Assignment given to each student individually and evaluated. Assignment 10% Mid Exam 30%; Final Exam 60%</td>
<td></td>
</tr>
</tbody>
</table>

Distribution of grade marks and other outcomes: (Adopt the grading system as required)

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Originally Regd.</th>
<th>Percent Grade A</th>
<th>Percent Grade B</th>
<th>Percent Grade C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>No. of Grades</th>
<th>Withdrawal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Students</td>
<td>23</td>
<td>7</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>30.43</td>
<td>34.78</td>
<td>34.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Graduate</td>
<td>Originally Regd.</td>
<td>Percent Grade A</td>
<td>Percent Grade B</td>
<td>Percent Grade C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>No. of Grades</td>
<td>Withdrawal</td>
<td>Total</td>
</tr>
<tr>
<td>No. of Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Overview Evaluation (Course Coordinator’s Comments)**

Feedback: First summarize then comment on Feedback received from:
Curriculum comment on the continuing on the appropriateness of the course curriculum in relation to the intended learning outcome (course objectives) and its compliance with the HEC approved /Revised National Curriculum guidelines.

The course was found very much appropriate and in line with curriculum and objectives.

Assessment comment on the continuing effectiveness of methods of assessment in relation to the intended learning outcomes (course objectives)
- To explain forest pests to students
- To explain up to date knowledge of insect pests with reference to range and forest

Enhancement comments on the implementation of changes proposed in earlier faculty review report)
Each year revised

(7) Outline any changes in the future delivery or structure of the course that this semester turns experience may prompt

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Muhammad Naeem</td>
<td>_______________________</td>
</tr>
<tr>
<td>Head of Department</td>
<td></td>
</tr>
<tr>
<td>Humayun javed</td>
<td>_______________________</td>
</tr>
<tr>
<td>Course Instructor</td>
<td></td>
</tr>
</tbody>
</table>
ANNEXURE 2

Proforma: 2

FACULTY COURSE REVIEW REPORT

(To be filled by each teacher at the time of course completion)

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<tr>
<th>Department</th>
<th>Entomology</th>
<th>Faculty</th>
<th>FC&amp;FS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course code</td>
<td>ENT- 504</td>
<td>Title</td>
<td>Insect biodiversity and evolution</td>
</tr>
<tr>
<td>Session</td>
<td>2009-2010</td>
<td>Semester</td>
<td>Autumn</td>
</tr>
<tr>
<td>Credit Value</td>
<td>Ent-3 (2-2)</td>
<td>6</td>
<td>Spring</td>
</tr>
<tr>
<td>Name of Course instructor</td>
<td>Imran Bodlah</td>
<td>No. of Students contact hours</td>
<td>Lectures 36</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Seminars</td>
</tr>
<tr>
<td>Assessment Methods</td>
<td>Assignment given to each student individually and evaluated. Assignment 10% Mid Exam 30%; Final Exam.60%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Distribution of grade marks and other outcomes: (Adopt the grading system as required)

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Originally Regd.</th>
<th>Percent Grade A</th>
<th>Percent Grade B</th>
<th>Percent Grade C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>No. of Grades</th>
<th>Withdrawal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Students</td>
<td>21</td>
<td>7 33%</td>
<td>11 52%</td>
<td>3 15%</td>
<td>--</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>21</td>
</tr>
<tr>
<td>Post-Graduate</td>
<td>Originally Regd.</td>
<td>Percent Grade A</td>
<td>Percent Grade B</td>
<td>Percent Grade C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>No. of Grades</td>
<td>Withdrawal</td>
<td>Total</td>
</tr>
</tbody>
</table>

Overview Evaluation (Course Coordinator’s Comments)

Feedback: First summarize then comment on Feedback received from:
Students/Staff consultative committee or Equivalent (if any)

Curriculum comment on the continuing on the appropriateness of the course curriculum in relation to the intended learning outcome (course objectives) and its compliance with the HEC approved/Revised National Curriculum guidelines.
- To provide knowledge about biodiversity of insect if various orders
- Practical knowledge of insect biodiversity

Assessment comment on the continuing effectiveness of methods of assessment in relation to the intended learning outcomes (course objectives)

Enhancement comments on the implementation of changes proposed in earlier faculty review report

(7) Outline any changes in the future delivery or structure of the course that this semester turns experience may prompt

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Imran Bodlah</td>
<td></td>
</tr>
<tr>
<td>Course Instructor</td>
<td></td>
</tr>
<tr>
<td>Dr. Muhammad Naeem</td>
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</tr>
<tr>
<td>Head of Department</td>
<td></td>
</tr>
</tbody>
</table>
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**Proforma: 2**

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<tr>
<th>Department</th>
<th>Entomology</th>
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<th>FC&amp;FS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course code</td>
<td>ENT-506</td>
<td>Title</td>
<td>Agricultural Pests And Their Management</td>
</tr>
<tr>
<td>Session</td>
<td></td>
<td>Semester</td>
<td>Autumn</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3(2-2)</td>
<td>6</td>
<td>Lecture 36</td>
</tr>
<tr>
<td>Name of Course instructor</td>
<td>DR. Asif Aziz</td>
<td>No. of Students contact hours</td>
<td>Assignment given to each student individually and evaluated. Assignment 10% Mid Exam 30%; Final Exam 60%</td>
</tr>
<tr>
<td>Assessment Methods</td>
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<td></td>
<td></td>
</tr>
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</table>

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<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Originally Regd.</th>
<th>Percent Grade A</th>
<th>Percent Grade B</th>
<th>Percent Grade C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>No. of Grades</th>
<th>Withdrawal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Students</td>
<td>21</td>
<td>3 14%</td>
<td>11 52%</td>
<td>7 33%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>21</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Post-Graduate</th>
<th>Originally Regd.</th>
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<th>Percent Grade B</th>
<th>Percent Grade C</th>
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<th>E</th>
<th>F</th>
<th>No. of Grades</th>
<th>Withdrawal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Students</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Overview Evaluation (Course Coordinator’s Comments)**

Feedback: First summarize then comment on Feedback received from:

---

117
Students/Staff consultative committee or Equivalent (if any)

Curriculum comment on the continuing on the appropriativeness of the course curriculum in relation to the intended learning outcome (course objectives) and its compliance with the HEC approved /Revised National Curriculum guidelines.

To give knowledge about the insects pests of various crops, fruits and vegetables

Assessment comment on the continuing effectiveness of methods of assessment in relation to the intended learning outcomes (course objectives)

Enhancement comments on the implementation of changes proposed in earlier faculty review report

(7) Outline any changes in the future delivery or structure of the course that this semester turns experience may prompt

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Asif Aziz</td>
<td>________________________</td>
</tr>
<tr>
<td>Course Instructor</td>
<td></td>
</tr>
<tr>
<td>Dr. Muhammad Naeem</td>
<td>________________________</td>
</tr>
<tr>
<td>Head of Department</td>
<td></td>
</tr>
</tbody>
</table>
ANNEXURE 2

Proforma: 2

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<th>Entomology</th>
<th>Faculty</th>
<th>FC&amp;FS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course code</td>
<td>Ent-502</td>
<td>Title</td>
<td>Insect physiology</td>
</tr>
<tr>
<td>Session</td>
<td>2009-2010</td>
<td>Semester</td>
<td>Autumn</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3(2-2)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Name of Course instructor</td>
<td>Dr. Asif aziz</td>
<td>No. of Students contact hours</td>
<td>Lectures 36</td>
</tr>
<tr>
<td>Assessment Methods</td>
<td>Assignment given to each student individually and evaluated.</td>
<td>Assignment 10% Mid Exam 30%; Final Exam.60%</td>
<td></td>
</tr>
</tbody>
</table>

Distribution of grade marks and other outcomes: (Adopt the grading system as required)

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Originally Regd.</th>
<th>Percent Grade A</th>
<th>Percent Grade B</th>
<th>Percent Grade C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>No. of Grades</th>
<th>Withdrawal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Students</td>
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<td>2</td>
<td>9.5</td>
<td>18</td>
<td>1 4.8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Post-Graduate</td>
<td>Originally Regd.</td>
<td>Percent Grade A</td>
<td>Percent Grade B</td>
<td>Percent Grade C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>No. of Grades</td>
<td>Withdrawal</td>
<td>Total</td>
</tr>
<tr>
<td>No. of Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overview Evaluation (Course Coordinator’s Comments)

Feedback: First summarize then comment on Feedback received from:
### Students (course Evaluation )Questionnaires

- ok

### External Examiner/Moderator (if any)

- 

### Students/Staff consultative committee or Equivalent (if any)

- 

### Curriculum comment on the continuing on the appropriateness of the course curriculum in relation to the intended learning outcome (course objectives ) and its compliance with the HEC approved /Revised National Curriculum guidelines.

To give basic knowledge about insect physiology

### Assessment comment on the continuing effectiveness of methods of assessment in relation to the intended learning outcomes (course objectives)

------

### Enhancement comments on the implementation of changes proposed in earlier faculty review report)

------

### (7) Outline any changes in the future delivery or structure of the course that this semester turns experience may prompt

----------

<table>
<thead>
<tr>
<th>Name</th>
<th>Dr. Asif aziz</th>
<th>Date: ______________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Instructor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Dr. Muhammad Naeem</th>
<th>Date: ______________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head of Department</td>
<td></td>
<td></td>
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</table>
ANNEXURE 2

Proforma: 2

FACULTY COURSE REVIEW REPORT

(To be filled by each teacher at the time of course completion)

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<thead>
<tr>
<th>Department</th>
<th>Entomology</th>
<th>Faculty</th>
<th>FC&amp;FS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course code</td>
<td>Ent-603</td>
<td>Title</td>
<td>Plant resistance to insect pests</td>
</tr>
<tr>
<td>Session</td>
<td>Semester 7</td>
<td>fall</td>
<td>Spring</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3(2-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name of Course instructor</td>
<td>Munir Ahmed</td>
<td>No. of Students contact hours</td>
<td>Lectures 36</td>
</tr>
<tr>
<td>Assessment Methods</td>
<td>Assignment given to each student individually and evaluated. Assignment 10% Mid Exam 30%; Final Exam.60%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Distribution of grade marks and other outcomes: (Adopt the grading system as required)

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Originally Regd.</th>
<th>Percent Grade A</th>
<th>Percent Grade B</th>
<th>Percent Grade C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>No. of Grades</th>
<th>Withdrawal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Students</td>
<td>39</td>
<td>8 20%</td>
<td>25 64%</td>
<td>6 15%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>39</td>
</tr>
<tr>
<td>Post-Graduate</td>
<td>Originally Regd.</td>
<td>Percent Grade A</td>
<td>Percent Grade B</td>
<td>Percent Grade C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>No. of Grades</td>
<td>Withdrawal</td>
<td>Total</td>
</tr>
</tbody>
</table>

Overview Evaluation (Course Coordinator’s Comments)

Feedback: First summarize then comment on Feedback received from:

| No. of Students | | | |
|-----------------|---|---|----|---|---|---|---|---|---|---|---|

121
Students/Staff consultative committee or Equivalent (if any)

Curriculum comment on the continuing on the appropriateness of the course curriculum in relation to the intended learning outcome (course objectives) and its compliance with the HEC approved /Revised National Curriculum guidelines.

- To enable the students for incorporation of crop characters as control management
- To strengthen their knowledge about plant characters and their interaction in pest management

Assessment comment on the continuing effectiveness of methods of assessment in relation to the intended learning outcomes (course objectives)

Enhancement comments on the implementation of changes proposed in earlier faculty review report)

(7) Outline any changes in the future delivery or structure of the course that this semester turns experience may prompt

Name: Munir Ahmed  Date: ________________
Course Instructor

Name: Dr. Muhammad Naeem  Date: ________________
Head of Department
### ANNEXURE 2

**Proforma: 2**

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<thead>
<tr>
<th>Department</th>
<th>Entomology</th>
<th>Faculty</th>
<th>FC&amp;FS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course code</td>
<td>Ent-507</td>
<td>Title</td>
<td>Insect pests of household, man and animals</td>
</tr>
<tr>
<td>Session</td>
<td>2009-10</td>
<td>Semester</td>
<td>fall</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3(2-2)</td>
<td>5</td>
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</tr>
<tr>
<td>Name of Course instructor</td>
<td>Dr. Farooq Nasir</td>
<td>No. of Students contact hours</td>
<td>Lectures 36</td>
</tr>
<tr>
<td>Assessment Methods</td>
<td>Assignment given to each student individually and evaluated. Assignment 10% Mid Exam 30%; Final Exam 60%</td>
<td></td>
<td></td>
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</tbody>
</table>

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<th>F</th>
<th>No. of Grades</th>
<th>Withdrawal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Students</td>
<td>21</td>
<td>10</td>
<td>11</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>21</td>
</tr>
<tr>
<td>Post-Graduate</td>
<td>Originally Regd.</td>
<td>Percent Grade A</td>
<td>Percent Grade B</td>
<td>Percent Grade C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>No. of Grades</td>
<td>Withdrawal</td>
<td>Total</td>
</tr>
<tr>
<td>No. of Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Overview Evaluation (Course Coordinator’s Comments)**

Feedback: First summarize then comment on Feedback received from:
### Students (course Evaluation) Questionnaires

ok

### External Examiner/Moderator (if any)


### Students/Staff consultative committee or Equivalent (if any)


### Curriculum comment on the continuing on the appropriateness of the course curriculum in relation to the intended learning outcome (course objectives) and its compliance with the HEC approved /Revised National Curriculum guidelines.

To give basic knowledge about various insect pests of man, animals and household and their management

### Assessment comment on the continuing effectiveness of methods of assessment in relation to the intended learning outcomes (course objectives)


### Enhancement comments on the implementation of changes proposed in earlier faculty review report


### (7) Outline any changes in the future delivery or structure of the course that this semester turns experience may prompt


### Name : Dr. Farooq Nasir  
Course Instructor  
Date: ______________________

### Name : Dr. Muhammad Naeem  
Head of Department  
Date: ______________________
ANNEXURE 2

Proforma: 2

FACULTY COURSE REVIEW REPORT

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<th>Department</th>
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<th>Faculty</th>
<th>FC&amp;FS</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>Session</td>
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<td>Semester</td>
<td>Autumn</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3(2-2)</td>
<td></td>
<td>Spring</td>
</tr>
<tr>
<td>Name of Course instructor</td>
<td>Humyun javed</td>
<td>No. of Students contact hours</td>
<td>Others (Please state)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lectures 36</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Seminars</td>
<td></td>
</tr>
<tr>
<td>Assessment Methods</td>
<td>Assignment given to each student individually and evaluated. Assignment 10% Mid Exam 30%; Final Exam 60%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Distribution of grade marks and other outcomes: (Adopt the grading system as required)

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Originally Regd.</th>
<th>Percent Grade A</th>
<th>Percent Grade B</th>
<th>Percent Grade C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>No. of Grades</th>
<th>Withdrawal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Students</td>
<td>21</td>
<td>9 43%</td>
<td>12 57%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>21</td>
</tr>
<tr>
<td>Post-Graduate</td>
<td>Originaly Regd.</td>
<td>Percent Grade A</td>
<td>Percent Grade B</td>
<td>Percent Grade C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>No. of Grades</td>
<td>Withdrawal</td>
<td>Total</td>
</tr>
<tr>
<td>No. of Students</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Overview Evaluation (Course Coordinator’s Comments)

Feedback: First summarize then comment on Feedback received from:

Students (course Evaluation) Questionnaires
Curriculum comment on the continuing appropriateness of the course curriculum in relation to the intended learning outcome (course objectives) and its compliance with the HEC approved /Revised National Curriculum guidelines.

To give basic knowledge about the identification and management of Stored product pests

Assessment comment on the continuing effectiveness of methods of assessment in relation to the intended learning outcomes (course objectives)

Enhancement comments on the implementation of changes proposed in earlier faculty review report

(7) Outline any changes in the future delivery or structure of the course that this semester turns experience may prompt

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Date</td>
</tr>
<tr>
<td>Humyn javed</td>
<td></td>
</tr>
<tr>
<td>Course Instructor</td>
<td></td>
</tr>
<tr>
<td>Dr. Muhammad Naeem</td>
<td></td>
</tr>
<tr>
<td>Head of Department</td>
<td></td>
</tr>
</tbody>
</table>
### Survey of Graduating Students

*(To be filled out by graduating students in last semester/year before the award of degree)*

The survey seeks graduating students' input on the quality of education they received in their program and the level of preparation they had at university. The purpose of this survey is to assess the quality of the academic programs. We seek your help in completing this survey.

<table>
<thead>
<tr>
<th>A: Very satisfied</th>
<th>B: Satisfied</th>
<th>C: Uncertain</th>
<th>D: Dissatisfied</th>
<th>E: Very dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The work in the program is too heavy and induces a lot of pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>2. The program is effective in enhancing team-working abilities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>3. The program administration is effective in supporting learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>4. The program is effective in developing analytical and problem solving skills.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>5. The program is effective in developing independent thinking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>6. The program is effective in developing written communication skills.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>7. The program is effective in developing planning abilities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>8. The objectives of the program have been fully achieved</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>9. Whether the contents of curriculum are advanced and meet program objectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>10. Faculty was able to meet the program objectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
</tbody>
</table>
11. Environment was conducive for learning

   A   B   C   D  E

12. Whether the infrastructure of the department was good

   A   B   C   D  E

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

   A   B   C   D  E

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

   A   B   C   D  E

Answer question 9 if applicable.

9. The internship experience is effective in enhancing
   a. Ability to work in teams (A) (B) (C) (D) (E)
   b. Independent thinking (A) (B) (C) (D) (E)
   c. Appreciation of ethical Values (A) (B) (C) (D) (E)
   d. Professional development (A) (B) (C) (D) (E)
   e. Time management skills (A) (B) (C) (D) (E)
   f. Judgment (A) (B) (C) (D) (E)
   g. Discipline (A) (B) (C) (D) (E)
   h. The link between theory and practice (A) (B) (C) (D) (E)

10. What are the best aspects of your program?

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

11. What aspects of your program could be improved?

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

You may use additional sheets for questions 10 & 11 if needed.
Co-Supervisor: ___________________  Date: ____________
Co-Supervisor: ___________________  Date: ____________

Head of Department Comments:

Signature: ______________________  Date: ____________

Director, Board of Research Studies (or equivalent) Comments:

Signature: ______________________  Date: ____________

Dean/Director, QEC Action: (including monitoring of Follow-up action) Date: ____________
Annexure -5

Proforma 5

Faculty Survey
(To be submitted on annual basis by each faculty member)

The purpose of this survey is to assess faculty members’ satisfaction level and the effectiveness of programs in place to help them progress and excel in their profession. We seek your help in completing this survey and the information provided will be kept in confidence. Indicate how satisfied are you with each of the following aspects of your situation at your department?


1. Your mix of research, teaching and community service.
   A  B  C  D  E

2. The intellectual stimulation of your work.
   A  B  C  D  E

3. Type of teaching / research you currently do.
   A  B  C  D  E

4. Your interaction with students.
   A  B  C  D  E

5. Cooperation you receive from colleagues.
   A  B  C  D  E

6. The mentoring available to you.
   A  B  C  D  E

7. Administrative support from the department.
   A  B  C  D  E

8. Providing clarity about the faculty promotion process.
   A  B  C  D  E

9. Your prospects for advancement and progress through ranks.
   A  B  C  D  E

10. Salary and compensation package.
    A  B  C  D  E
11. Job security and stability at the department.
   A       B       C       D       E
12. Amount of time you have for yourself and family.
   A       B       C       D       E
13. The overall climate at the department.
   A       B       C       D       E
14. Whether the department is utilizing your experience and knowledge
   A       B       C       D       E
15. What are the best programs / factors currently available in your department that
    enhance your motivation and job satisfaction:
    ____________________________________________
    ____________________________________________
    ____________________________________________
    ____________________________________________
    ____________________________________________
    ____________________________________________
16. Suggest programs / factors that could improve your motivation and job satisfaction?
    ____________________________________________
    ____________________________________________
    ____________________________________________
    ____________________________________________
    ____________________________________________
    ____________________________________________

Information about faculty member

i. Academic rank:
   A: Professor   B: Associate Professor   C: Assistant Professor   D: Lecturer
   E: Other

ii. Years of service:
    A: 1-5   B: 6-10   C: 11-15   D: 16-20   E: >=20

Name: ____________________ Signature: ____________________ Date: ____________
Alumni Survey

(To be filled by Alumni - after the completion of each academic year)

The purpose of this survey is to obtain alumni input on the quality of education they received and the level of preparation they had at University. The purpose of this survey is to assess the quality of the academic program. We seek your help in completing this survey.

A: Excellent  B: Very good  C: Good  D: Fair  E: Poor

1. Knowledge
1. Math. Science. Humanities and professional discipline, (if applicable)
   (A) (B) (C) (D) (E)
2. Problem formulation and solving skills
   (A) (B) (C) (D) (E)
3. Collecting and analyzing appropriate data
   (A) (B) (C) (D) (E)
4. Ability to link theory to practice.
   (A) (B) (C) (D) (E)
5. Ability to design a system component or process
   (A) (B) (C) (D) (E)
6. IT knowledge
   (A) (B) (C) (D) (E)

II Communication Skills:
1. Oral communication
   (A) (B) (C) (D) (E)
2. Report writing
   (A) (B) (C) (D) (E)
3. Presentation skills
   (A) (B) (C) (D) (E)

III Interpersonal Skills:
1. Ability to work in teams.
   (A) (B) (C) (D) (E)
2. Ability to work in arduous /Challenging situation
   (A) (B) (C) (D) (E)
3. Independent thinking
   (A) (B) (C) (D) (E)
4. Appreciation of ethical Values
   (A) (B) (C) (D) (E)

IV Management /leadership Skills:
1. Resource and Time management skills
   (A) (B) (C) (D) (E)
2. Judgment
   (A) (B) (C) (D) (E)
3. Discipline
   (A) (B) (C) (D) (E)

V General Comments:
Please make any additional comments or suggestions, which you think would help strengthen our programs. (New courses that you would recommend and courses that you did not gain much from)

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
VI. Career Opportunities

VII. Department Status
1. Infrastructure (A) (B) (C) (D) (E)
2. Faculty (A) (B) (C) (D) (E)
3. Repute at National level (A) (B) (C) (D) (E)
4. Repute at international level (A) (B) (C) (D) (E)

VIII. Alumni Information
1. Name (Optional)________________________________________________________
2. Name of organization____________________________________________________
3. Position in organization___________________________________________________
4. Year of graduation________________________________________________________
Annexure -8

Employer Survey

(To be filled in by Employer - after the completion of each academic year)

The purpose of this survey is to obtain employers' input on the quality of education University of Arid Agriculture, Rawalpindi is providing and to assess the quality of the academic program. The survey is with regard to University of_________ graduates employed at your organization. We seek your help in completing this survey.

A: Excellent  B: Very good  C: Good  D: Fair  E: Poor

I. Knowledge.
   1. Math, Science, Humanities and professional discipline, (if applicable)  (A) (B) (C) (D) (E)
   2. Problem formulation and solving skills  (A) (B) (C) (D) (E)
   3. Collecting and analyzing appropriate data  (A) (B) (C) (D) (E)
   4. Ability to link theory to Practice  (A) (B) (C) (D) (E)
   5. Ability to design a system component or process (A) (B) (C) (D) (E)
   6. Computer knowledge. (A) (B) (C) (D) (E)

II. Communication Skills
   1. Oral communication  (A) (B) (C) (D) (E)
   2. Report writing  (A) (B) (C) (D) (E)
   3. Presentation skills  (A) (B) (C) (D) (E)

III. Interpersonal Skills
   1. Ability to work in teams  (A) (B) (C) (D) (E)
   2. Leadership  (A) (B) (C) (D) (E)
   3. Independent thinking  (A) (B) (C) (D) (E)
   4. Motivation  (A) (B) (C) (D) (E)
   5. Reliability  (A) (B) (C) (D) (E)
   6. Appreciation of ethical values  (A) (B) (C) (D) (E)

IV. Work skills
   1. Time management skills  (A) (B) (C) (D) (E)
   2. Judgment  (A) (B) (C) (D) (E)
   3. Discipline  (A) (B) (C) (D) (E)
V. General Comments

Please make any additional comments or suggestions, which you think would help strengthen our programs for the preparation of graduates who will enter your field. Did you know as to what to expect from graduates?

_______________________________
_______________________________
_______________________________
_______________________________
_______________________________
_______________________________
_______________________________
_______________________________

VI. Information About Organization

1. Organization Name______________________________

2. Type of Business______________________________

3. Number of Graduates (specify the program) in your Organization:
# Faculty Resume

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Personal**

*May include address(s) and phone number(s) and other personal information that the candidate feels is pertinent.*

**Experience**

*List current appointment first, each entry as follows:*

*Date, Title, Institution.*

**Honor and Awards**

*List honors or awards for scholarship or professional activity.*

**Memberships**

*List memberships in professional and learned Societies, indicating offices held, committees, or other specific assignments.*

**Graduate Students**

*List supervision of graduate students, postdocs and undergraduate honors theses showing:*

<table>
<thead>
<tr>
<th>Years</th>
<th>Degree</th>
<th>Name</th>
</tr>
</thead>
</table>

*Show other information as appropriate and list membership on graduate degree committees.*

**Honour Students**

<table>
<thead>
<tr>
<th>Service Activity</th>
</tr>
</thead>
</table>

*List University and public service activities.*
<table>
<thead>
<tr>
<th>Brief Statement of Research Interest</th>
<th>May be as brief as a sentence or contain additional details up to one page in length.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Publications</strong></td>
<td>List publications in standard bibliographic format with earliest date first.</td>
</tr>
<tr>
<td></td>
<td>o Manuscripts accepted for publication should be included under appropriate category as &quot;in press;&quot;</td>
</tr>
<tr>
<td></td>
<td>o Segment the list under the following standard headings:</td>
</tr>
<tr>
<td></td>
<td>• Articles published by refereed journals.</td>
</tr>
<tr>
<td></td>
<td>• Books.</td>
</tr>
<tr>
<td></td>
<td>• Scholarly and/or creative activity published through a refereed electronic venue.</td>
</tr>
<tr>
<td></td>
<td>• Contribution to edited volumes.</td>
</tr>
<tr>
<td></td>
<td>• Papers published in refereed conference proceedings.</td>
</tr>
<tr>
<td></td>
<td>• Paper or extended abstracts published in conference proceedings. (refereed on the basis of abstract)</td>
</tr>
<tr>
<td></td>
<td>• Articles published in popular press.</td>
</tr>
<tr>
<td></td>
<td>• Articles appearing in in-house organs.</td>
</tr>
<tr>
<td></td>
<td>• Research reports submitted to sponsors.</td>
</tr>
<tr>
<td></td>
<td>• Articles published in non-refereed journals.</td>
</tr>
<tr>
<td></td>
<td>• Manuscripts submitted for publication. (include where and when submitted.)</td>
</tr>
<tr>
<td><strong>Research Grants and Contracts.</strong></td>
<td><strong>Entries should include:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Date</strong>  <strong>Title</strong>  <strong>Agency / Organization</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total Award Amount</strong></td>
</tr>
<tr>
<td></td>
<td>Segment the list under following headings:</td>
</tr>
<tr>
<td></td>
<td>• Completed</td>
</tr>
<tr>
<td></td>
<td>• Funded and in progress</td>
</tr>
<tr>
<td></td>
<td>• In review</td>
</tr>
<tr>
<td><strong>Other Research or Creative Accomplishments</strong></td>
<td><strong>List patents, software, new products developed, etc.</strong></td>
</tr>
<tr>
<td><strong>Selected Professional Presentations</strong></td>
<td></td>
</tr>
</tbody>
</table>
Annexure -10

**Teacher Evaluation Form**
(To be filled by the student)

**Course Title and Number:** ________________________________

**Name of Instructor:** ____________________________ **Semester** _____________

**Department:** ____________________________ **Degree** _________________

Use the scale to answer the following questions below and make comments

A: Strongly Agree  B: Agree  C: Uncertain  D: Disagree  E: Strongly Disagree

<table>
<thead>
<tr>
<th>Instructor:</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The Instructor is prepared for each class</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>2. The Instructor demonstrates knowledge of the subject</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>3. The Instructor has completed the whole course</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>4. The Instructor provides additional material apart from the textbook</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>5. The Instructor gives citations regarding current situations with reference to Pakistani content.</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>6. The Instructor communicates the subject matter effectively</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>7. The Instructor shows respect towards students and encourages class participation</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>8. The Instructor maintains an environment that is conducive to learning</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>9. The Instructor arrives on time</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>10. The Instructor leaves on time</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>11. The Instructor is fair in examination</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>12. The Instructor returns the graded scripts etc. in a reasonable amount of time</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>13. The Instructor was available during the specified office hours and for after class consultations</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>14. Course:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. The Subject matter presented in the course has increased your knowledge of the subject</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>16. The syllabus clearly states course objectives requirements, procedures and grading criteria</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>17. The course integrates theoretical course concepts with real-world applications</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>18. The assignments and exams covered the materials presented in the course</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>19. The course material is modern and updated</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
</tbody>
</table>
Annexure-XI: Detailed Course Contents of B. Sc. (HONS.) degree in Entomology

ENT-401 INTRODUCTORY ENTOMOLOGY 2(1-2)

THEORY:

Introduction; phylum Arthropoda and its classification; external and internal morphology and physiology with particular reference to a typical insect; metamorphosis and its types; insect classification, salient characters of insect orders and families of economic importance with examples of each family.

PRACTICAL:

Characters of classes of Arthropoda; Collection and preservation of insects; external and internal morphology of typical insects; temporary mounts of different types of appendages of insects; types of metamorphosis.

BOOKS RECOMMENDED:

ENT-402 APPLIED ENTOMOLOGY 3(2-2)

Causes of success and economic importance of insects; principles and methods of insect control i.e. cultural, biological, physical, mechanical, reproductive, legislative and chemical; introduction to IPM; insecticides, their classification, formulations and application equipment; identification, life histories, mode of damage and control of important insect pests of various crops, fruits, vegetables, stored grains, household, termites and locust; entomological industries: apiculture, sericulture and lac-culture.
PRACTICALS

Identification and mode of damage of insect pests of various crops, fruits, vegetables, stored grains and household; insecticide formulations, their dilutions and safe handling; use of application equipment, practical instructions in apiculture, sericulture and lac-culture.

BOOKS RECOMMENDED


ENT-501 INSECT MORPHOLOGY 3(2-2)

THEORY:

Introduction; integument and its derivatives; body regions; segmentation, sclerites, sulci and appendages of head, thorax and abdomen in different insect orders; endoskeleton and internal organ systems; exocrine and endocrine organs.

PRACTICAL:

Structure of integument and its derivatives; comparative external and internal morphology of different insect orders. Preparation for illustrations.

BOOKS RECOMMENDED:

ENT-502  INSECT PHYSIOLOGY  3(2-2)

THEORY:
Introduction; Embryonic and Post-embryonic Development; Physiology of integument, digestive, respiratory, circulatory, excretory, reproductive, muscular and nervous systems; Sense organs and perception; Production and Function of hormones and pheromones.

PRACTICAL:
Study of cuticular proteins; physiology of digestion, respiration, circulation, excretion, reproduction, musculature and sensation; Hormones and pheromones.

BOOKS RECOMMENDED:

ENT-503  PRINCIPLES OF INSECT TAXONOMY  3(2-2)

THEORY:
Introduction; history, functions and concepts; tasks of a taxonomist; taxonomic categories; taxonomic procedures: collection, samples and methods of sampling, identification, taxonomic discrimination, taxonomic characters, variations in population; descriptions, taxonomic keys, speciation and phylogenies, preparation of taxonomic paper; code of zoological nomenclature; introduction to numerical taxonomy and cladistics.

PRACTICAL:
Methods of collection, preservation and labelling of insects; preparation of taxonomic keys; identification of insects with taxonomic keys; cataloguing and writing descriptions of identified insects; preparation of phenograms and phylogenetic trees.
BOOKS RECOMMENDED:

ENT-504 INSECT BIODIVERSITY AND EVOLUTION 3(2-2)

THEORY:
Introduction; schemes of classification; phylogenetic affinities of different orders; insect adaptation in various geographical regions; insect adaptive radiation and diversity classification of insect orders up to family level with particular reference to insect fauna of Pakistan; progress and extinction. Gene library.

PRACTICAL:
Assessment of existing phylogenetic arrangement of insect orders; collection and identification of insects up to family level with the help of taxonomic keys.

BOOKS RECOMMENDED:
ENT-505 INSECT ECOLOGY AND BEHAVIOUR  3(2-2)

THEORY:

Introduction; divisions of ecology; habitat and niche; intra and interspecific interactions; natural and agro-ecosystems; flow of energy in ecosystem; trophic relations: Food chain, food web and food mesh concepts; ecological succession; population and its characteristics; introduction to life tables. Types of behavior: reflexes, kineses and taxes; learning; periodicity; patterns of behavior; communications; visual; auditory; tactile; chemical. Territoriality; control of behavior; nervous; endocrine and genetic; biological functions of behavior, host finding, feeding and reproductive, escape, defence, offence and predation; dispersal and migration; dormancy. Diversity indices.

PRACTICAL:

Maintenance and measurement of temperature, humidity and light with different instruments; population estimation and construction of life tables.

BOOKS RECOMMENDED:

ENT-506 AGRICULTURAL PESTS AND THEIR MANAGEMENT 3(2-2)

THEORY:

Introduction; identification, distribution, host plants, biology, damage and control of insect and mite pests of field crops, vegetables and orchards; other important vertebrate and invertebrate pests.

PRACTICAL:

Collection and identification of pests of agricultural importance and their damage; demonstration of control measures.

BOOKS RECOMMENDED:

ENT-507  INSECT PESTS OF HOUSEHOLD, MAN AND ANIMALS  3(2-2)

THEORY:

Introduction; identification, biology and control of different insect pests like ants, termites, cockroaches, silver-fish, cricket, powder-post and carpet beetles, cloth-moths, psocids, lice, bedbugs, fleas, mosquitoes, house flies, sand flies, stable flies, flesh flies, blow flies, tse tse flies, black flies, midges etc.

PRACTICAL:

Collection, identification, and demonstration of control of different insect pests.

BOOKS RECOMMENDED:

ENT-508  STORED PRODUCTS PESTS AND THEIR MANAGEMENT  3(2-2)

THEORY:

Introduction; Identification, biology and control of different stored products pests. storage principles; types of storages; Factors affecting grain and other products in storages; stored product losses and their prevention.

PRACTICAL:

Visits to the godowns and demonstration of sampling methods and estimation of losses; collection, identification and control of different stored products pests.

BOOKS RECOMMENDED:
Rees, D. Insects of Stored Products.

ENT-509 BENEFICIAL INSECTS 3(2-2)

THEORY:

Introduction; insects of medicinal, food, aesthetic value; insect pollinators and environmental indicators; scavengers, entomophagous and weed-feeding insects; entomological industries; apiculture, sericulture and lac-culture.

PRACTICAL:

Practical instructions in apiculture, sericulture and lac-culture; collection and identification of pollinators, scavengers, entomophagous, medicinal, food, weed feeding and other beneficial insects.

BOOKS RECOMMENDED

ENT-601 PEST FORECASTING AND MANAGEMENT 4(2-4)
THEORY:
Introduction; Population sampling; Population fluctuation & its measurement; Different methods of pest scouting & forecasting; Principles & requirements of Pest Management; Losses caused by insect pests to different crops; Methods of control: cultural, physical, mechanical, legislative, chemical, biological, microbial & genetical alongwith antimetabolites, feeding deterrents, hormones and pheromones; Concept of Integrated Pest Management (IPM); Economics of pest management.
PRACTICAL:
Demonstration of cultural practices and different methods of pest scouting and forecasting; Nature and extent of damage; Assessment of crop losses by different methods; Determination of economic threshold of insects on different crops; identification of important bio-control agents; Installation of light and pheromone traps; Computation, preparation and field application of insecticide formulations; Familiarity with irradiation techniques.
BOOKS RECOMMENDED:

ENT-602 INTERNSHIP 20(0-40)
ENT-603 INSECT ECOLOGY AND BEHAVIOUR 4(3-2)

THEORY:
Introduction; Divisions of ecology; Habitat and niche; Intra and inter-specific interactions; Natural and agro-ecosystems; Flow of energy in ecosystem; Trophic relations: Food chain, food web and food mesh concepts; Ecological succession; population and its characteristics; Introduction to life tables. Types of behaviour: reflexes, kineses and taxes; learning; Periodicity; Patterns of behaviour; communications: Visual, auditory, tactile, chemical. Territoriality; Control of behaviour: nervous, endocrine and genetic; biological functions of behaviour: host finding, feeding and reproductive; escape, defence, offence and predation; Dispersal and migration; Dormancy.

PRACTICAL:
Maintenance and measurement of Temperature, Humidity and light with different instruments; population estimation and construction of life tables. Study of types and patterns of insect behaviour under laboratory and field conditions.

BOOKS RECOMMENDED:
ENT-605 INSECTICIDES AND THEIR APPLICATION 3(2-2)

THEORY:
Introduction; Nomenclature, classification, formulations, compatibility, physico-chemical properties, mode of action, residues, hazards and safety measures of insecticides; Structure and working of various types of hand and power operated equipment for insecticide application.

PRACTICAL:
Computation, Preparation and Field Application of different formulations of insecticides; identification, Classification, Handling and Maintenance of Application Equipment.

BOOKS RECOMMENDED:

ENT-607 RANGE AND FOREST ENTOMOLOGY 3(2-2)

THEORY:
Importance of range in forest entomology in range land and forest ecosystem; insect pests on range and forest trees, their identification, distribution, host plants, biology, mode of damage and control. Competition and complementary role of insects with range livestock.

PRACTICAL:
Collection, preservation and identification of insects pests of forest trees. Practical study of mode of damage and demonstration of control methods.

BOOKS RECOMMENDED:

ENT-609 PROJECT PLANNING AND SCIENTIFIC WRITING 2(1-2)

THEORY:
Entomological literature; Internet Sources of entomological information; layout of experiment; collection; tabulation, analysis and interpretation of research data; instruction in research paper monograph and catalogue writing.

PRACTICAL:
Library exercises in internet sources of Entomological information; collection and analysis of data on field experiment.

BOOKS RECOMMENDED:

ENT-611 AGRICULTURE & ENVIRONMENTAL POLLUTION 3(3-0)

THEORY:
Introduction; General concept of pollutants; Sources and nature of pollutants; Environmental deterioration, its effect on agriculture; Green house effect; Types of pollution with reference to agriculture and forestry; Effect of pollution on soil, water, air, plants, living organisms, etc.; management of pollution.
INSTITUTIONAL FACILITIES

The institution must have the infrastructure to support new trends in learning such as e-learning

- Electronic library books and journals are available for learning purpose.
- Insufficient facilities regarding the infrastructure to support new trends in learning are prevalent
- The library must possess an up-to-date technical collection relevant to the program and must be adequately staffed with professional personnel.
- Insufficient library’s technical collection of books
- Recommended books, relevant journals of the programs are not available to the students
- However, this aspect needs to be strengthened in number and space.

Class rooms must be adequately equipped and offices must be adequate to enable faculty to carry out their responsibilities.