

**PIR MEHR ALI SHAH
ARID AGRICULTURE UNIVERSITY
RAWALPINDI**



SELF ASSESSMENT REPORT 2010-12
Department of Entomology
PhD in Entomology

Program Team

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Introduction

PhD in Entomology was started in 1998. Presently the PhD students are not only doing their studies and research on their own but most of these are fully funded by different programmes of the Higher Education Commission, Pakistan.

Agriculture mainly comprises plant and animals sources and their commodities. These plants as crops and animals as livestock need proper care and protection from the environmental factors. Out of biotic factors, insects are the main organisms which create problems and need to be managed. Entomology Department helps not only under these situations for pest management but also for community protection against pests of buildings, households, stored grains and aesthetic value products. It serves as a source of human resource development to meet the need of the growing world. Considering the main mission and objectives of the program, periodical review of its curriculum to remain up to date and meet the needs of the time in proper way.

Regular workshops for hands on trainings and career building involving students in different activities like apiculture and bomiculture presentation stalls, silkworm rearing, exhibition of insect made ornamental showpieces, insect as insect diversity exhibition are carried out. Other activities involve direct field surveys to get acquaintance with the problems faced by the agriculture community related to pest management, stored grain pest control, household and building pests. Their vision to utilize the beneficial insects including different insect pollinators has also been widened through utilizing indigenous techniques for their multiplication and conservation. Fundings from different sources like Higher Education Commission, Pakistan Science Foundation and University projects help in the availability of sufficient resources for experimentation and later provision of these techniques for the farmers. Quality education and research is also actively monitored and improved with the periodical interaction of the Quality Enhancement Cell of the University. Their recommendations also helped to improve the standard of teaching and research and achievement of the department objectives.

This Self Assessment Report (SAR) comprises eight sections as desired from the programme mission and objectives, curriculum development, laboratories, student support and guidance, process control, faculty characteristics and institutional facilities and support by the university.

Criterion-1: Programme Mission, Objectives and Outcomes

Entomology is the study of insects with beneficial as well as harmful effects to mankind. These have been on earth long before us and competed well for their survival and fitness. Harmful insects cause economic losses due to their damages to crops, livestock, buildings and our living environment. There, however, exist insects from which we get benefits. We not only use them to control the harmful insect as biocontrol agents but also help in crop pollination and conservation of environment through decomposition of dead organisms to biomass. The field of Entomology has become so wide that it not only works in as single but in combination with other applied sciences like physics for aerodynamics, biochemistry for food constituents, medicine and nanotechnology for pest control and less residue application of different chemicals to conserve the environment.

Advanced courses taught at the PhD level help them to identify the latest problems of their field and to develop different strategies for the well in time management. Advanced teaching methods and innovative analytical techniques for insect pest problem help to develop the solving attitudes and techniques. Looking for the solution of the problems faced by the society regarding involvement of insect guide to formulate and establish methods for their sustainable management.

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

Establishing standards for quality of strong background for the Entomology professionals and their recent technical knowledge is the key of this program. Challenges related to insect pests management and the beneficial insects to produce valuable products like honey and silk, natural biopesticides based on plant, bacteria, viruses like *Bacillus thuringiensis*, nuclear polyhedroviruses etc thereby helping in development of agricultural and industrial economy. Production of crop pollinators for commercial high price crops is another advantage of this field. These useful products can directly help to improve not only the quality of humans but indirectly improves the economy of the country.

Documented measurable objectives

The department is offering Ph.D. degrees in Entomology discipline to cater highly skilled local manpower for future needs at national and international level. Research areas especially related to entomological issues of the agricultural sector at national level of arid agriculture and international level are mostly selected for research to establish link in university and the commercial companies.

Objectives of Entomology program are given as under.

1. To equip them with necessary theoretical and practical knowledge relating to the field of Entomology and to enable them to apply this knowledge for the benefit of mankind
2. To train the students about application of the latest techniques of IPM (Integrated Pest Management) program with reduced environmental pollution and uplifting of human health
3. To ensure application of entomological knowledge in a systematic way to reduce cost incurred on plant protection techniques especially on pesticides by adopting alternatives
4. To prepare them to work in an R &D environment effectively and improve their productivity
5. To enable them to be a good human and an efficient, job-oriented and dedicated researcher and worker with a reasonable earning to lead a prosper life

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 related to present day Entomology problems and their solutions
- Establishing and strengthening well-equipped specialized research laboratories to conduct research of applied as well as basic approach with problem oriented approach
- Publication of review papers, popular articles and scientific papers in well reputed journals, editing of books, manuals etc

- Execution of research projects funded by the universities and other agencies including Higher Education Commission, Pakistan Science Foundation, PARB, FAO etc
- Provocation of linkages with national and international research organizations and commercial sector to solve indigenous problems and enhance their production and better economic growth
- To establish interaction with the farmers, research organisations and extension workers for efficient availability of findings at farm level

PROGRAM OBJECTIVES 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
- Periodic review of the target achievements at department level

Table: 1 Program Objectives Assessment

S. #	Objective	How Measured	When Measured	Improvement Identified	Improvement made
1	Improvement and intensification of Entomology at AAUR	Getting views of PhD scholars based on identification of insect pests both at adult and larval stages infesting crop in the field Apply management practices for pest problems	It is a regular process as per requisite	Establishing an insect pest advisory service at the department Development of Techniques of guidelines are required to be improved	For insect pest identification identified specimen are preserved Biosystematics laboratory is well established for quick identification of pests Field applications are performed for their application
2	To communicate fundamental and practical knowledge to the graduate and Post-graduate students	Assessing the previous understanding of students through exams/tests and student response	During the already established regular and periodic exam system by the university	Incorporation of new techniques in entomology course work and accordingly some new subjects are required to be incorporated in the syllabus	Improvement of existing courses as per requisite Communication system is made better by developing the class lectures and using audio visual aids
3	Supervision of students in research/ internship	Evaluating the students research/internship project topics, and thesis/reports by the concerned committees/evaluators, synopsis and thesis defence seminars etc	Existing evaluation procedure, prior to initiate the projects and at the completion of the research thesis	Strong scrutiny system for topics and synopsis evaluation Students to deliver seminars and prepare reports	Seminars, presentation sessions and class discussions, were organized for communication proficiency improvement

4	Incorporation of associated fields	Reviewed by concerned departmental or faculty level committees, and councils (academic council)	In the periodic meetings of the concerned bodies	Allied topics/courses are suggested in the light of university/ HEC guidelines/recommendations.	New development in related fields are incorporated for awareness and exposure regarding the field
5	Foresee the new lines of education and areas of research	Through surveillance of crop pests, judging manpower, communication to evaluate farmers opinions and review of national, regional and international literature	Regular feature	Latest subjects should be incorporated in syllabus, to study the new challenges	Endorsement of new syllabus to incorporate modern techniques
6	Develop new areas of research especially at molecular level and innovation oriented	Special problems and seminars organized with problems oriented ideas and application	During course work and research work	Laboratories and sources of informations are now well developed with help of HEC	Established functional laboratories for applied research work to meet agriculture industry needs

Expected Outcomes of the Programme:

1. The scholars must be able to understand the entomological issues related to pests, their identification, management and environmental problems and potential to resolve these issues.
2. The scholars 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 scholars should have ample capacity to analyze the pest problem and to recommend an adequate and effective pest management package suitable for the situation keeping in view cost effectiveness and environmental safety.
4. The scholars must have capability to take up research on advanced level research on the problems relating to applied and economic entomology.
5. The scholars shall gain advanced theoretical and practical knowledge of the subject helping them to advance in their professional life and higher studies.
6. The scholars 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.
7. The scholars shall have potential to contribute in national economy and development through their research projects and development initiatives.

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

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

		Outcomes							
Objectives		1	2	3	4	5	6	7	
	1	++	+++	++	++	++	++	++	++
	2	+++	+++	+++	+++	++	++	++	++
	3	++	++	+++	+++	+	++	++	++
	4	+++	++	+++	+++	+++	+	++	++
	5	++	++	++	+++	++	++	++	++
	6	+++	++	++	++	++	+	++	++

+ = Moderately satisfactory

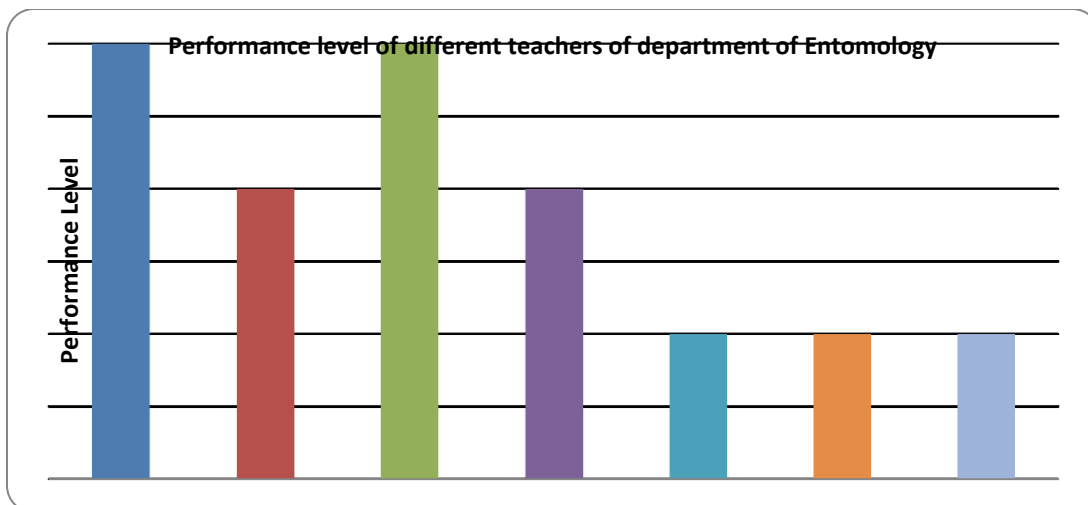
++ = Satisfactory

+++ = Highly satisfactory

Programme Outcome Measurement

Performance of the most concerned achievement of the stipulated objectives, information was gathered from through prescribed proformae which were filled in by the respective class students, respective faculty memebtrs, department alumni, and the graduates working in different organizations, research institutes etc.

In order to complete this activity, 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 prorformas were filled in by the respective class students, respective faculty memebtrs, 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. During the reporting period there were 7 teachers in the department which are numbered as 1-7. They are, Dr. Muhammad Naeem¹, Dr. Ata ul Mohsin², Dr. Humayun Javed³, Dr. Muir Ahmad⁴, Dr. Muhammad Tariq⁵, Dr. Asim Gulzar⁶, Dr. Imran Bodlah⁷. The results showed that the teacher # 1 & 3 were scoring 4.7, teacher 2 & 4 with 4.6, teacher 5-7 with 4.5.



PROGRAM ASSESSMENT RESULTS

Teachers' Evaluation (Performa 10)

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).

Fall 2010-11

Teachers' Evaluation (Dr. Ata ul Mohsin) on ENT-708, Session Fall 2010-11:

64% students strongly agreed that teacher was prepared for each class and remaining 21%, and 15% simply agreed and uncertain respectively. 79% students strongly agreed that the instructor communicate the subject matter effectively and other 14% simply agreed while 7% uncertain. 57% students strongly agreed, 29% simply agreed and 14% uncertain about the completion of each component of course by the instructor. About the relevance of course with respect to Pakistani perspectives 50% students are strongly agreed, 43% simply agreed while 7% students uncertain. 86% students strongly agreed that instructor encourage the student's class participation by inviting questions while 7% simply agreed whereas 7% uncertain. 79% students are strongly agreed that class begun and end on time during entire semester, 14% simply agreed and other 7% uncertain. 64% strongly agreed, 7% simply agreed, 14% uncertain and 14% disagree that teacher was fair in examination without any gender discrimination or background biasness. 71% students strongly agreed that assignments were graded and returned in a reasonable time and remaining 21% and 8%

simply agreed and uncertain respectively. 50% strongly agreed, 36% agreed and 14% uncertain about the welcoming attitude and availability of teacher after class timings. 57% students were strongly agreed that assignments and examination material was related to course whereas 36% simply agreed and 7% uncertain. 43% students strongly agreed, 36% simply agreed, 14% uncertain and 7% disagreed that the course was well up to date. About the course, 86% strongly agreed that the course was conducive and helped them in their knowledge enhancement while 14% simply agreed about this aspect. 71% students strongly agreed, 14% simply agreed, 7% uncertain while 7% disagree that the instructor displayed polite gesture and followed moral and ethical norms. 64% strongly agreed that class discussion stimulated intellectual curiosity, 29% simply agreed and other 7% uncertain. 86% students strongly agreed, 7% simply agreed and 7% uncertain about department encouragement on student feedback and respect.

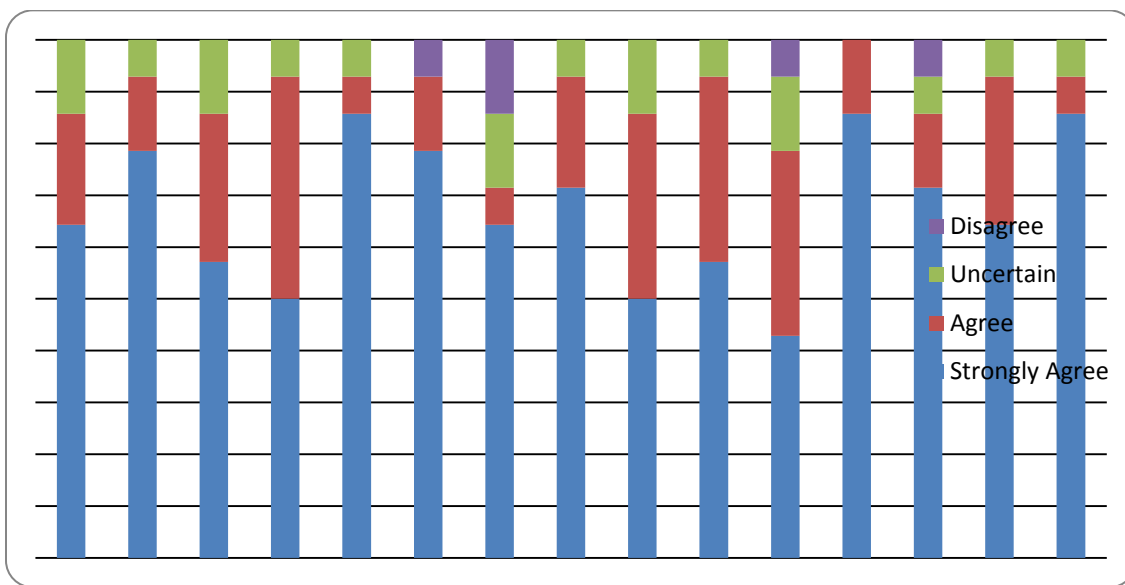


Fig. Graph showing Teacher Evaluation on ENT-708 during Fall-2010-11

Students Course Evaluation (Performa 1)

Courses taught the teachers at department level were also evaluated by the concerned students. The course of the teacher was evaluated on the basis of information gathered from Proforma 1. The performance level for the course is depicted in figure as shown below. Evaluation of courses alongwith their scores as done by the students are given as under.

Students Course Evaluation (Dr. Ata ul Mohsin) on ENT-708, Session Fall 2010-11:

79% students were strongly agreed and 21% agreed that course objective was clear. 64% students were strongly agreed, 29% agreed and 7% uncertain that the Course workload was manageable. 57% students were strongly agreed that the Course was well organized while remaining 43% were simply agreed. 79% students were strongly agreed, 7% students agreed and 14% student disagreed that approximate level of their own attendance during the whole Course. 71% students were strongly agreed, 14% agreed, 8% uncertain and 7% disagree that they actively participate in the class. 64% students were strongly agreed, 14% agreed, 14% uncertain and 8% disagree and that they have made progress in this course. 57% students were strongly agreed, 23% agreed and 14% uncertain that the Course was well structured to achieve the learning outcomes. 57% students were strongly agreed, 36% agreed and 7% uncertain that the learning and teaching methods encouraged participation. 64% students were strongly agreed, 14% agreed and 22% uncertain that the overall environment in the class was conducive to learning. 71% students were strongly agreed and 29% agreed that Classrooms were satisfactory. 64% students were strongly agreed and 36% agreed that Learning materials were relevant and useful. 50% students were strongly agreed, 43% agreed and 7% uncertain that recommended reading books etc. were relevant and appropriate. 71% students were strongly agreed, 14% agreed, 7% uncertain and 7% disagree that the provision of learning resources in the library was adequate and appropriate. 64% students were strongly agreed and 36% agreed that the provision of learning resources on the web was adequate and appropriate. 64% students were strongly agreed, 21% agreed, 7% uncertain and 7% disagreed that the course stimulated by interest and thought on the subject area. 64% students were strongly agreed and 36% agreed that the pace of the course was appropriate. 64% students were strongly agreed, 29% agreed and 7% uncertain that Ideas and concepts were presented clearly. 50% students were strongly agreed, 43% agreed and 7% uncertain that the method of assessment were reasonable.

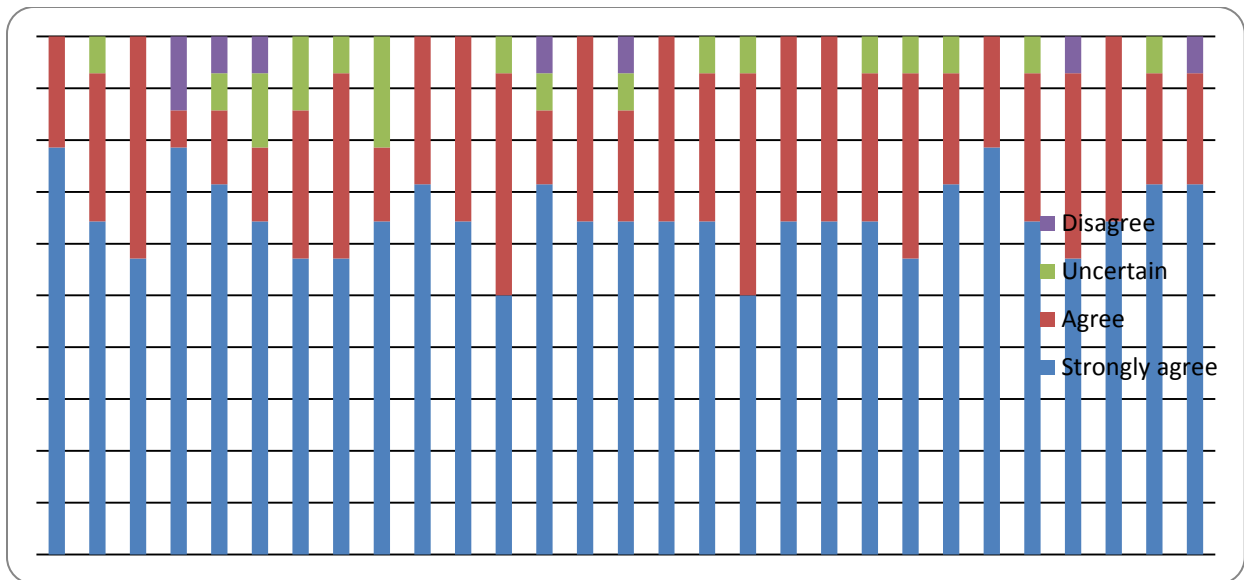


Fig. Graph showing student course evaluation on ENT-708 during Fall-2010-11

64% students were strongly agreed and 36% agreed that Feedback on assessment was timely. 64% students were strongly agreed and 36% agreed that Feedback on assessment was helpful. 64% students were strongly agreed, 29% agreed and 9% uncertain that they understood the lectures. 57% students were strongly agreed, 36% agreed and 7% uncertain that the material was well organized and presented. 71% students were strongly agreed, 21% agree and 8% uncertain that the instructor was responsive to student needs and problems. 79% students were strongly agreed and 21% agreed that the material in the tutorials was useful. 64% students were strongly agreed, 29% agreed and 7% uncertain that they were happy with the amount of work needed for tutorials. 57% students were strongly agreed, 36% agreed and 7% uncertain that the tutor dealt effectively with my problems. 64% students were strongly agreed and 36% agreed that the material in practical was useful. 71% students were strongly agreed, 21% agreed and 8% uncertain that the demonstrators dealt effectively with my problems

Spring 2011

Teachers' Evaluation (Performa 10)

Teachers' Evaluation (Prof. Dr. M. Naeem) on ENT-703 during spring 2011

53.33% students were strongly agreed and 33.33% students were agreed that the instructor is prepared for each class respectively. 66.67 % students were strongly agreed, and 26.67%

were agreed that the instructor demonstrates knowledge of the subject. 60% students were strongly agreed, 26.67% were agreed that The instructor was completed the whole course. 60% students were strongly agreed, 33.33% were agreed and 6.67% were uncertain that the instructor provides additional material apart from the textbook. 53.33% students were strongly agreed, 33.33% were agreed and 13.3% were uncertain that the instructor gives citations regarding current situations with reference to Pakistani context. 60% students were strongly agreed and 40% students were agreed that the instructor communicates the subject matter effectively. 66.67% students were strongly agreed and 33.33% students were agreed that the instructor shows respect towards students and encourage class participation.

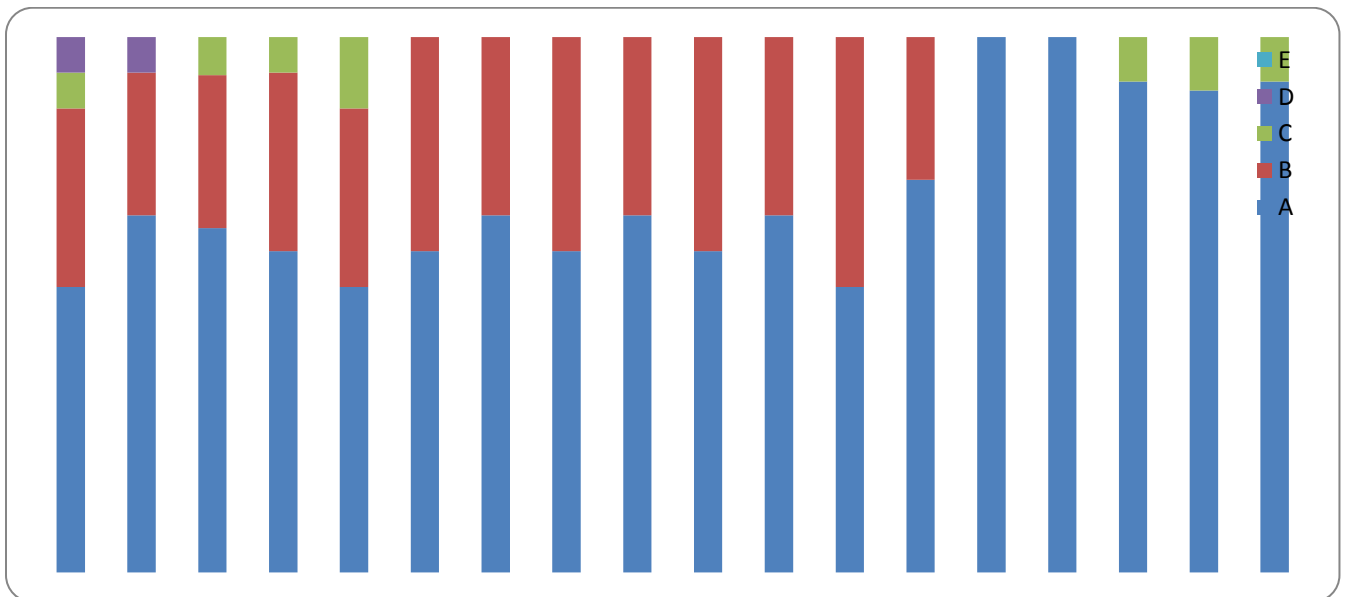


Fig: Graph showing Teacher evaluation on ENT-703 during spring 2011

60% students were strongly agreed and 40% students were agreed that the instructor maintains an environment that is conducive to learning. 66.67% students were strongly agreed and 33.33% students were agreed that the instructor arrives on time. 60% students were strongly agreed and 40% students were agreed that the instructor leaves on time. 67% students were strongly agreed and 33.33% students were agreed that the instructor is fair in examination. 53.33% students were strongly agreed and 46.67% students were agreed that the instructor returns the graded scripts etc. in a reasonable amount of time. 73.33% students were strongly agreed and 26.67% students were agreed that the instructor was available during specified office hours and after class consultations. 66.67% students were strongly agreed the subject matter presented in the course has increased your knowledge of this

subject. 60% students were strongly agreed the syllabus clearly states course objectives requirements procedure and grading criteria. 73.3 % students were strongly agreed and 6.67% were uncertain that the course integrates theoretical course with real-world applicants. 60 % students were strongly agreed and 6.67% were uncertain that the assignments and exams covered the materials presented in the course. 73.33 % students were strongly agreed and 6.67% were uncertain that the course is moderns and updated.

Teachers' Evaluation (Dr. Munir Ahmed) on ENT-714 during spring 2011

89.47% students were strongly agreed and 10.53% students were agreed that the instructor is prepared for each class respectively. 100 % students were strongly agreed that the instructor demonstrates knowledge of the subject. 84.21% students were strongly agreed, 10.53% were agreed that the instructor was completed the whole course. 73.68% students were strongly agreed, 26.32% were agreed that the instructor provides additional material apart from the textbook. 73.68% students were strongly agreed, 26.32% were agreed that the instructor gives citations regarding current situations with reference to Pakistani context. 84.21% students were strongly agreed and 5.26 students were agreed that the instructor communicates the subject matter effectively. 84.21% students were strongly agreed and 15.79% students were agreed that the instructor shows respect towards students and encourage class participation. 89.47% students were strongly agreed and 10.53% students were agreed that the instructor maintains an environment that is conducive to learning. 100% students were strongly agreed that the instructor arrives on time. 89.47% students were strongly agreed and 10.53% students were agreed that the instructor leaves on time. .100% students were strongly agreed that the instructor is fair in examination. 89.47% students were strongly agreed and 10.53% students were agreed that the instructor returns the graded scripts etc. in a reasonable amount of time. 68.42% students were strongly agreed and 31.58% students were agreed that the instructor was available during specified office hours and after class consultations. 73.68% students were strongly agreed and 26.32% were agreed the subject matter presented in the course has increased your knowledge of this subject. 84.21% students were strongly agreed and 15.79% were agreed the syllabus clearly states course objectives requirements procedure and grading criteria. 68.42 % students were strongly agreed and 31.58% were agreed that the course integrates theoretical course with real-world applicants. 68% students were strongly agreed and 31.58% were agreed that the

assignments and exams covered the materials presented in the course. 89.47 % students were strongly agreed and 10.53% were agreed that the course is moderns and updated.

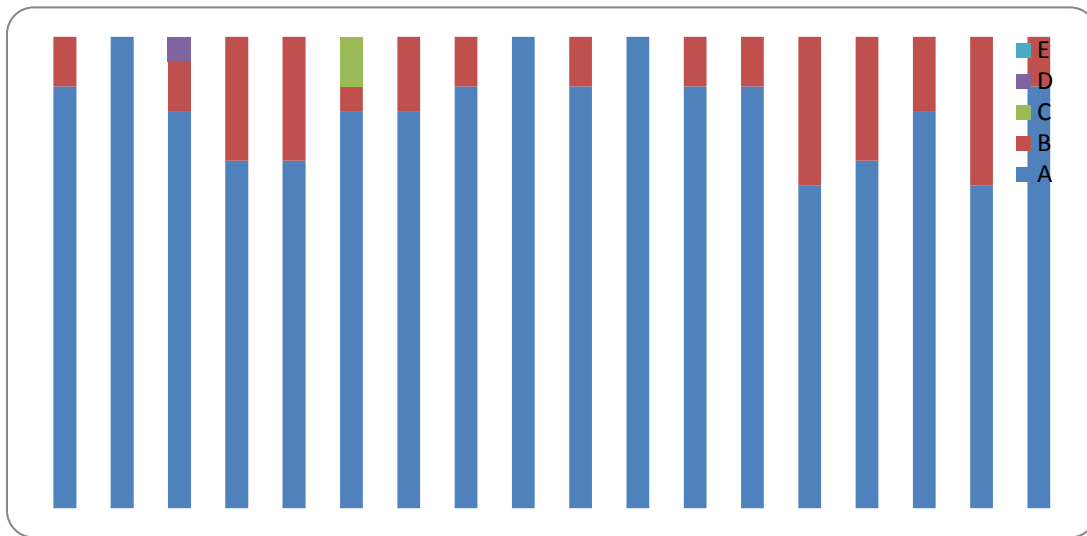


Fig. Graph showing teacher evaluation on ENT 714 during spring 2011

Student Course Evaluation (Performa 1)

Student Course Evaluation (Prof. Dr. M. Naeem) on ENT-703 during spring 2011

73.33% students strongly agreed whereas 20% simply agreed that the Course objectives were clear. 60% students strongly agreed whereas 6.67% simply agreed that the Course workload was manageable. 60% students strongly agreed, 13.33% agreed that the Course was well organized. 60% student strongly agreed, 33.33% agreed the approximate level of student own attendance during the whole Course. 40% are strongly agreeing, 33.33% agreed that student participated actively in the Course. 40% strongly agreed and 40% agreed that I think student have made progress in this Course. 73.33% students strongly agreed, 13.33% agreed and 13.33% were uncertain think that the Course was well structured to achieve the learning outcomes. 60% were strongly agreed, 13.33 were agreed and 20% uncertain that the learning and teaching methods encouraged participation. 60% strongly agree, 6.67% agreed and 20% uncertain that the overall environment in the class was conducive to learning. 53.33 % were strongly agreed, 20% agreed and 20% uncertain that the classrooms were satisfactory. 60% were strongly agreed, 6.67% agreed and 20% uncertain that learning materials were relevant

and useful. 53.33% students strongly agree, 20% agreed and 6.67% uncertain that recommended reading books etc. were relevant and appropriate. 46.67% were strongly agreed, 26.67% agreed and 20% uncertain that the provision of learning resources in the library was adequate and appropriate. 46.67% students strongly agreed 20% were agreed and 26.67% uncertain that the provision of learning resources on the web was adequate and appropriate. 66.67% students strongly agreed whereas 13.33% were agreed and 13.33 were uncertain that the course stimulated by interest and thought on the subject area. 53.33% are strongly agreed, 33.33% agreed and 6.67% uncertain that the pace of the course was appropriate. 53.33% strongly agreed, 33.33% agreed and 13.33% uncertain that the ideas and concepts were presented clearly. 53.33% strongly agreed, 26.67% simply agreed and 13.33% uncertain that the method of assessment was reasonable. 53.33% were strongly agreed, 20% agreed and 20% uncertain that Feedback on assessment was timely. 53.33% students strongly agreed, 13.33% simply agreed and 26.67% uncertain that feedback on assessment was helpful. 46.67% students strongly agreed whereas 26.67% were agreed and 20% uncertain that student understood the lectures. 46.67% are strongly agreed, 26.67% agreed and 20% uncertain that the material was well organized and presented. 46.67% strongly agreed, 20% agreed and 26.67% uncertain that the instructor was responsive to student needs and problems. 46.67% strongly agreed, 20% simply agreed and 26.67% uncertain that had the instructor been regular throughout the course. 53.33% students strongly agreed, 33.33% simply agreed and 6.67% uncertain that the material in the tutorials was useful. 60% were strongly agreed, 26.67% agreed and 6.67% uncertain that student was happy with the amount of work needed for tutorials. 66.67% strongly agreed, 20% agreed and 6.67% uncertain that the tutor dealt effectively with my problems. 53.33% strongly agreed, 33.33% agreed and 6.67% uncertain that the material in the practical was useful. 60% strongly agreed and 33.33% simply agreed that the demonstrators dealt effectively with my problems.

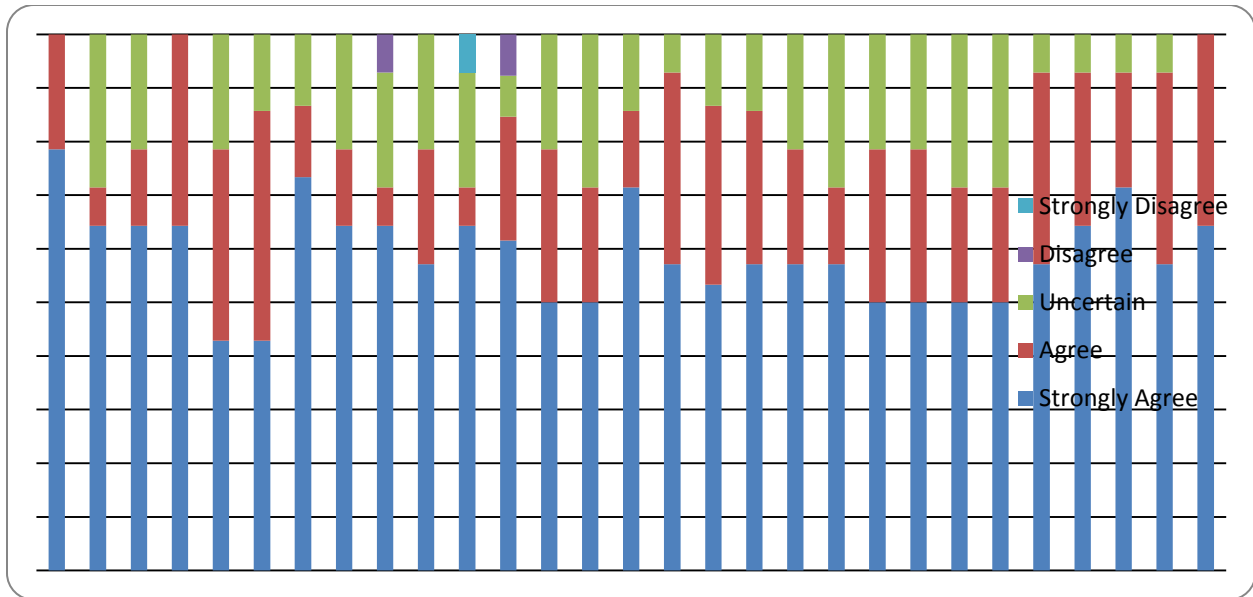


Fig: Graph showing student course evaluation on ENT-703 during spring 2011

Student Course Evaluation (Dr. Munir Ahmed) on ENT-714 during spring 2011

94.74% students strongly agreed whereas 5.26% were agreed that the Course objectives were clear. 78.95% students strongly agreed whereas 21.05% simply agreed that the Course workload was manageable. 94.74% students strongly agreed, 5.26% agreed that the Course was well organized. 52.63% are strongly agreeing, 31.58% agree and 10.53% were uncertain that student participated actively in the Course. 63.16% strongly agreed, 31.58% agreed that I think student have made progress in this Course. 78.95% students strongly agreed, 21.05% agreed I think the Course was well structured to achieve the learning outcomes. 84.21% were strongly agreed and 15.79% were agreed that the learning and teaching methods encouraged participation. 84.21% strongly agree and 15.79% agreed the overall environment in the class was conducive to learning. 73.68% were strongly agreed, 15.79% agreed and 5.26% were uncertain that the classrooms were satisfactory. 73.68% were strongly agreed, 26.32% agreed that learning materials were relevant and useful. 73.68% students strongly agree, 26.32% agreed that recommended reading books etc. were relevant and appropriate. 68.42% were strongly agreed, 26.32% agreed and 5.26% were uncertain the provision of learning resources in the library was adequate and appropriate. 68.42% students strongly agreed and

31.58% simply agreed that the provision of learning resources on the web was adequate and appropriate. 57.89% students strongly agreed whereas 42.11% were agreed that the provision of learning resources on the web was adequate and appropriate. 57.89% are strongly agreed and 42.11% agreed the pace of the course was appropriate. 63.16% strongly agreed and 36.84% agreed that the ideas and concepts were presented clearly. 68.42% strongly agreed and 31.58% simply agreed that the method of assessment were reasonable. 73.68% were strongly agreed, 26.32% were agreed that Feedback on assessment was timely. 68.42% students strongly agreed and 31.58% simply agreed feedback on assessment was helpful. 78.95% students strongly agreed whereas 21.05% were agreed that student understood the lectures. 89.47% are strongly agreed and 10.53% agreed the material was well organized and presented. 84.21% strongly agreed and 15.79% agreed that the instructor was responsive to student needs and problems. 84.21% strongly agreed and 15.79% simply agreed that had the instructor been regular throughout the course? 68.42% students strongly agreed whereas 31.58 % were agreed that the material in the tutorials was useful. 63.16% are strongly agreed and 36.84% agreed that student was happy with the amount of work needed for tutorials. 84.21% strongly agreed and 15.79% agreed that the tutor dealt effectively with my problems. 84.21% strongly agreed and 15.79% simply agreed that the materials in practical were useful. 78.95% strongly agreed and 21.05% simply agreed that the demonstrators dealt effectively with my problems.

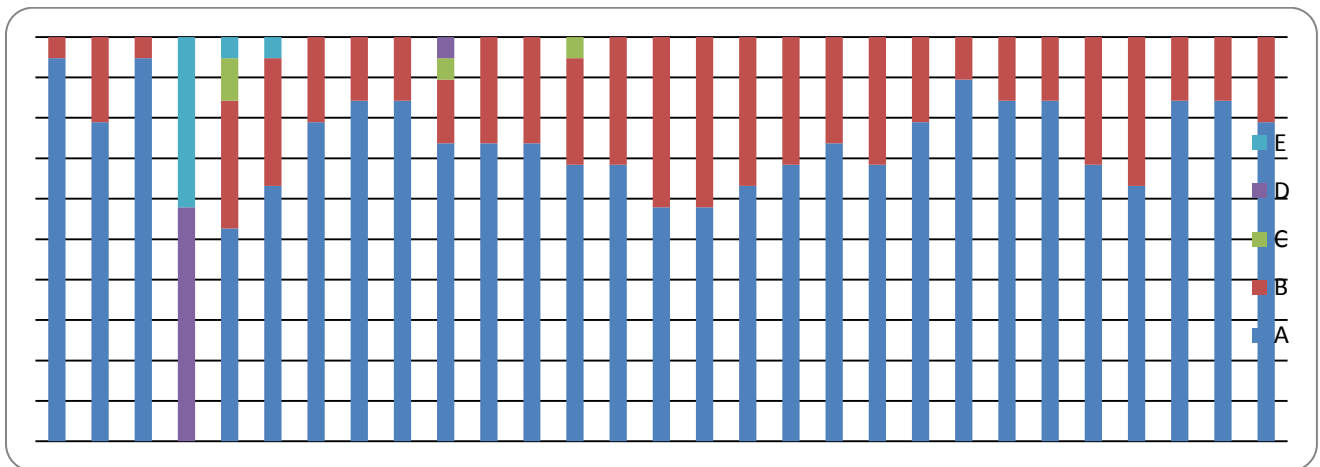


Fig. Graph showing student course evaluation on ENT 714 during spring 2011

Teachers' Evaluation (Performa 10)

Teachers' Evaluation (Dr. Humayun Javed) on ENT-711 during Fall-2011-12

85% students strongly agree that the instructor is prepared for each class. 70% students strongly agreed whereas 25% simply agreed that he demonstrates knowledge on the subject. 60% students strongly agreed, 35% agreed, that their course was completely covered by the instructor. 75% student strongly agreed, 20% agreed & 5% were uncertain that he provides additional material apart from the text. 50% are strongly agreeing, 35% agree and 10% were uncertain that he gave citations regarding current situations in reference to Pakistan. 60% strongly agree, 35% agreed, and 5% were uncertain that the instructor communicates the subject matter every effectively. 75% were strongly agreed, 25% agree and 0% were disagreeing that the instructor has shown respect shown towards the students and encouraging class participation. 45% students strongly agreed, 45% agreed, that the instructor maintains the environment that is conducive to learning. 75% were strongly agreed and 25% agreed that the instructor is very punctual. 85% strongly agree and 5% agree that he leaves the class in time. 60 % were strongly agreed, 25% agreed that the instructor is fair in examination. 55% were strongly agreed, 40% agreed and 5% were uncertain that he returns the graded script in a reasonable amount of time. 65% students strongly agree, 35% agreed that the instructor was available during the specified office hours and for after class consultation. 50% were strongly agreed, 45% agreed that the subject matter presented in the course has increased their knowledge on the subject. 50% students strongly agreed and 50% simply agreed that the syllabus clearly states course objectives requirements, procedures and grading criterion. 50% students strongly agreed whereas 50% are agreed that the course integrates theoretical course concepts with real world applications. 80% are strongly agreed and 20% agreed that her assignments and exams covered the material presented in the course. 75% strongly agreed and 20% agreed that the course material is modern and updated.

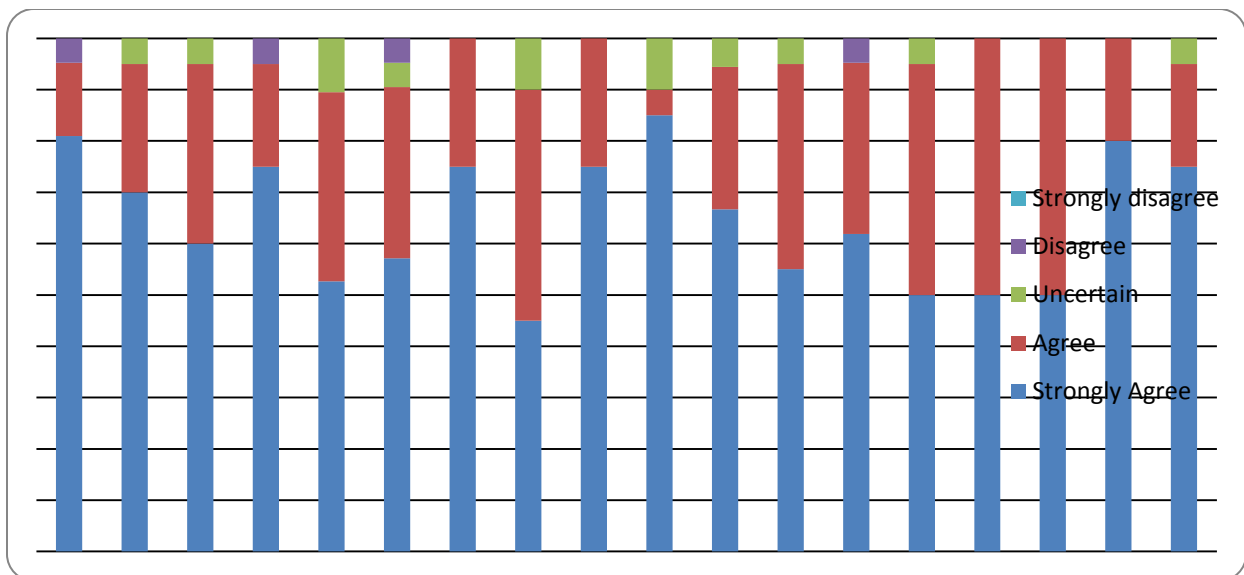


Fig: Graph showing Teacher evaluation on ENT-711 during Fall 2011-12

Teacher’s evaluation (Dr. Ata ul Mohsin) on ENT-717 during Fall 2011-12

76% students strongly agree that the instructor is prepared for each class. 68% students strongly agreed whereas 32% simply agreed that he demonstrates knowledge on the subject. 76% students strongly agreed, 24% agreed, that their course was completely covered by the instructor. 72% student strongly agreed, 28% agreed that he provides additional material apart from the text. 68% are strongly agreeing, 32% agree that he gave citations regarding current situations in reference to Pakistan. 72% strongly agree, 28% agreed that the instructor communicates the subject matter every effectively. 72% were strongly agreed, 28% agree that the instructor has shown respect shown towards the students and encouraging class participation. 72% students strongly agreed, 28% agreed, that the instructor maintains the environment that is conducive to learning. 68% were strongly agreed and 32% agreed that the instructor is very punctual. 72% strongly agree and 28% agree that he leaves the class in time. 64% were strongly agreed, 36% agreed that the instructor is fair in examination. 64% were strongly agreed, 36% agreed that he returns the graded script in a reasonable amount of time. 68% students strongly agree, 32% agreed that the instructor was available during the specified office hours and for after class consultation. 64% were strongly agreed, 36% agreed that the subject matter presented in the course has increased their knowledge on the subject.

64% students strongly agreed and 36% simply agreed that the syllabus clearly states course objectives requirements, procedures and grading criterion. 60% students strongly agreed whereas 40% are agreed that the course integrates theoretical course concepts with real world applications. 60% are strongly agreed and 32% agreed that assignments and exams covered the material presented in the course. 60% strongly agreed and 40% agreed and that the course material is modern and updated.

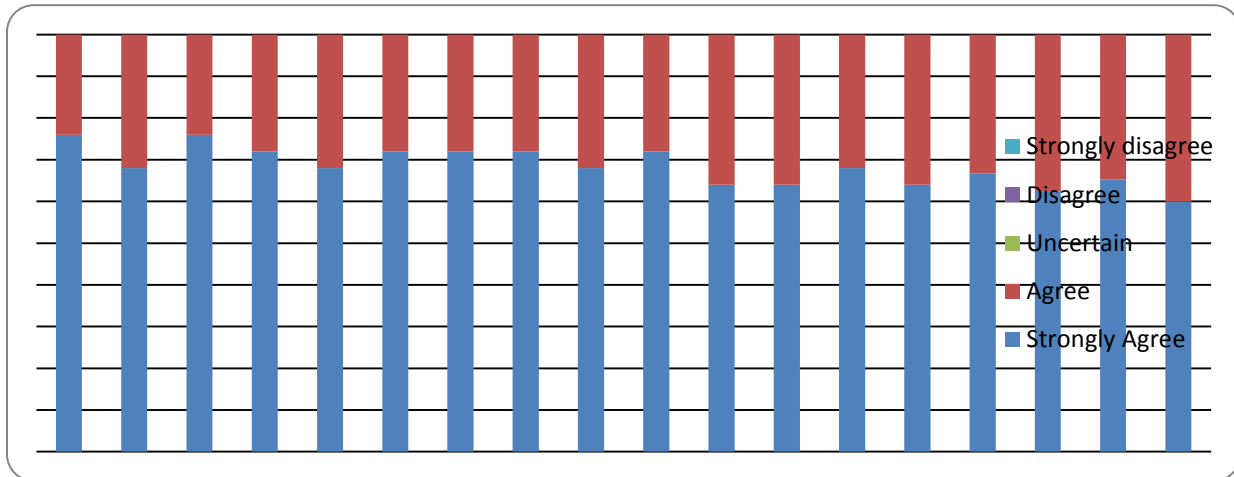


Fig: Graph showing Teacher’s evaluation on ENT-717 during Fall 2011-12

Teacher’s evaluation (Dr. Munir Ahmed) on ENT-721 during Fall 2011-12

77.27% students strongly agree and 22.73% agree that the instructor is prepared for each class. 68.18% students strongly agreed whereas 31.82% simply agreed that he demonstrates knowledge on the subject. 72.73% students strongly agreed, 27.27% agreed, that their course was completely covered by the instructor. 63.64% student strongly agreed, 31.82% agreed & 4.55% were uncertain that he provides additional material apart from the textbook. 59.09% are strongly agreeing, 40.91% agree that he gave citations regarding current situations in reference to Pakistan. 63.64% strongly agree, 36.36% agreed that the instructor communicates the subject matter every effectively. 68.18% were strongly agreed, 31.82% agree that the instructor has shown respect shown towards the students and encouraging class participation. 72.73% students strongly agreed, 22.73% agreed, that the instructor maintains the environment that is conducive to learning. 81.82% were strongly agreed and 18.18% agreed that the instructor is very punctual. 63.64% strongly agree and 36.36% agree that he

leaves the class in time. 77.27% were strongly agreed, 18.18% agreed that the instructor is fair in examination. 72.73% were strongly agreed, 22.73% agreed that he returns the graded script in a reasonable amount of time. 63.64% students strongly agree, 31.82% agreed that the instructor was available during the specified office hours and for after class consultation. 72.73% were strongly agreed, 31.82% agreed that the subject matter presented in the course has increased their knowledge on the subject. 68.18% students strongly agreed and 27.27% simply agreed that the syllabus clearly states course objectives requirements, procedures and grading criterion. 68.18% students strongly agreed whereas 27.27% are agreed that the course integrates theoretical course concepts with real world applications. 72.73% are strongly agreed and 22.73% agreed that her assignments and exams covered the material presented in the course. 59.09% strongly agreed and 36.36% agreed that the course material is modern and updated.

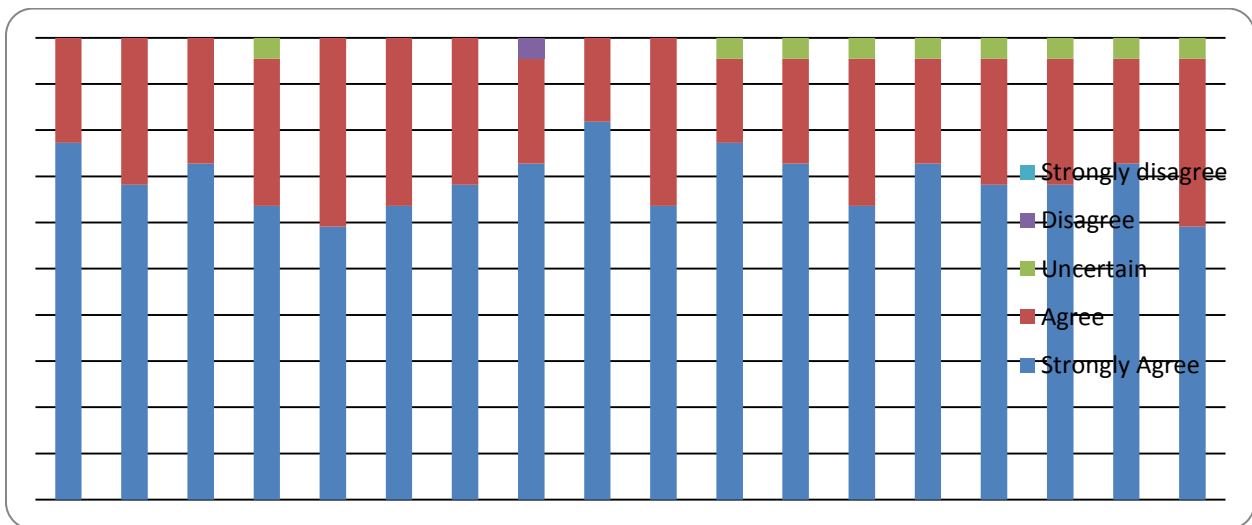


Fig: Graph showing Teacher evaluation on ENT-721 during Fall 2011-12

Students Course Evaluation (Performa 1)

Students Course Evaluation (Dr. Humayun Javed) on ENT-711 during Fall 2011-12

30% students strongly agreed whereas 60% simply agreed and 10% were uncertain that the Course workload was manageable. 40% students strongly agreed 60% agreed that the Course was well organized. 55% student strongly agreed, 45% agreed the approximate level of student own attendance during the whole Course. 45% are strongly agreeing, 45% agree and that student participated actively in the Course. 50% strongly agreed, 40% agreed that they think student have made progress in this Course. 55% students strongly agreed, 45% agreed I think the Course was well structured to achieve the learning outcomes. 60% were strongly agreed and 30% agreed that the learning and teaching methods encouraged participation. 55% strongly agree and 40% agreed the overall environment in the class was conducive to learning. 60% were strongly agreed that the classrooms were satisfactory. 60% were strongly agreed, 35% agreed that learning materials were relevant and useful. 50% students strongly agree, 40% agreed that recommended reading books etc. were relevant and appropriate. 55% were strongly agreed, 40% agreed and 5% were uncertain the provision of learning resources in the library was adequate and appropriate. 60% students strongly agreed and 30% simply agreed and 10% were uncertain that the provision of learning resources on the web was adequate and appropriate. 80% students strongly agreed whereas 20% were agreed that the course simulated by interest and thought on the subject area. 50% are strongly agreed and 45% agreed the pace of the course was appropriate. 60% strongly agreed and 25% agreed that the ideas and concepts were presented clearly. 50% strongly agreed and 50% simply agreed that the method of assessment were reasonable. 35% were strongly agreed, 60% agreed and 5% were uncertain that Feedback on assessment was timely. 60% students strongly agreed and 35% simply agreed and 5% were uncertain feedback on assessment was helpful. 55% students strongly agreed whereas 45% were agreed that student understood the lectures. 75% are strongly agreed and 25% agreed the material was well organized and presented. 80% strongly agreed and 15% agreed that the instructor was responsive to student needs and problems. 75% strongly agreed and 25% simply agreed that had the instructor been regular throughout the course. 65% students strongly agreed whereas 35% were agreed that the material in the tutorials was useful. 45% are strongly agreed and 50% agreed and 5% were uncertain that student was happy with the amount of work needed for tutorials. 50% strongly agreed and 50% agreed that the tutor dealt effectively with my problems. 60% strongly agreed and 40% simply agreed that the materials in practical were useful. 55%

strongly agreed and 40% simply agreed that the demonstrators dealt effectively with my problems.

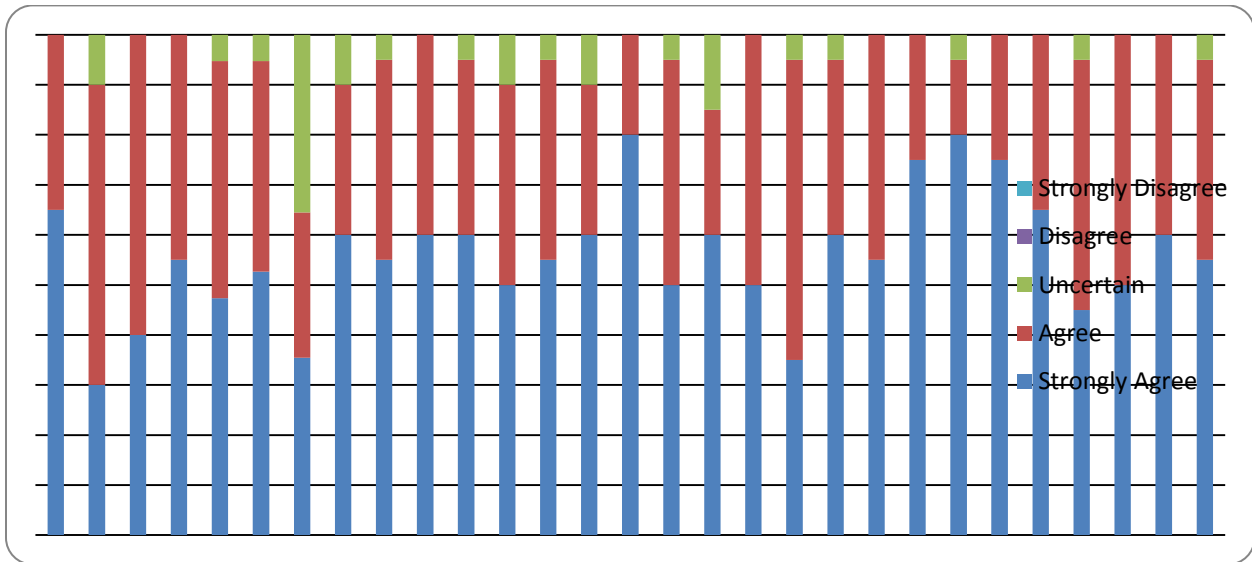


Fig: Graph showing student course evaluation on ENT-711 during Fall 2011-12

Student course evaluation (Dr. Ata ul Mohsin) on ENT-717 during Fall 2011-12

64% students strongly agreed whereas 32% simply agreed that the Course workload was manageable. 64% students strongly agreed & 36% agreed that the Course was well organized. 64% are strongly agreeing, 36% agree and that student participated actively in the Course. 60% strongly agreed, 36% agreed that they think student have made progress in this Course. 64% students strongly agreed, 32% agreed I think the Course was well structured to achieve the learning outcomes. 64% were strongly agreed and 32% agreed that the learning and teaching methods encouraged participation. 64% strongly agree and 32% agreed the overall environment in the class was conducive to learning. 64% were strongly agreed, 28% agreed that the classrooms were satisfactory. 60% were strongly agreed, 36% agreed that learning materials were relevant and useful. 60% students strongly agree, 40% agreed that recommended reading books etc. were relevant and appropriate. 60% were strongly agreed, 32% agreed the provision of learning resources in the library was adequate and appropriate. 64% students strongly agreed and 24% simply agreed that the provision of learning resources on the web was adequate and appropriate. 64% students strongly agreed whereas 32% were agreed that the course simulated by interest and thought on the subject area. 60% are strongly

agreed and 36% agreed the pace of the course was appropriate. 64% strongly agreed and 36% agreed that the ideas and concepts were presented clearly. 60% strongly agreed and 40% simply agreed that the method of assessment were reasonable. 64% were strongly agreed, 32% agreed and 4% were uncertain that Feedback on assessment was timely. 64% students strongly agreed and 32% simply agreed and 4% were uncertain feedback on assessment was helpful. 64% students strongly agreed whereas 36% were agreed that student understood the lectures. 64% are strongly agreed and 36% agreed the material was well organized and presented. 68% strongly agreed and 28% agreed that the instructor was responsive to student needs and problems. 64% strongly agreed and 32% simply agreed that had the instructor been regular throughout the course. 64% students strongly agreed whereas 28% were agreed and 8% were uncertain that the material in the tutorials was useful. 56% are strongly agreed and 44% agreed that student was happy with the amount of work needed for tutorials. 64% strongly agreed and 36% agreed that the tutor dealt effectively with my problems. 64% strongly agreed and 36% simply agreed that the materials in practical were useful. 64% strongly agreed and 32% simply agreed that the demonstrators dealt effectively with my problems.

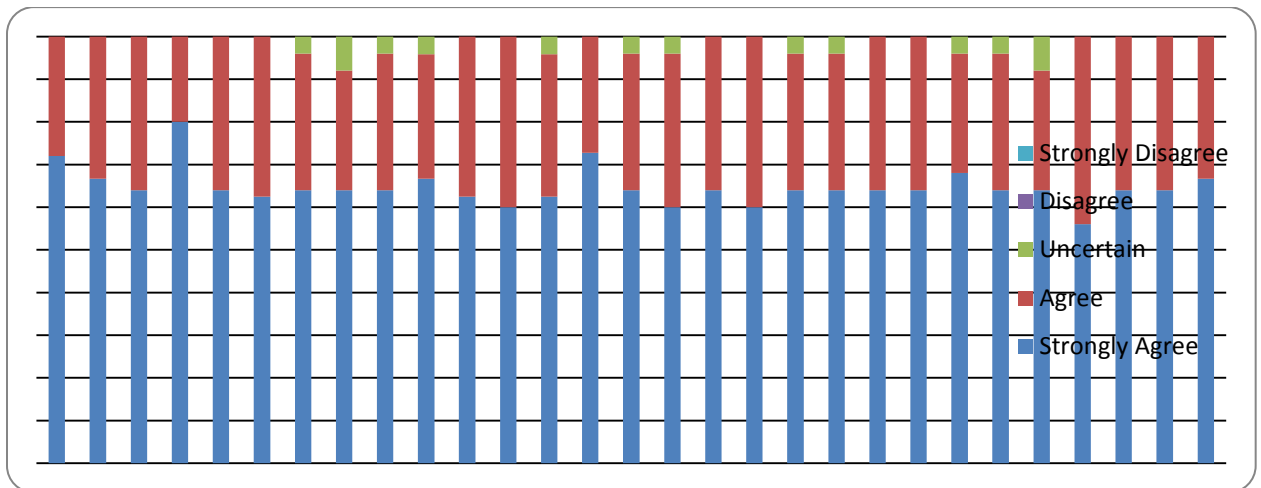


Fig: Graph showing student course evaluation on ENT-717 during Fall 2011-12

Student course evaluation (Dr. Munir Ahmed) on ENT-721 during Fall 2011-12

40.9% students strongly agreed whereas 54.4% simply agreed and that the Course workload was manageable. 54.54% students strongly agreed, 45.45% agreed that the Course was well

organized. 36.36% are strongly agreeing, 63.33% agree and that student participated actively in the Course. 36.66% strongly agreed, 63.33% agreed that they think student have made progress in this Course. 50% students strongly agreed, 45% agreed I think the Course was well structured to achieve the learning outcomes. 45.45% were strongly agreed and 54.54% agreed that the learning and teaching methods encouraged participation. 45.45% strongly agree and 54.33% agreed the overall environment in the class was conducive to learning. 36.36% were strongly agreed, 54.54% agreed and 9.09% were uncertain that the classrooms were satisfactory. 50% were strongly agreed, 50% agreed that learning materials were relevant and useful. 54.54% students strongly agree, 40.9% agreed that recommended reading books etc. were relevant and appropriate. 36.36% were strongly agreed, 59.09% agreed the provision of learning resources in the library was adequate and appropriate. 40.09% students strongly agreed and 54.054% simply agreed and 4.45% were uncertain that the provision of learning resources on the web was adequate and appropriate. 36.36% students strongly agreed whereas 54.54% were agreed that the course simulated by interest and thought on the subject area. 45.54% are strongly agreed and 50% agreed the pace of the course was appropriate. 54.54% strongly agreed and 40.09% agreed that the ideas and concepts were presented clearly. 45.45% strongly agreed and 54.45% simply agreed that the method of assessment were reasonable. 50% were strongly agreed, 50% agreed that Feedback on assessment was timely. 59.09% students strongly agreed and 40.09% simply agreed feedback on assessment was helpful. 45.45% students strongly agreed whereas 50% were agreed that student understood the lectures. 50% are strongly agreed and 50% agreed the material was well organized and presented. 59.09% strongly agreed and 40.09% agreed that the instructor was responsive to student needs and problems. 60.63% strongly agreed and 36.36% simply agreed that had the instructor been regular throughout the course. 9.09% students strongly agreed whereas 86.36% were agreed that the material in the tutorials was useful. 45.45% are strongly agreed and 40.09% agreed and 9.09% were uncertain that student was happy with the amount of work needed for tutorials. 54.54% strongly agreed and 36.36% agreed and 4.54% were uncertain that the tutor dealt effectively with my problems. 36.36% strongly agreed and 63.36% simply agreed that the materials in practical were useful. 45.45% strongly agreed and 50% simply agreed that the demonstrators dealt effectively with my problems.

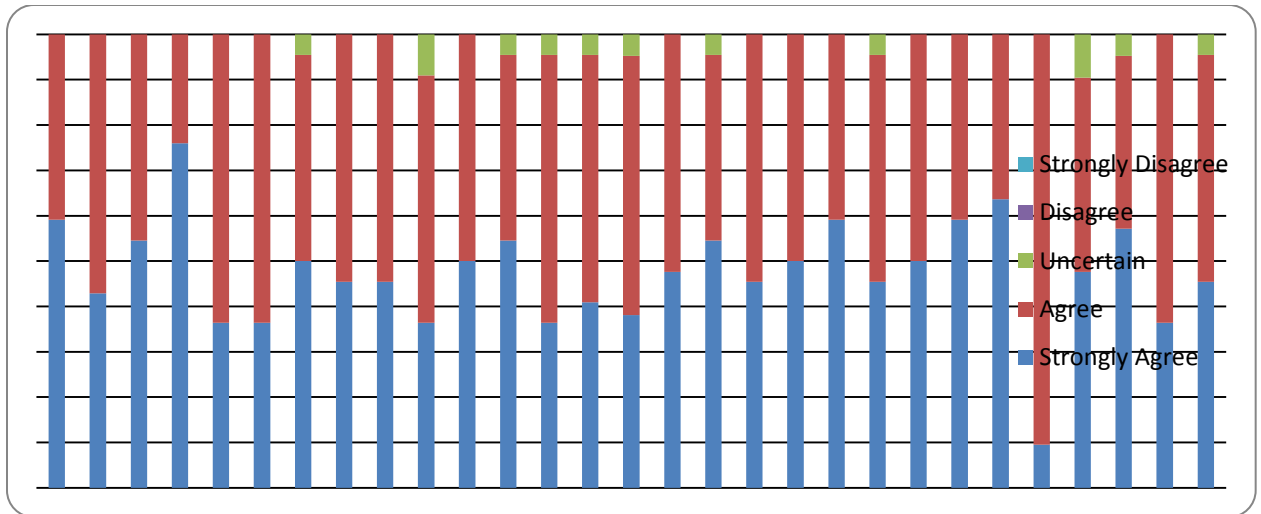


Fig: Graph showing student course evaluation on ENT-721 during Fall 2011-12

Spring 2012

Teachers' Evaluation (Performa 10)

Teachers' Evaluation (Dr. M. Tariq) on ENT-708 during Spring 2012

67% students strongly agree and 25% agree and 8% are uncertain that the instructor is prepared for each class. 67% students strongly agreed 25% agreed whereas 8% uncertain that he demonstrates knowledge on the subject. 58% students strongly agreed, 33% agreed, that their course was completely covered by the instructor. 58% student strongly agreed, 33% agreed & 8% disagree that he provides additional material apart from the text. 67% are strongly agreeing, 33% agree that he gave citations regarding current situations in reference to Pakistan. 58% strongly agree, 25% agreed, and 8% were uncertain that the instructor communicates the subject matter every effectively. 75% were strongly agreed, 17% agree that the instructor has shown respect shown towards the students and encouraging class participation. 58% students strongly agreed, 41% agreed, that the instructor maintains the environment that is conducive to learning. 67% were strongly agreed and 33% agreed that the instructor is very punctual. 58% strongly agree and 42% agree that he leaves the class in time. 75 % were strongly agreed, 17% agreed that the instructor is fair in examination. 67% were strongly agreed, 25% agreed that he returns the graded script in a reasonable amount of time. 58% students strongly agree, 33% agreed that the instructor was available during the specified office hours and for after class consultation. 67% were strongly agreed, 25% agreed

and 8% were uncertain that the subject matter presented in the course has increased their knowledge on the subject. 67% students strongly agreed and 33% simply agreed that the syllabus clearly states course objectives requirements, procedures and grading criterion.

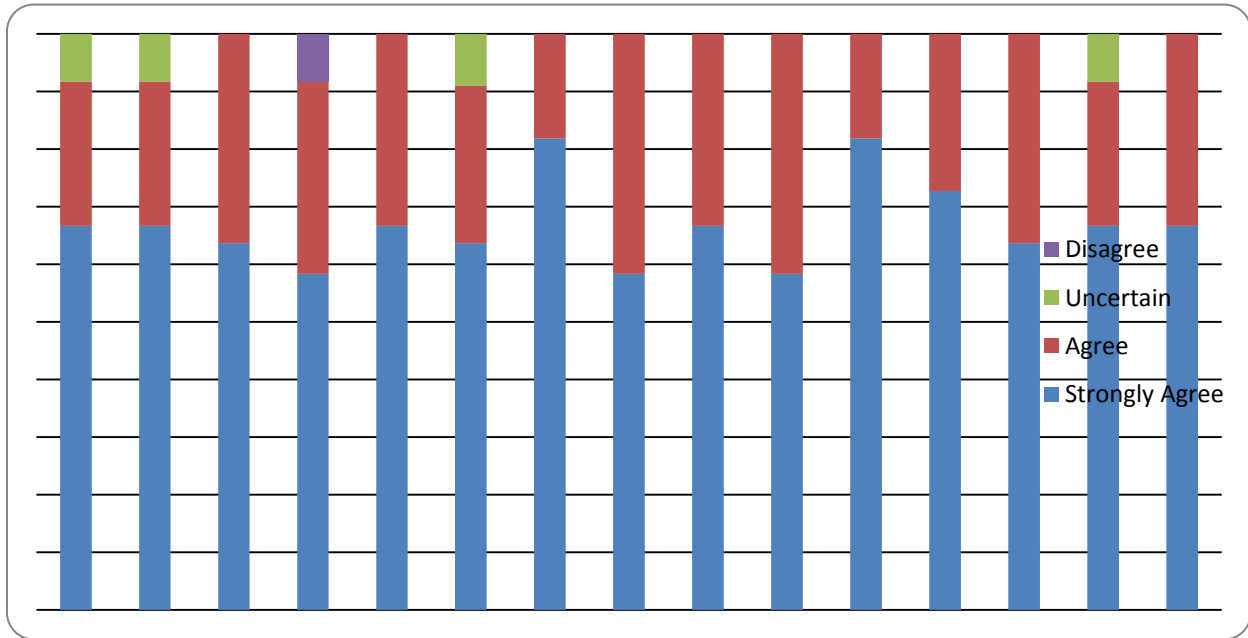


Fig: Graph showing teacher evaluation on ENT-708 during Spring 2012

Students Course Evaluation (Performa 1)

Students Course Evaluation (Dr. M. Tariq) on ENT-708 during spring 2012

41.66% students strongly agreed whereas 50% and 8.33% were uncertain that the Course objectives were clear. 41.66667% students strongly agreed whereas 58.33% simply agreed that the Course workload was manageable. 66.66% students strongly agreed, 25% agreed that the Course was well organized. 8.33% student strongly agreed that the approximate level of student own attendance during the whole Course. 50% are strongly agreeing, 41.66% agree and 8.33% were uncertain that student participated actively in the Course. 66.66% strongly agreed, 33.33% agreed that I think student have made progress in this Course. 50% students strongly agreed, 50% agreed that I think the Course was well structured to achieve the learning outcomes. 50% were strongly agreed and 50% agreed and that the learning and teaching methods encouraged participation. 66.66% strongly agree and 33.33% agreed that

the overall environment in the class was conducive to learning. 50 % were strongly agreed, 41.66% agreed and 8.33% were uncertain that the classrooms were satisfactory. 41.66% were strongly agreed, 58.33% agreed that learning materials were relevant and useful. 50% students strongly agree, 41.66% agreed that recommended reading books etc. were relevant and appropriate. 75% were strongly agreed, 25% agreed that the provision of learning resources in the library was adequate and appropriate. 58.33% students strongly agreed and 33.33% simply agreed and 8.33% were uncertain that the provision of learning resources on the web was adequate and appropriate. 50% students strongly agreed whereas 50% were agreed that the provision of learning resources on the web was adequate and appropriate. 50% are strongly agreed and 50% agreed that the pace of the course was appropriate. 66.66% strongly agreed and 33.33% agreed that the ideas and concepts were presented clearly. 33.33% strongly agreed and 41.66% simply agreed the method of assessment was reasonable. 41.66% were strongly agreed, 25% agreed that Feedback on assessment was timely. 50% students strongly agreed and 16.66% simply agreed feedback on assessment was helpful. 33.33% students strongly agreed whereas 41.66% were agreed that student understood the lectures. 33.33% are strongly agreed and 16.66% agreed and 8.33% were uncertain that the material was well organized and presented. 50% strongly agreed and 16.66% agreed that the instructor was responsive to student needs and problems. 33.33% strongly agreed and 25% simply agreed that had the instructor been regular throughout the course? 33.33% students strongly agreed whereas 33.33% were agreed that the material in the tutorials was useful. 41.66% are strongly agreed and 16.66% agreed and 8.33% were uncertain that student was happy with the amount of work needed for tutorials. 50% strongly agreed and 16.66% agreed that the tutor dealt effectively with my problems. 33.33% strongly agreed and 41.66% simply agreed that the materials in practical were useful. 33.33% strongly agreed and 16.66% simply agreed that the demonstrators dealt effectively with my problems.

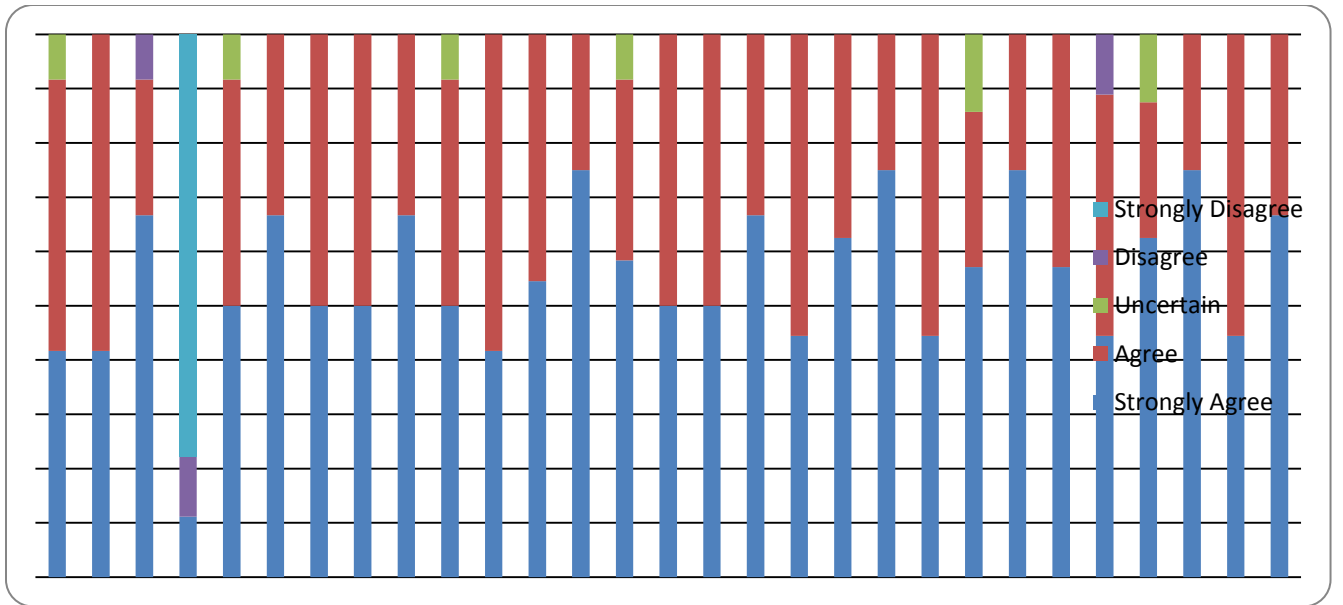


Fig: Graph showing student course evaluation on ENT 708 during spring 2012

FACULTY COURSE REVIEW REPORT (Performa 2)

Table: Course assessment evaluation based on performa 2

Fall Semester 2011														
Course code	Title	Credit value	Assessment Methods/ Exam	No. of students	Comments on Curriculum	Any change in course for future	Semester	Grade (%)					Course Instructor	
								A	B	C	D	F		
ENT-701	Research Methods in Entomology	4(2-4)	Mid and Final	1	Updated	No	1 st	0	100	0	0	0	0	Dr. Muhammad Naeem
ENT-720	Seminar-1	1(1-0)	Presentatio n	1	Updated	No	1 st	100	0	0	0	0	0	Dr. Ata-ul-Mohsin
ENT-711	Medical and Veterinary Entomology	3(2-2)	Mid and Final	1	Updated	No	1 st	100	0	0	0	0	0	Dr. Humayun Javed
ENT-708	Insect Pest Management Systems	3(2-2)	Mid and Final	2	Good	No	1 st	100	0	0	0	0	0	Dr. Ata-ul-Mohsin

Standard 1-2: 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 two of the senior faculty members are foreign qualified Ph.Ds, four are local PhD and two from abroad. So far as equipment and laboratories are concerned; through HEC funded project entitled” Strengthening of Entomology Department” procurement of required equipment and upgradationof laboratories is being done which would be a big support in upgradation of both educational and research activities at the department.

Standard 1-3: Weakness Identified In the Program

The department is facing acute shortage of:

- With the increase in students’ registration, the classes of Entomology are taken in the laboratories and it is severely affecting the research activities of the PhD scholars to perform effectively
- Lack of proper supply of electricity is also another major hurdle to perform and execute research work under controlled required conditions
- Lack of proper training of the faculty for their improvement in up to date knowledge and research expertise
- Lack of Electron microscope, Microtome, Growth chambers and equipment related to molecular techniques etc.

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

Faculty	Journal Publications (National & International)	Conference Publications (Proceedings Abstract)	Projects
Dr. Muhammad Naeem	17	Nil	1
Dr. Humayun Javed	4	Nil	Nil
Dr. Ata-ul-Mohsin	Joined PSF on Deputation		
Dr. Javaid Iqbal	Joined as Asst. Prof. in Islamia University, Bahawalpur		
Dr. Munir Ahmed	2	2	2
Dr. Asif Aziz	8	1	1
Dr Asim Gulzar	2	Nil	1
Dr. Imran Bodlah	13	1	Nil
Dr. M Farooq Nasir	2	Nil	Nil
Dr. Muhammad Tariq	4	2	Nil

The department is under staffed and need more Ph.Ds to be inducted.

Best teacher Award to Prof. Dr. Muhamamd Naeem from Higher Education Commission, Pakistan

Community Services by the Department

- Regular participation in Spring festivals organized in the University to offer exhibition of honeybee, bumblebee colonies, insects as important pests and beneficials, Entomological industries
- Pest identification service for the visiting farmers and recommendation of pest management methodology
- Provision of services of household pest control including dengue vector mosquitoes, cockroaches, flies, mealybugs etc
- Services for termite proofing for the urban and rural community for the general public as well as university staff

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 8:4 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 properly
- 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 department is focusing specifically on:

- Establish and maintain better teaching/learning environment and standards for better output.
- Conducting field visits incorporating entomological problems particularly of arid areas.
- To impart quality education in Entomology using all the possible techniques and materials.
- To develop and disseminate extension material regarding pest management.
- Organizing workshops on Integrated Pest Management and Entomological Industries especially apiculture, sericulture and bombiculture both for the TOTs and the agricultural/research officers of arid areas.
- Preparation and dissemination of extension literature like brochures and pamphlets for the farmers and advisory services.
- To establish the post-graduate laboratories in the disciplines of host plant resistance, plant disease vectors, pollinators conservation and sericulture laboratories. Human Resource development in Entomology to meet future challenges for sustainable agriculture leading to self sufficiency in food.
- To plan and execute problem oriented research on local and serious crop pests prevalent in the arid ecology.
- Capacity building of faculty members in relation to the latest global advancements in this discipline through exchange programs, short term trainings and collaborative research projects with federal and provincial government bodies.

Table: 4 Quantitative Assessment of the Department

Sr.#	Particular	No.	Remarks
Iii	Ph.D. produced	6	In employment
Iv	Post-Doc fellowship	-	
V	Ph.D. Scholarship for faculty	-	
Vi	Students: Faculty	30:1	Fulfils HEC criteria
vii	Technical: Non Technical ratio	8:6	Fulfils HEC criteria
viii	Average grade point	around 3	Fulfils HEC criteria

The periodic assessment of the departmental activities exhibited high efficiency of system and adequate impact of outcomes. Three students got admission in PhD.

CRITERION 2: CURRICULUM DESIGN AND ORGANISATION

Degree

Ph.D. Entomology

Pre-requisites

M.Sc. (Hons) Agric. in Entomology, NTS-
General result at 60%, Interview

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

Ph.D. Entomology

The Ph.D. programme was initiated in 1998. At present department have eight Ph.D. faculty members. The department has produced 12 Ph.Ds and 12 students are currently enrolled in the Ph.D. programme. The department is strictly following HEC instructions and guidelines in relation to admission, examination and performance evaluation of Ph.D. students.

➤ **Curriculum course requirements for Ph.D. Entomology degree is summarized below.**

Ph.D Course work includes two taught courses as well as two seminar in major subjects as well as three from other departments as minor courses i.e. Biochemistry, Statistics and Agronomy to broaden the knowledge base of the students. The Ph.D. students are required to defend synopsis at the faculty level. Evaluation of Ph.D. dissertation is accomplished externally by two foreign examiners from the technically advanced countries.

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 semesters (Fall 2010-Spring 12) Versus Outcome

Course/ Groups of courses	Out comes						
	1	2	3	4	5	6	7
Ent-701, Ent-703, Ent-708, Ent-709, Ent-719	+++	++++	++	+++	++++	+++	+++
Ent-711, Ent-714, Ent-717, Ent-720, Ent-721	+++	+++	++++	++	+++	++	++++

+ = Relevant

++ = Relevant & satisfactory

+++ = Very relevant & Very satisfactory

++++ = Highly relevant & Highly satisfactory

- The curriculum fits very well and satisfies the core requirements for the program, as specified the respective accreditation body.
- The curriculum satisfied the general arts and professional and other discipline required for the program according to demands and requirements set by the Higher Education Commission.

Standard 2-2: Theoretical backgrounds, problem analysis and solution design must be stressed within the program’s core material.

Table 6: Programme Courses corresponding to theoretical background, problem analysis and solution design.

Elements	Courses
Theoretical backgrounds	Ent-701, Ent-703, Ent-708, Ent-711
Problem analysis	Ent-701, Ent-714, Ent-709, Ent-719
Solution design	Ent-703, Ent-708, Ent-709, Ent-714, Ent-720, Ent-721

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:

- Computer and I.T. courses (3 credit hours) have been integrated in the curriculum of 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.

- Students of Ph.D 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.

SURVEY OF DEPARTMENT OFFERING Ph.D. PROGRAMS

1	General Information:	
1.1	Name of Department	Entomology
1.2	Name of Faculty	FC&FS
1.3	Date of imitation of Ph.D. program	1998
1.4	Total number of academic journals subscribed in area relevant to Ph.D. program	Most through HEC digital library
1.5	Number of Computer available for Ph.D. student	1
1.6	Total internet bandwidth available to all the students in the department	Univ. net service
2	Faculty Resources:	
2.1	Number of faculty members holding Ph.D. degree in the department	8
2.2	Number of HEC approved Ph.D. Advisors in the department	7
3	Research output:	
3.1	Total number of articles published in International Academic Journals that are authored by faculty members and students in the department	2
3.2	Total number of articles published last year in Asian Academic Journals that are authored by faculty members and students in the department	6
3.3	Total number of ongoing research projects in the department funded by different organizations	3
3.4	Number of post-graduate students in the department holding scholarships/fellowships	6
3.5	Total Research Funds available to the Department from all sources	More than 14 millions
3.6	Number of active international linkages involving exchange of	-

	researchers/students/faculty etc. (Attach Details)	
4	Student information:	
4.1	Number of Ph.D degrees conferred to date to students from the department during the past three academic years	6
4.2	Number of Ph.D students currently enrolled in the department	12
4.3	Ratio of number of students accepted to total number of applicants for Ph.D. program	1:1
5	Program information	
5.1	Entrance requirements into Ph.D. program (M.Sc/M.Phil.) indicate subjects or M.Sc/M.Phil	M.Sc. (Hons) Entomology (CGPA 3)
5.2	Is your Ph.D program based on research only/ (Y/N)	No
5.3	Maximum number of years in which a Ph.D. degree has to be completed after initial date of enrollment in Ph.D. program	5
5.4	Total number of post M.Sc. (16 year equivalent) courses required for Ph.D	18 credit hrs
5.5	Total number of M.Phil level courses taught on average in a term/semester	
5.6	Total number of Ph.D. level courses taught on average in a term/semester	8
5.7	Do your students have to take/write	
	a. Ph.D. Qualifying examination (Y/N)	No
	b. Comprehensive examination (Y/N)	Yes
	c. Research paper in HEC approved journal	Yes
	d. Any other examination (Y/N)	-
5.8	Total number of international examiners to which the Ph.D. dissertation is sent	Two
5.9	How is the selection of an examiner from technologically advanced countries carried out?	-
5.10	Is there a minimum residency requirement (on campus) for award of Ph.D. degree?	-
6	Additional information	
6.1	Any other information that you would like to provide	-

CRITERION 3: LABORATORIES AND COMPUTER FACILITIES

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

- Laboratory Title: - Biosystematics laboratory
- Apis and Non-Apis Bee Laboratory
- Biocontrol laboratory
- Insect Toxicology Laboratory
- Stored grain insect laboratory
- Apiculture laboratory at University Research Farm
- Location and Area: Faculty of Crop and Food Sciences, A-Block, 2nd Floor, Main Campus
- Objectives:
- Laboratories are used for:
- Research work for the PhD scholars
- Used for execution of the research/development projects funded by HEC, PSF, PARC, and other national and international agencies/institutions.

Future Need

- Well equipped laboratories to fulfill the future needs of research/education are necessitated for better results

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 are being procured and replaced as per availability of funds. Equipments regarding molecular approaches are lacking e.g. centrifuge (slow and ultr), PAGE-Electrophoresis apparatus, PCR, Spectrophotometer, relevant software and chemicals.

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 PhD scholars
- **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 arrangement and no security plan is in place in case of emergency. The department is located on the 2nd floor; there is no emergency exit 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 to PhD level as per mentioned 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 PhD 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 harmony among the faculty members and students especially the PhD scholars. 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 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. Admission for PhD degree is properly advertised in the newspapers having national level circulation.
- Admission criteria for PhD degree course are described in definite term 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.
- 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 deputed 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 scholars.
- 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 scholars 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 scholars who secure highest marks in various fields. Degrees are awarded to the scholars on the annual convocation that is held annually.

CRITERION 6: FACULTY

6-1: There must be enough full time faculty members 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 and seven assistant professors working in the programme, the whole faculty is PhD.

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

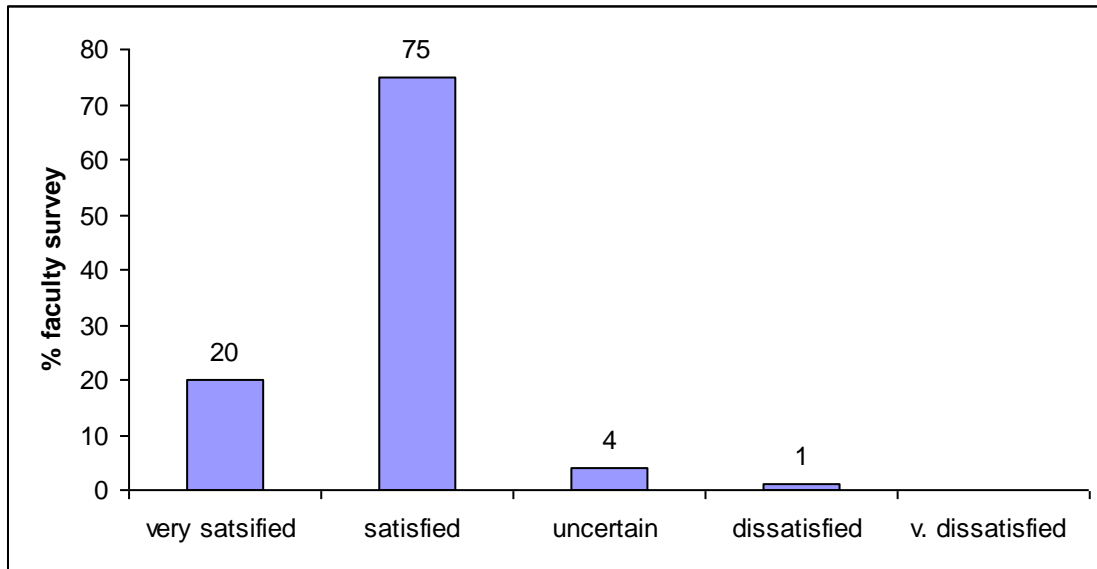
- Faculty members are provided with different academic, research and training facilities as per availability in the university system.
- Research supervisors are offered incentives for implementing different laboratory and filed experiments to promote high standard research activities.

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:

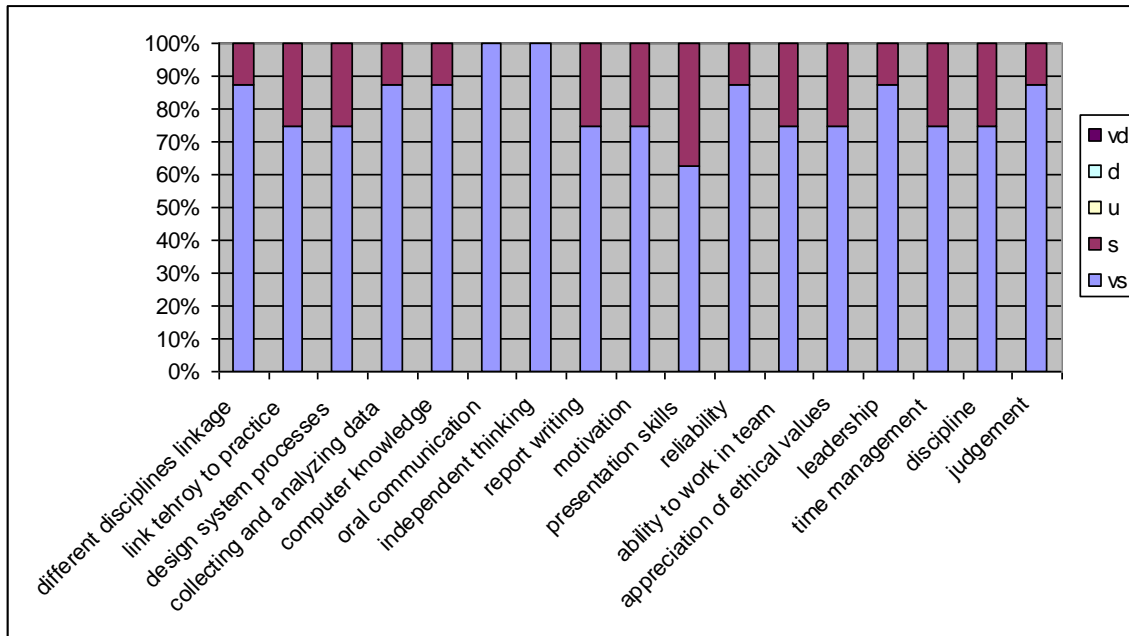
Below given figure represents the Faculty survey (Proforma 5). The results indicated that significantly 75% are satisfied as compared to others. However around 20% are very satisfied. Our HEC strengthened project will help to improve the practical workability.



At present there are one professor and seven assistant professors working in the programme. Most faculty members are experienced and professionally sound in their respective fields.

Performance of Employer Survey

Survey of performance of faculty members (performa 8) revealed that faculty was very good to excellent in performance for different activities like collection of required materials in teaching, computer utility for teaching and transfer of knowledge to students, interpersonal interactions and student management.



From the collected information, it is clear that interpeorsonal communication and relationships are important factors to contribute better knowledge and expertise transfer in faculty members as well as to the students. Motivation of ethical values can also play a pivotal role in better relationship and healthy environment. Scientific and report writing and team work can still improve the effective role of the faculty.

Summary and Conclusion

Department of Entomology presently has eight PhD faculty members and seven are HEC approved supervisors for PhD studies. PhD students are working on different aspects of entomology including taxonomic, host plant resistance, insecticide resistance and Apis and Non-Apis bees research. Strengthening of department funded by HEC helped to improve the infrastructure, laboratories and other facilities. These facilities have improved the status and research vision of the registered PhD scholars. Five laboratories related to Insect Biosystematics, Stored Product Entomology, Biological Control, Insect Toxicology and Apis and Non-Apis bee research have been established. Facilities include advanced microscopy, growth chambers, testing devices for effects of stored product insect pests, high performance liquid chromatography and breaking diapause of the insects of benefits.

There existed effective transmission of educational material, communication skills, training of young scholars in suitable environment. PhD students' performed well in their studies and teachers improved in teaching, research and transmission of applied knowledge to common public. Computers have been provided to PhD students in laboratories and also most of them now have through Government Scheme of Punjab and Higher Education Commission. This is very helpful in search of scientific materials and their technical writings by improving their efficiency and saving time. The teachers improved the course according to the need of the time. Information collected from alumni and graduating students required better management of time and resources. Communication technologies and interpersonal skills were demanded to meet the challenges better job opportunities.

Development of Apis and Non-Apis bee laboratory engaged three PhD students for applied Entomology to introduce bombiculture for better crop pollination and enhance crop yields. Honey bee research station at Koont Farm is also helpful for bee keepers to meet their needs and manage their problems. Other aspects of stored grain pest management, urban pests and dengue vector pest management are the new concerns for better crop yields and high productivity.

Faculty Resume (Performa 9)

DR. MUHAMMAD NAEEM

Name	Dr. Muhammad Naeem
Personal	Professor Department of Entomology, Pir Mehr Ali Shah, Arid Agriculture University, Rawalpindi E-mail: naem18ap@yahoo.co.uk muhammad.naeem@uair.edu.pk Phones: Office: +92-519062206 Cell: 03335751475
Experience	<u>PROFESSIONAL EXPERIENCE:</u> 1.Associate Professor (2006-2010): Served in Department of Entomology, PMAS-Arid Agriculture University, Rawalpindi, Pakistan. 2.Assistant Professor (2001-2005): Served as Assistant Professor, Department of Entomology, University of Arid Agriculture, Rawalpindi. 3.Lecturer (1998-2001): Served as Lecturer, Department of Entomology, University of Arid Agriculture,Rawalpindi..
Honor and Awards	
Membership	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:	
	S/#	Name of the Committee
	1	Tour Coordinator
	2	Time table and Date sheet Committee
	3	Comprehensive (Written & Oral) Examination Committee, Dept. Zoology, Dept. Wild life
	4	Applications Scrutiny Committee for admission to B.Sc.(Hons.) Agri.
	5	Scrutiny of Synopsis and Thesis, Department of Sociology and Anthropology
	6	Quality control
Graduate Students Postdocs Undergraduate Students	<u>STATUS FOR M.Sc.(Hons.) STUDENTS UNDER MY SUPERVISION</u>	
	(a) Department of Entomology	
Honour Students	<u>STATUS FOR Ph.D. STUDENTS UNDER MY SUPERVISION</u>	
	M.Sc.(Hons.) Students	(7 Students)
	Ph.D. Students	(3 Students)
Service Activity	Termite treatment, Household insect management in University	
Brief Statement of Research Interest	Insect biosystematics and ecology	

Publications	Bodlah, I., M. Ahmad, M. F. Nasir and M. Naeem. 2010. Record of Aenasius bambawale Hayat, 2009 (Hymenoptera: Encyrtidae) from Punjab, Pakistan. Pakistan J. Zool. 42(5). 533-536.
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	<p>I, A Khan, M. Naeem, S. A Hassan, H. Bilal, Ata-ul- Mohsin and I. Bodlah. 2012 .Survey of trophic relationship between aphid and their primary parasitoids in Potohar. J. Insect Scie.12.78.1-9.</p> <p>Bodlah, I.M. Naeem and E. Rakhshani.2011. First record of <i>Binodoxys basicurvus</i> Shujauddin, 1973 (Hymenoptera: Braconidae, Aphidiinae) from the Punjab Province of Pakistan. Pakistan J. Zool., vol. 43(1), 202-205.</p> <p>Bodlah, I, M. A. Bodlah, T. Akhtar, M. Naeem and M. R. Khan .2011 .Record of <i>Delta dimidiatipenne</i> (Saussure, 1852) (Hymenoptera: Vespidae: Eumeninae) From Barani Areas of Punjab Province of Pakistan. Pakistan J. Zool., vol. 43(5).1019-1020.</p> <p>Bodlah, I.M. Naeem and E. Rakhshani . 2012.Genus <i>Binodoxys</i> Mackauer, 1960 (Hymenoptera: Braconidae, Aphidiinae) from Punjab Province of Pakistan. Pakistan J. Zool. 44 (2): 551-57.</p> <p>Bodlah, I. M. Naeem and A. Mohsin. 2012. Distribution, Hosts and Biology of <i>Diaeretiella rapae</i> (M’Intosh) (Hymenoptera: Braconidae: Aphidiinae) in Punjab, Pakistan. P. J. Zoology. 44(5)1307-1315.</p> <p>Arif shah, Ata Ul Mohsin, I. Bodlah and Muhammad Naeem.2012. Dubas Bug, <i>Ommatissus lybicus</i> (Tropiduchidae: Hemiptera) - A new record from Panjgur, Balochistan, Pakistan. Pakistan J. Zool., vol. 44(6).1765-1769.</p> <p>Bodlah, I. M. Naeem and E. Rakhshani .2012 .Record of Genus <i>Proan</i> Haliday (Hymenopter, Braconidae, Aphidiinae) from Arid Tract of Punjab Province of Pakistan .The Journal of Animal and Plant Sciences.22 (4) - 944.947.</p> <p>Bodlah, I. M. Naeem, M. R. Khan,M. A. Bodlah and T. A. Akhter. 2012.Genus <i>Delta</i> de saussure (Hymenoptera: Eumininae, Vespidae) from Punjab province of Pakistan. P. J. Zoology.44 (33) .759-764.</p> <p>I. Bodlah, M. A. Bodlah, M. Naeem, T. Akhter, M. F. Nasir and M.T.Chaudhry .2012. First record, distribution and biology of Psyllid, <i>Trioza flecheri</i> minor Crawford, 1912 from Punjab Province. Pak. J. Zool. 44(5), 1361-1365.</p>
Research Grants and Contracts	
Other	Three species of aphid parasitoids new to science

Research or Creative Accomplishments	
Selected Professional Presentations	

RESUME OF DR. HUMAYUN JAVED

Name	Dr. Humayun Javed
Personal	House No. 376, opposite Raja CNG station, main kurree road Rawalpindi hjumayun@gmail.com Tel. 0333-5154954
Experience	1998 – To date Assistant Professor Department of Entomology Arid Agriculture University, Murree road, Rawalpindi 1987- 1998 Lecturer, Arid Agriculture University Rawalpindi
Honor and Awards	SCHOLARSHIPS AWARDED <ul style="list-style-type: none"> • First position in B.Sc. (Hons.) degree course
Membership	nil

Graduate Students supervised Postdocs Undergraduate Students	26 Nil 22 students in Entomology major subject
Service Activity	
Brief Statement of Research Interest	Host Plant Resistance IPM
Publications	1. Published papers = 6 2. Submitted for publication = 2
Research Grants and Contracts	Nil
Other Research or Creative Accomplishments	
Selected Professional Presentations	

RESUME OF DR. ATA UL MOHSIN

Name	Dr. Ata ul mohsin
Personal	House No. 7, St. # 1, Sanobar Hill, Satra Meel, Bhara Kaho, Islamabad mohsin.malik1@hotmail.com Tel. 0300-5504577, 051-255056
Experience	May 07, 2008 – To date Assistant Professor (Higher Education Commission Pakistan) Department of Entomology Arid Agriculture University, Murree road, Rawalpindi 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 February 01, 2004-June 30, 2004 Project Manager National Urban Poverty Alleviation Program – AJK (United Nations Development Programme) Planning & Development Department, New Secretariat Muzaffarabad, AJK

	<p>October, 2002 – December 2003 Assistant Project Manager/IPM Specialist Area Development Project South AJK (United Nations Development Programme) Forest Office Premises, Allama Iqbal Road Mirpur, AJK</p> <p>January 1998 to Oct. 2002 IPM Specialist Neelum and Jhelum Valleys Community Development Project, Muzaffarabad (UNDP) Area Development Project South AJK Mirpur (UNDP) Area Development Program, AJ&K. (PAK/96/005) (UNDP)</p> <p>May 1997 to December 1997 Scientific officer Integrated Pest Management Institute NARC, Islamabad</p> <p>August 1986-May 1992 Scientific officer Entomological Research Laboratories</p> <p>December 85 - August 86 Assistant Research Officer Fodder Research Institute Sargodha, Pakistan</p>
Honor and Awards	<p>SCHOLARSHIPS AWARDED</p> <ul style="list-style-type: none"> • Benevolent Fund Scholarship during Higher Secondary School Certificate • University Merit Scholarship during B.Sc. (Hons.) degree course • Pakistan Atomic Energy Commission Talent Scholarship, during Master degree course • Cultural Exchange Scholarship during Ph.D. <p>DISTINCTIONS/ AWARDS</p> <ul style="list-style-type: none"> • <i>Silver medal in university Debates Univ. of Agriculture Faisalabad Certificate of Merit, 1985-86.</i> • 2nd position in M.Sc. (Hons.) degree course among 50 students class Entomology Deptt. U.A. Faisalabad • 2nd position in B.Sc. (Hons.) degree course among 45 students class Entomology Deptt.U.A. Faisalabad • 3rd position in Arabic language Diploma Course at University of Agri. Faisalabad • Letter of Appreciation from Chairman, Pakistan Agricultural Research Council, Islamabad. • A number of shields awarded in recognition of developmental work in UNDP funded projects
Membership	<p>ASSOCIATION WITH SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS</p> <ul style="list-style-type: none"> • Member of Pakistan Congress of Zoology • Member of Pakistan Entomological Society • Professional Member of Human Resource Development

	<p>Network (HRDN), Islamabad, Pakistan.</p> <p>MEMBER OF EDITORIAL BOARD</p> <ul style="list-style-type: none"> • Co-Editor of “Idrak” a quarterly news paper of Neelum and Jhelum Valleys Community Development Project, Muzaffarabad. 1998-2001. • Editor of “Telepest” A pest management Newsletter of Neelum and Jhelum Valleys Community Development Project, Muzaffarabad.1998-2001. • Editor of Quarterly Newsletter “AKS”, ADP South AJK,Mirpur. • Editor of “NUPAP Newsletter” of National Urban Poverty Alleviation Programme, a UNDP founded project .
Graduate Students	Nil
Postdocs	Nil
Undergraduate Students	22 students in Entomology major subject
Honour Students	Nil
Service Activity	
Brief Statement of Research Interest	Biological control of insect pests
Publications	<p>3. Published papers = 12</p> <p>4. Submitted for publication = 3</p>
Research Grants and Contracts	Nil
Other Research or Creative Accomplishments	<p>Establishment of Trichogramma chilonis rearing laboratory at Entomology Dept. Directorate General of Agriculture, Muzaffarabad, AJK</p> <p>Development of Pest Management system for Walnut Borer in Neelum and Jhelum Vallies Muzaffarabad AJK</p>
Selected Professional Presentations	<p>Pest Management of insect pests in Barani Areas.</p> <p>Natural resource Development with special focus on agriculture</p>

RESUME OF DR. M. FAROOQ NASIR

Name	Dr. Muhammad Farooq Nasir
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Personal	<p>House No. 234, St. # 31, I-8/2, Islamabad</p> <p>farooq234@yahoo.com</p> <p>Mob.Tel. 0300-5215084</p>
Experience	<p>(29-08-2011 to date) Assistant Professor, PMAS Arid Agriculture University, Rawalpindi</p> <p>(15-02-2010 to 2011) Assistant Director, PMAS Arid Agriculture University, Rawalpindi</p> <p>(26-09-2008 to 15-02-2010) Assistant Professor, PMAS Arid Agriculture University, Rawalpindi</p> <p>(01-01-2006 to 30-06-2007) Higher Scientific Officer, CABI South Asia, Pakistan</p> <p>(01-03-1997 to 30-06-2004) Scientific Officer, CAB International Regional Bioscience Centre Pakistan</p> <p>(02-06-1991 to 01-10-1996) Assistant Manager Marketing & Development, Bayer-Agro Pakistan Pvt. Ltd</p> <p>(01-10-1987 – 30-06-1988) Junior Scientific Officer, Pakistan Agricultural Research Council, Islamabad, Pakistan</p>
Honor and Awards	<p>SCHOLARSHIPS AWARDED Won highly competitive Ph.D. Scholarship award of DAAD, Germany</p> <p>DISTINCTIONS/ AWARDS</p>
Membership	<p>ASSOCIATION WITH SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS</p> <p>Founder member of SAARC Net which is part of Bio-Net International, with head office in United Kingdom</p> <p>MEMBER OF EDITORIAL BOARD</p>

Graduate Students Postdocs Undergraduate Students Honour Students	Nil Nil 01 students in Entomology major subject Nil
Service Activity	
Brief Statement of Research Interest	Biological control of insect pests Molecular Population Genetics (the use of molecular techniques to study population genetics and identification of cryptic species)
Publications	5. Published papers = 10 6. Submitted for publication = 2
Research Grants and Contracts	Nil
Other Research or Creative Accomplishments	As a result of field survey of different ecological zones of Pakistan, collected and identified six <i>Trichogramma</i> species on the basis of morphological and molecular characters using ITS-2 region of rDNA Author of one new <i>Trichogramma</i> species to science Developed Pest Management system under project sponsored by Swiss Development Cooperation (SDC): <ul style="list-style-type: none"> - Cone borer in Chitral area - Walnut Borer in Swat and Chitral areas - Russian Wheat aphid - <i>Helicoverpa armigera</i> on chickpea in D. I. Khan area
Selected Professional Presentations	Presented project report of IPM Advisory Group Pakistan component at CAB International Switzerland Centre

RESUME OF DR. MUNIR AHMAD

Name	Dr. Munir Ahmad
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Personal	Department of Entomology, PMAS-Arid Agriculture University Rawalpindi Ph:03006361618 E.mail: munirahmad@uair.edu.pk
Experience	<p>01.04.2010 to date Working as a consultant for Insect Pest Management at Hydroponics Project of Farmers Marketing (Pvt) Ltd</p> <p>28/09/2011 to date Assistant Professor, Department of Entomology, Pir Mehr Ali Shah, Arid Agriculture University Rawalpindi</p> <p>18.09.2008-27/09/2011 Lecturer, Department of Entomology, Pir Mehr Ali Shah, Arid Agriculture University Rawalpindi</p> <p>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”</p> <p>May 2004 – May 2008 (PhD Thesis) University College of Agriculture, Bahauddin Zakariya University, Multan.</p> <p>Sep 2002 – April 2004 Scientific Officer, Central Cotton Research Institute, Old Shujabad Road, Multan under CFC Project “Sustainable control of cotton bollworm, <i>Helicoverpa armigera</i> under small scale cotton production systems”</p> <p>Sep 2000 – Sep 2002 Technical Sales Officer, Helb Pesticide and Chemicals Co. Mall Plaza, Multan Cantonment, Multan Fieldwork for pesticides’ sales and marketing</p>
Honor and Awards	<p>SCHOLARSHIPS AWARDED</p> <ol style="list-style-type: none"> 1 International Research Support Initiative Program for PhD studies, Higher Education Commission, Government of Pakistan (Jan, 31st – July 04th, 2007). 2. Merit Scholarship under 200 Scholarship Scheme for PhD Studies, Ministry of Science and Technology, (Higher Education Commission) Government of Pakistan (September, May, 2004 – May 16, 2008) 3. Merit Scholarship for F. Sc studies by Board of Education, Multan, Pakistan (1991-1993)
Membership	<p>ASSOCIATION WITH SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS</p> <ul style="list-style-type: none"> • Member of Pakistan Congress of Zoology • Member of Pakistan Entomological Society

	<ul style="list-style-type: none"> • Member of Pakistan University Teachers Forum • Member of Young Scientist Society, Pakistan
Graduate Students	Six (6)
Postdocs	Nil
Undergraduate Students	Nil
Honour Students	Nil
Service Activity	Responsible for department time table and date sheet Serving as consultant at FMP, University Hydroponics farm
Brief Statement of Research Interest	Insecticide resistance and Pollinators conservation
Publications	Published papers = Nine (9) international with more than 10 impact factor and above 100 citations Submitted for publication = 2 (two)
Research Grants and Contracts	Two
Other Research or Creative Accomplishments	Developed management strategy of insecticide resistance in leaf worm, <i>Spodoptera litura</i> in Punjab, Pakistan
Selected Professional Presentations	NA

RESUME OF DR. MUHAMMAD ASIF AZIZ

Name	Dr. Muhammad Asif Aziz
Personal	House No. 27, St. # 1, Bilal Colony, Dhok Kashmirian, Rawalpindi asifaziz572@gmail.com Tel. 0322-6862246

Experience	<p>Assistant Professor (Regular) in Department of Entomology in PMAS Arid Agriculture University Rawalpindi from 20-06-2012 to date.</p> <p>Assistant Professor (Adhoc) in Department of Entomology in PMAS Arid Agriculture University Rawalpindi from 31-05-2012 to 20-06-2012.</p> <p>Lecturer (Regular) in Department of Entomology in PMAS Arid Agriculture University Rawalpindi from 04-05-2012 to 30-05-2012.</p> <p>Lecturer (Contract) in Department of Entomology in PMAS Arid Agriculture University Rawalpindi from 12-07-2011 to 03-05-2012.</p> <p>Lecturer (Leave Vacancy) in Department of Entomology in PMAS Arid Agriculture University Rawalpindi from 26-01-2008 to 11-07-2011.</p>
Honor and Awards	<p>SCHOLARSHIPS AWARDED</p> <ul style="list-style-type: none"> • Benevolent Fund Scholarship during Higher Secondary School Certificate • University Merit Scholarship during B.Sc. (Hons.) degree course • UGC Merit Scholarship during M. Sc. (Hons.) degree
Membership	<p>ASSOCIATION WITH SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS</p> <ul style="list-style-type: none"> • Member of Pakistan Congress of Zoology • Member of Pakistan Entomological Society
Graduate Students Postdocs Undergraduate Students Honour Students	<p>8 Nil 23 students in Entomology major subject 6</p>

Research Grants and Contracts	1. PMAS-AAUR funded project entitled: “Exploration of pesticidal effect of different neem products for the management of wheat aphids
Publications (2010-12)	<ol style="list-style-type: none"> 1. Aziz, M. A., M. Hasan, A. Ali and J. Iqbal. 2012. Comparative efficacy of different strategies for management of spotted bollworms, <i>Earias</i> spp. On okra, <i>Abelmoschus esculentus</i> (L.) Moench. Pak. J. Zool. 44 (5)1203-1208. 2. S. Bushra, M. Aslam, M.A. Aziz and M. Ahmed.2012. Grain damage, viability and weight loss in different barley cultivars due to <i>Sitotroga cerealella</i> (Oliv.) infestation, Archives Of Phytopathology And Plant Protection, DOI:10.1080/03235408.2012.736282 3. Hameed, A., M.A. Aziz, and G. M. Aheer. 2012. Impact of ecological conditions on biology of cotton mealy bug, <i>Phenacoccus solenopsis</i> (Hemiptera: Pseudococcidae) in laboratory. Pak. J. Zool. 44(3)685-690. 4. Aziz, M. A., M. Hasan, A. Ali, A. Suhail and S. T. Sahi. 2012. Role of different physico-chemical characters in host plant preference of <i>Earias</i> spp. on okra. Pak. J. Zool. 44(2): 361-369. 5. Saifullah, H. Javed and M. A. Aziz .2012. Role of physico-morphic characters of different okra genotypes in relation to population of <i>Amrasca biguttula biguttula</i> Ishida. J. Agric. Res. 50(2)217-224. 6. Javed, H. M. Younas and M. A. Aziz. 2012. Evaluation of different potato cultivars against potato tuber moth (<i>Phthorimaea operculella</i> Zeller). J. Agric. Biol. Sci. 3(1)45-49. 7. Aziz, M. A., M. Hasan, and A. Ali. 2011. Impact of abiotic factors on incidence of fruit and shoot infestation of spotted bollworms <i>Earias</i> spp. on okra (<i>Abelmoschus esculentus</i> L.). Pak. J. Zool. 43(5): 863-868. 8. Hameed, A., M.A. Aziz, and G. M. Aheer. 2010. Susceptibility of <i>Bemisia tabaci</i> Gen. (Diptera: Aleyrodidae) to selected Insecticides. Pak. J. Zool. 42(3):295-300.

RESUME OF DR. DR. MUHAMMAD TARIQ

Name	Dr. Muhammad Tariq
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Personal	House No. 163, St. # 20, Sector G-10/2, Islamabad mtariq@uair.edu.pk Tel. 0334-7471271
Experience	October 18, 2011 – To date Assistant Professor Department of Entomology, PMAS-Arid Agriculture University Rawalpindi, Murree road, Rawalpindi October 18, 2006 - To October 17, 2011 Department of Entomology, PMAS-Arid Agriculture University Rawalpindi, Murree road, Rawalpindi
Honor and Awards	
Membership	ASSOCIATION WITH SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS <ul style="list-style-type: none"> • Royal Entomological Society • British Ecological Society
Graduate Students Postdocs Undergraduate Students Honour Students	Nil Nil 3 students in Entomology major subject Nil
Service Activity	
Brief Statement of Research Interest	Insect Plant Interactions
Publications	7. Published papers = 8 8. Submitted for publication = 4
Research Grants and Contracts	Nil
Other Research or Creative Accomplishments	Water stress, root herbivory and above-ground multitrophic interactions in a crucifer-aphid system
Selected Professional Presentations	<ul style="list-style-type: none"> • Drought alters interactions between root and foliar herbivores: links with the plant chemistry flash presentation in 12th European Ecological Federation Congress, Avila, Spain, September 25-29, 2011. • “Drought modifies multitrophic interactions above and below ground” poster presentation in Ento 2010 The Royal

	<p>Entomological Society Annual National Science meeting, Swansea University, UK, 26-28 July 2010.</p> <ul style="list-style-type: none"> • “Aphids in a changing world: testing the plant stress, plant vigour and pulsed stress hypotheses” oral presentation in Ento 2010 The Royal Entomological Society Annual National Science meeting, Swansea University, UK, 26-28 July 2010. • “Drought modifies tritrophic interactions above and below ground” poster presentation in Graduate School of Life Science & Medicine Summer Research Symposium at South Kensington Campus, Imperial College London, UK, 9 July 2010. • “Aphids in a changing world: testing the plant stress, plant vigour and pulsed stress hypotheses” oral presentation in BioResources Young Researchers 2010 at University of Reading, UK organized by Society of Chemical Industry’s BioResources Group, 30 June 2010.
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RESUME OF DR. ASIM GULZAR

Name	Dr. Asim Gulzar
Personal	House No. 3b University colony No 3. Hostel road Rawalpindi asim@uaar.edu.pk Tel. 0331-5444283
Experience	<p>October, 2011 – To date Assistant Professor Department of Entomology Arid Agriculture University, Murree road, Rawalpindi</p> <p>December, 2004-October 2011 Assistant Director Research/ Lecturer, Arid Agriculture University Rawalpindi</p> <p>August, 2004-December 2004 Research associate, Agriculture University Faisalabad</p> <p>March, 2004-August 2004 Cotton Inspector, Punjab agriculture Department</p> <p>October, 2002 – March 2004 Technical Sales officer, Syngenta Pakistan</p>
Honor and Awards	<p>SCHOLARSHIPS AWARDED</p> <ul style="list-style-type: none"> • University Merit Scholarship during B.Sc. (Hons.) degree

	<p>course</p> <ul style="list-style-type: none"> Higher Education foreign scholarship for Ph.D.
Membership	<p>ASSOCIATION WITH SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS</p> <ul style="list-style-type: none"> Member of Royal Entomological Society London
Graduate Students supervised Postdocs Undergraduate Students	<p>1 Nil 22 students in Entomology major subject</p>
Service Activity	
Brief Statement of Research Interest	<p>Insecticide resistance, Insect Toxicology Biological control of insect pests</p>
Publications	<p>9. Published papers = 2 10. Submitted for publication = 5</p>
Research Grants and Contracts	<p>Nil</p>
Other Research or Creative Accomplishments	
Selected Professional Presentations	

RESUME OF DR. IMRAN BODLAH

Name	IMRAN BODLAH
Personal	District Layyah, wariach garden near police line, 03228758287
Experience	<p>MAY, 2011 Assistant professor upto date April, 2008, Lecturer, Department of Entomology-PMAS-AAUR October 2004, Water Management Officer, Own farm water management district Muzafar Garh.</p>

Honor and Awards	Teachings assistantship scholarship during PhD
Membership	Botanical Societ of Pakistan
Graduate Students Postdocs Undergraduate Students	13
Honour Students	1
Service Activity	Teaching classes to B.Sc (Hons) and M.Sc. (Hons)
Brief Statement of Research Interest	Biosystematics of Aphids ,aphid parasitoids and hyperparasitoids and their Biology

Publications	<p>Bodlah, I., M. Ahmad, M. F. Nasir and M. Naeem. 2010. Record of <i>Aenasius bambawale</i> Hayat, 2009 (Hymenoptera: Encyrtidae) from Punjab, Pakistan. <i>Pakistan J. Zool.</i> 42(5). 533-536.</p> <p>E. Rakhshani, H. Barahoei, Z. Ahmed, Ž. Tomanović, M.</p> <p>Janković, A. Petrović, P. Starý and I. Bodlah.2012. New species and additional evidence of aphid parasitoid (Hymenoptera: Braconidae: Aphidiinae) from India. <i>Zootaxa.</i>3397.45-54.</p> <p>E, Rakhshani, S. Kazemzadeh, P. Starý, H. Barahoei, N. G. Kavallieratos, A.Ćetković,I. Bodlah and Ž. Tomanović.2012. Parasitoids (Hmenoptera: Braconidae:Aphidiinae) of northeastern Iran: Aphidiine-aphid- plant associations, key and description of a new species. <i>Journal of Insect Science.</i> Vol. 12 (143).1-26.</p> <p>I, A Khan, M. Naeem, S. A Hassan, H. Bilal, Ata-ul- Mohsin and I. Bodlah. 2012 .Survey of trophic relationship between aphid and their primary parasitoids in Potohar. <i>J. Insect Scie.</i>12.78.1-9.</p> <p>Bodlah, I.M. Naeem and E. Rakhshani.2011. First record of <i>Binodoxys basicurvus</i> Shujauddin, 1973 (Hymenoptera: Braconidae, Aphidiinae) from the Punjab Province of Pakistan. <i>Pakistan J. Zool.</i>, vol. 43(1), 202-205.</p> <p>Bodlah, I, M. A. Bodlah, T. Akhtar, M. Naeem and M. R. Khan .2011. Record of <i>Delta dimidiatipenne</i> (Saussure, 1852) (Hymenoptera: Vespidae: Eumeninae) From Barani Areas of Punjab Province of Pakistan. <i>Pakistan J. Zool.</i>, vol. 43(5).1019-</p>
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	<p>1020.</p> <p>Bodlah, I.M. Naeem and E. Rakhshani . 2012.Genus <i>Binodoxys</i> Mackauer, 1960 (Hymenoptera: Braconidae, Aphidiinae) from Punjab Province of Pakistan. <i>Pakistan J. Zool.</i> 44 (2): 551-57.</p> <p>Bodlah, I. M. Naeem and A. Mohsin. 2012. Distribution, Hosts and Biology of <i>Diaeretiella rapae</i> (M'Intosh) (Hymenoptera: Braconidae: Aphidiinae) in Punjab, Pakistan. <i>P. J. Zoology.</i> 44(5)1307-1315.</p> <p>Arif shah, Ata Ul Mohsin, I. Bodlah and Muhammad Naeem.2012. Dubas Bug, <i>Ommatissus lybicus</i> (Tropiduchidae: Hemiptera) - A new record from Panjgur, Balochistan, Pakistan. <i>Pakistan J. Zool.</i>, vol. 44(6).1765-1769.</p> <p>Bodlah, I. M. Naeem and E. Rakhshani .2012 .Record of Genus <i>Proan</i> Haliday (Hymenopter, Braconidae, Aphidiinae) from Arid Tract of Punjab Province of Pakistan .<i>The Journal of Animal and Plant Sciences.</i>22 (4) - 944.947.</p> <p>Bodlah, I. M. Naeem, M. R. Khan,M. A. Bodlah and T. A. Akhter. 2012.Genus <i>Delta</i> de saussure (Hymenoptera: Eumininae, Vespidae) from Punjab province of Pakistan. <i>P. J. Zoology.</i>44 (33) .759-764.</p> <p>I. Bodlah, M. A. Bodlah, M. Naeem, T. Akhter, M. F. Nasir and M.T.Chaudhry .2012. First record, distribution and biology of Psyllid, <i>Trioza flecheri</i> minor Crawford, 1912 from Punjab Province. <i>Pak. J. Zool.</i> 44(5), 1361-1365.</p>
Research Grants and Contracts	N/A
Other Research or Creative Accomplishments	Three species of Aphid parasitoids
Selected Professional Presentations	N/A

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 now available free of cost for the faculty as well for postgraduate students

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 affect 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 recourses 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, tThe 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 Ph.D. students.

Ph.D. admission is offered in each semester.

RESEARCH STUDENTS REVIEW

Proforma 4 was used to conduct survey to review the progress of Ph.D scholars. General inferences are drawn hereunder.

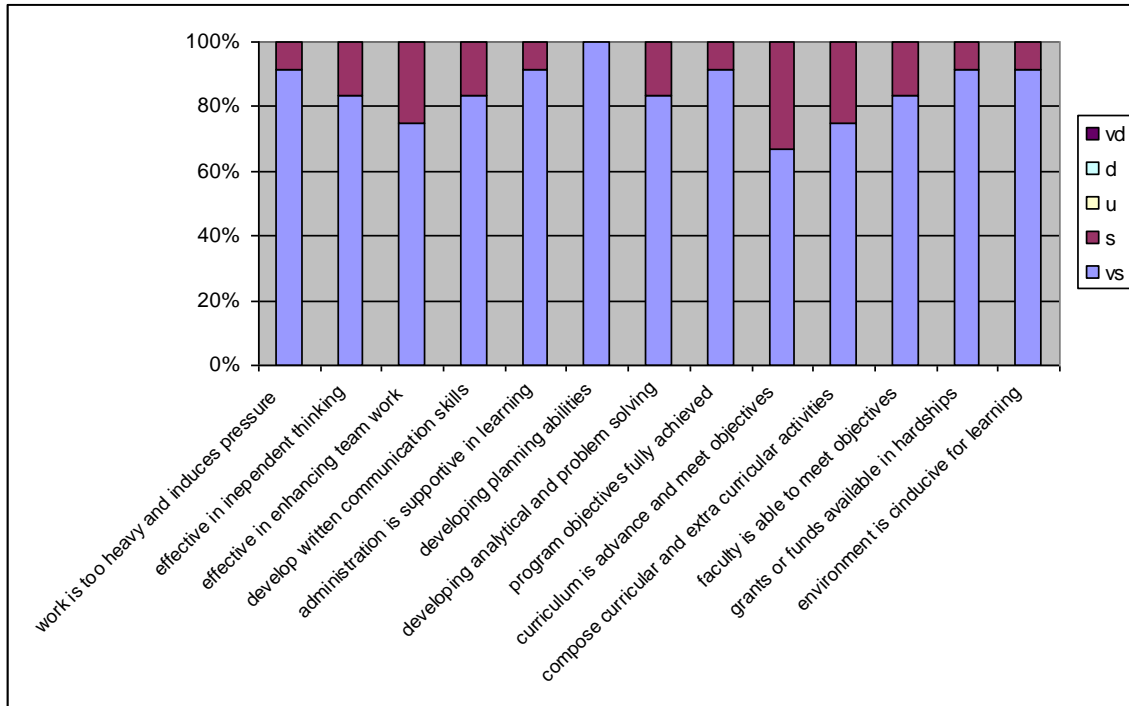
- Majority of the scholars were found satisfied with the level of supervision maintained at department.
- The scholars had access to the available sophisticated equipments through a well managgemed system.
- The scholars have access to scientific literature through central laboratory.
- Some scholars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

- Some scholars 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, bumblebee and apiculture research and biosystematics study of insects.

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

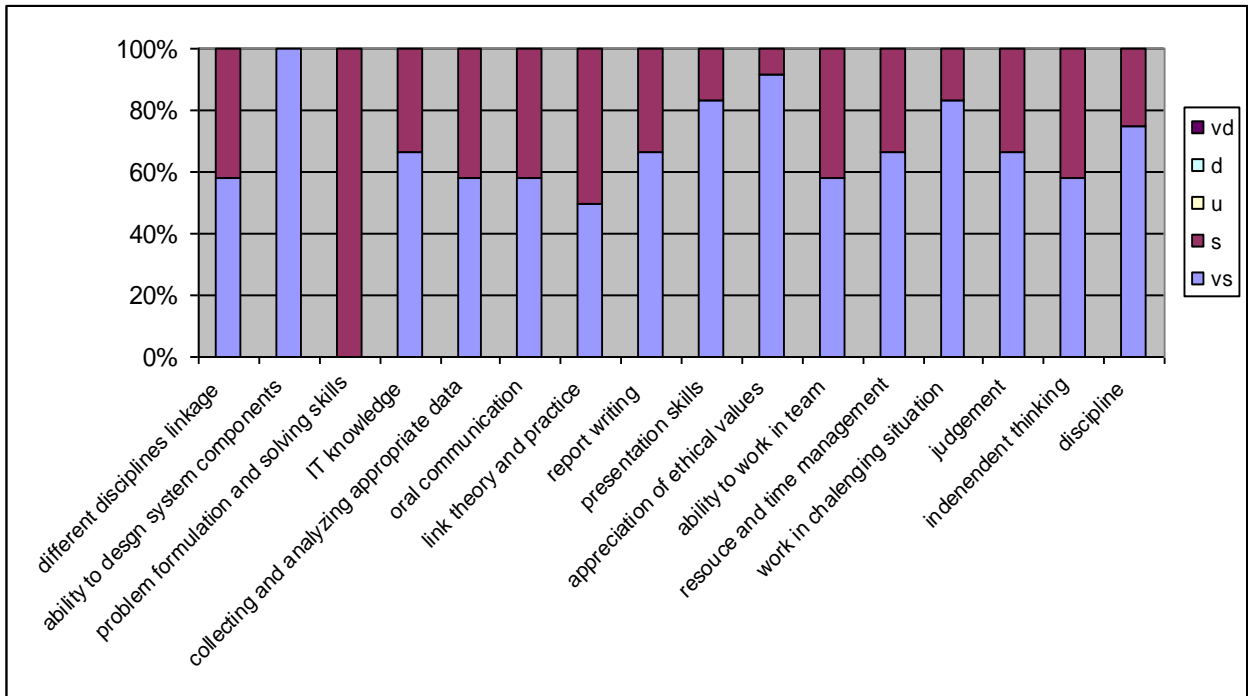
Although administration provides adequate financial resources, yet there is need to increase budget to carry out advance level research.

Survey of Graduating Students



Discussion with the graduated PhDs was made and the information regarding their needs in studies discussed. They stresses more emphais on incorporation of lastest technologies for better transfer of information, training and knowledge. They also required planning abilities through research and curriculum for achievement of results. More funds and space for research is required to meet the requirements of the research performance.

Alumni Survey



Survey of alumni highlighted the need of better oral and report writing skills, ability to work under stress and face deadlines for better job opportunities. They, however, showed satisfaction with their interaction with the faculty in terms of cooperation for skills development and report writing. They also stresses for better time management, judgement and disciplined life of the studens.