

PIR MEHR ALI SHAH
ARID AGRICULTURE UNIVERSITY
RAWALPINDI



Self Assessment Report
DOCTOR OF VETERINARY MEDICINE (DVM)
2010-2012

Faculty of Veterinary and Animal sciences

Prepared by: Members of Program Self Assessment Team

Dr. Tanveer Ahmad	(Coordinator)
Dr. Riaz Hussain	(Member)
Dr. Muhammad Yaqoob	(Member)
Mr. Zaib-Ur-Rehman	(Member)

TABLE OF CONTENTS

	Introduction	01
Criterion-1:	Program Mission, Objectives and outcomes	03
Criterion 2:	Curriculum Design and Organization	86
Criterion 3:	Laboratories and Computing Facilities	94
Criterion 4:	Students Support and Advising	102
Criterion 5:	Process Control	106
Criterion 6:	Faculty	110
Criterion 7:	Institutional Facilities	120
Criterion 8:	Institutional Support	123
	Summary and Conclusions	125

LIST OF TABLES

Table No. 1	Program Objectives assessments	05
Table No. 2	Relationship between program objectives & Program out comes	06
Table No. 3	Faculty distribution by program areas	110
Table No. 4	Faculty Members in Each Department	112
Table No. 5a	Results of Faculty Survey	113
Table No. 5b	Results of Faculty Survey	114
Table No. 6	Results of Faculty Survey	115
Table No. 7	Results of Faculty Survey	116
Table No. 8	Results of Faculty Survey	117
Table No. 9	Results of Faculty Survey	118

LIST OF FIGURES

Figure No. 1	Performance level of different teachers in Livestock Production and Management Department	07
Figure No. 2	Performance level of different teachers in Poultry Science Department	15
Figure No. 3	Performance level of different teachers in Biomedical Sciences Department	19
Figure No. 4	Performance level of different teachers in Pathobiology Department	26
Figure No. 5	Performance level of different teachers in Clinical Studies Department	32

ANNEXURES

Annexure I:	Faculty Resume	129
-------------	----------------	-----

INTRODUCTION

Livestock and poultry raising in Pakistan are the biggest industries and an integral part of the rural economy contributing significantly to the agriculture and the national GDP. The various types of livestock existing in the country provide farm products i.e. food, draft power, fuel and fertilizer. Farm animals (Livestock) also provide regular income and employment, particularly for small farmers and landless labourers. Without livestock it would not have been possible to profitably utilize the crop residues, stubbles, roadside and scattered vegetation on rangelands including hilly and sub-hilly areas in the country. Keeping in mind the marvelous role of livestock in the economy of the country, the Faculty of Veterinary & Animal Sciences started functioning in 2006. Presently, the Faculty is offering core courses to the students of Doctor of Veterinary Medicine (DVM) and a supporting course to B.Sc. (Hons) Agriculture.

The Faculty of Veterinary & Animal Sciences comprised of five departments namely, Department of Livestock Production and Management, Clinical Sciences, Biomedical Sciences, Poultry Sciences & Pathobiology. The programs of these departments are designed to provide students with basic and applied knowledge for a strong foundation in veterinary and animal sciences that emphasizes the application of fundamental principles of veterinary study. The curriculum of these departments highlights the emerging techniques of animal and veterinary sciences. Moreover, the departments are committed to quality teaching and research. The departments are regularly revising and updating its curriculum keeping in view the latest developments in the field of veterinary and animal sciences. The departments are offering variety of courses, the contents of which are at par with the likely courses offered by other international universities. These courses are taught in a way to enhance students' professional skills. The faculty is also engaged in research projects.

The Self Assessment Report (SAR) is based on eight criteria. The first criterion outlines the program mission and objectives. Criterion-2 provides information about the curriculum development. Criterion-3 enlists the laboratories and other relevant information. The fourth criterion is pertinent to the information about students' support and advising. The last four criteria provide information about process control, faculty characteristics and institutional facilities and support provided by the university.

Criterion 1: Program Mission, Objectives and Outcomes

Criterion 1: Program Mission, Objectives and Outcomes

The self assessment is based on a number of criteria. To meet each criterion several standards must be satisfied. This section describes how the standards of the Criterion 1 are met.

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

The overall goal of the Faculty of Veterinary and Animal Sciences (FV&AS) is to produce trained manpower and to assist in poverty alleviation through motivation for creation of opportunities for generating and increasing income within the micro-, small-, medium- and large-scale livestock farming. Furthermore, the FV&AS will also contribute towards food security and treatment facility.

Mission Statement of the Program

To build concepts of the subject through high quality class teaching, work in the laboratory, clinics and at livestock farms and to train individuals in the field of livestock production, clinics, pathobiology, and poultry sciences.

Program Objectives

The program objectives of the FV&AS are as under:

1. To provide students with basic and applied knowledge for a strong foundation in veterinary and animal sciences that emphasizes the application of fundamental principles of livestock production and health.
2. To fulfill the educational needs of students by educating them on issues facing livestock farming, health and to provide students with skills to be competent and enter into the practical life well prepared with hand on knowledge and expertise in areas of veterinary and animal sciences.

3. To provide students with knowledge relevant to animal farming practices that includes awareness in areas of animal welfare and ethical aspects related to care and use of animals in research, the role and impact of livestock farming on the society and environment.

Main elements of strategic plan to achieve mission and objectives

- Development, strengthening and implementation of a sound 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 regularly updating the curricula involving core and elective subjects, field demonstrations, study trips and internship programs.
- Establishing and strengthening well equipped specialized research laboratories to conduct research.
- Post-graduate research including special problems, research reports and dissertation.
- Publication of review papers, popular articles and scientific papers in well reputed journals of national and international repute. In line with research publications, authoring and editing of books, monographs and laboratory manuals.
- Execution of research projects funded by the universities and other agencies.
- Provocation of linkages with national and international research organizations to solve indigenous problems of livestock sector.

PROGRAM OBJECTIVES ASSESSMENT

The assessment of program objectives through different criteria is presented in Table. 1

Table 1. Program objectives assessment

S. #	Objective	How Measured	When Measured	Improvement Identified	Improvement made
1	Development & strengthening of Livestock Production & health discipline at PMAS-AAUR	Based on issues and problems faced by livestock sector in the country	Continuous process as per requirement	More teaching faculty required. In addition teaching and training methods need to be improved	Teaching methods have been revised on modern lines but recruitment of new faculty is in pipeline.
2	Foresee the new lines of education and areas of research	Through surveillance of issues of livestock industry, judging manpower, communication to evaluate farmers opinions	Regular feature	Latest subjects should be incorporated in syllabus, to study the new challenges	Endorsement of new syllabus to incorporate modern techniques
3	To impart basic and the applied knowledge to the graduate students	Background information and status of knowledge of students through entry tests and students feedback	At the time of admission or semester	Some basic courses need to be included in the curriculum	Revision of curriculum as per requirement on international standards

Standard 1-2: The program must have documented outcomes for graduating students. It must be documented that the outcomes support the program objectives and that graduating students are capable of performing these outcomes.

Program Learning Outcomes

Degree of skills and capabilities that will reflect on student's performance as animal production scientists:

1. Students shall possess discipline specific knowledge in major areas of study including animal production, health and clinical services.
2. Students shall have the ability to identify and resolve the problems related to livestock farming and poor animal productivity by designing an appropriate line of action to the identified issue(s).
3. Students shall possess the ability to analyze problems relevant to animal health, feed

and fodder resources, critically evaluate information and utilize scientific principles of animal production and health to formulate solutions.

4. Students shall be able to optimize nutrient utilization and have skills to use computer software(s) for least cost balanced feed formulation.
5. Students shall be able to analyze the health issues of animals and able to diagnose and treat animal ailments.
6. Students shall have an ability to integrate farm management to optimize the use of all farm resources for optimum animal productivity and to develop animal production systems that are sustainable and either maintain or enhance our environment and renewable resources.
7. Students shall be aware of the ever-changing demands of livestock production followed by meeting the demands.

The relationship between program outcomes and objectives are given in Table 2.

Table 2.Relationship between program objectives and program outcomes

Program objectives	Outcomes						
	1	2	3	4	5	6	7
1	+++	+++	++	+	++	+	+++
2	++	+	+	+++	+++	+++	+++
3	+	++	++	+	++	+++	++

+ = Moderately satisfactory, ++ = Satisfactory, +++ = Highly satisfactory, Blank cell= No contribution

PROGRAMME OUTCOME MEASUREMENT

For programme's evaluation, especially from view point of achievements of objectives, assessment was made through prescribed proforma provided by the Quality Enhancement Cell (QEC) of Pir Mehr Ali Shah, Arid Agriculture University.

PROGRAM ASSESSMENT RESULTS

Teachers' Evaluation (Fall-2010 to spring 2012)

Teachers' performance was assessed through students' comments on prescribed evaluation Performa. This evaluation was done for different courses of the individual teachers filling in Performa 10 (provided by QEC).

Department of Livestock Production & Management

The seven teachers in the department numbered from 1-7 were evaluated during 2010 to 2012. The names of the teachers along their allotted numbers are Prof. Dr. Arshad Iqbal (1), Dr. Tanveer Ahmad (2) Dr. Farooq Iqbal (3), Dr. Muhammad Moaeen-ud-Din (4), Dr. Muhammad Fiaz (5), Mr. Kashif Ishaq (6) and Hafiz Muhammad Waheed (7). The results showed that the teacher 5 was on top scoring 4.567. The lowest performance with a score of 3.444 was observed in case of teacher 4 (Figure-1).

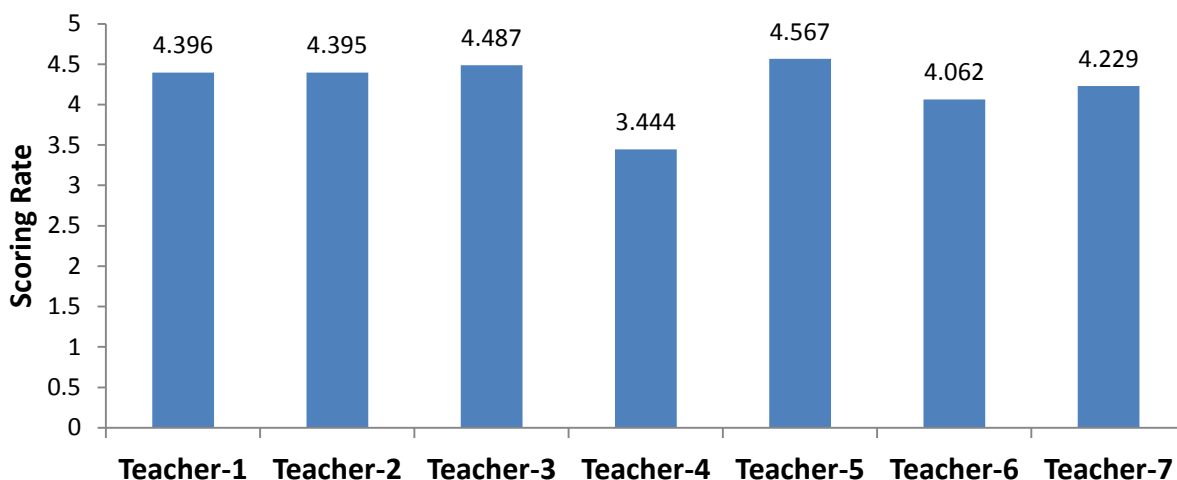
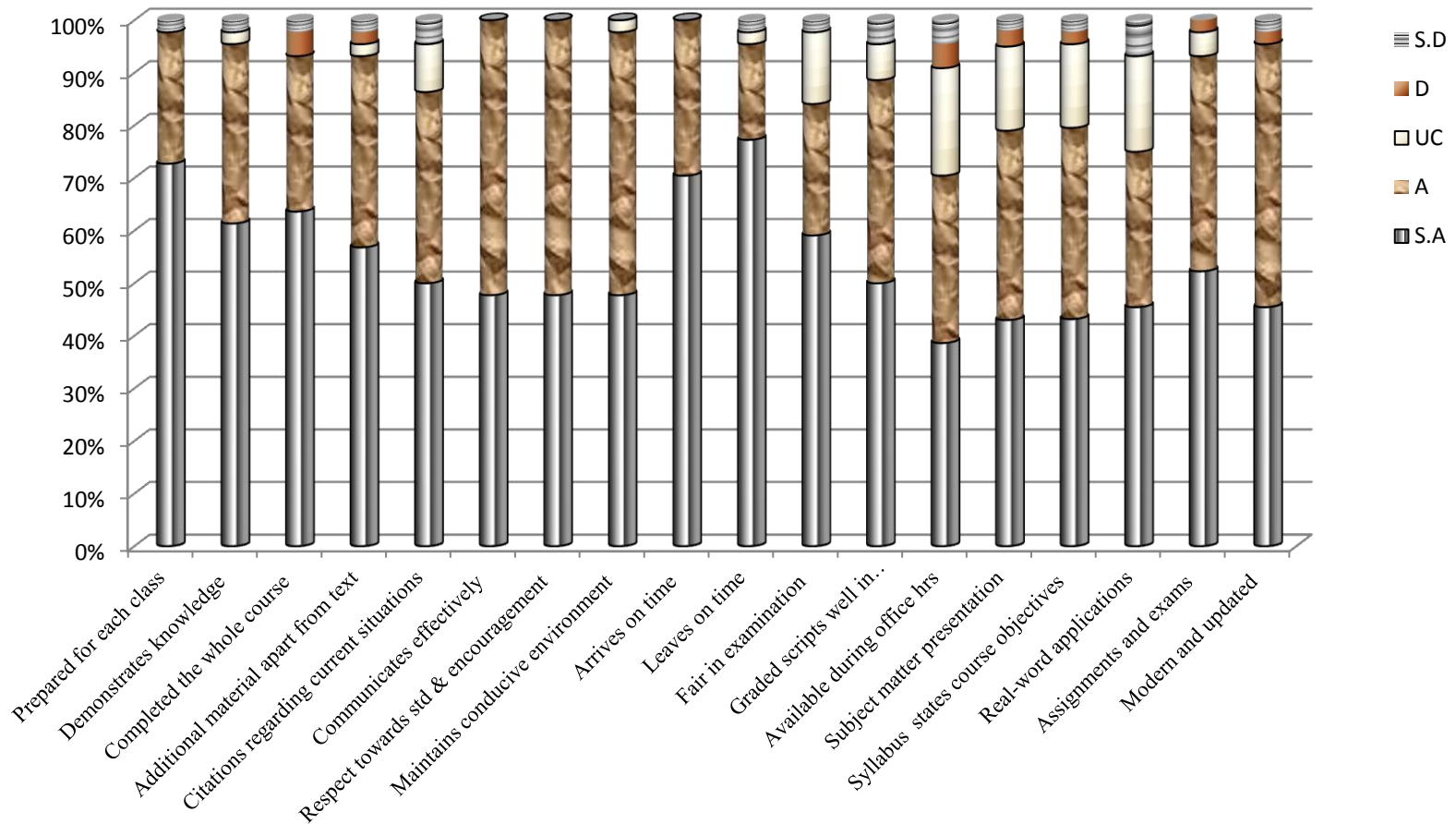


Figure 1: Performance level of different teachers in Livestock Production & Management Department.

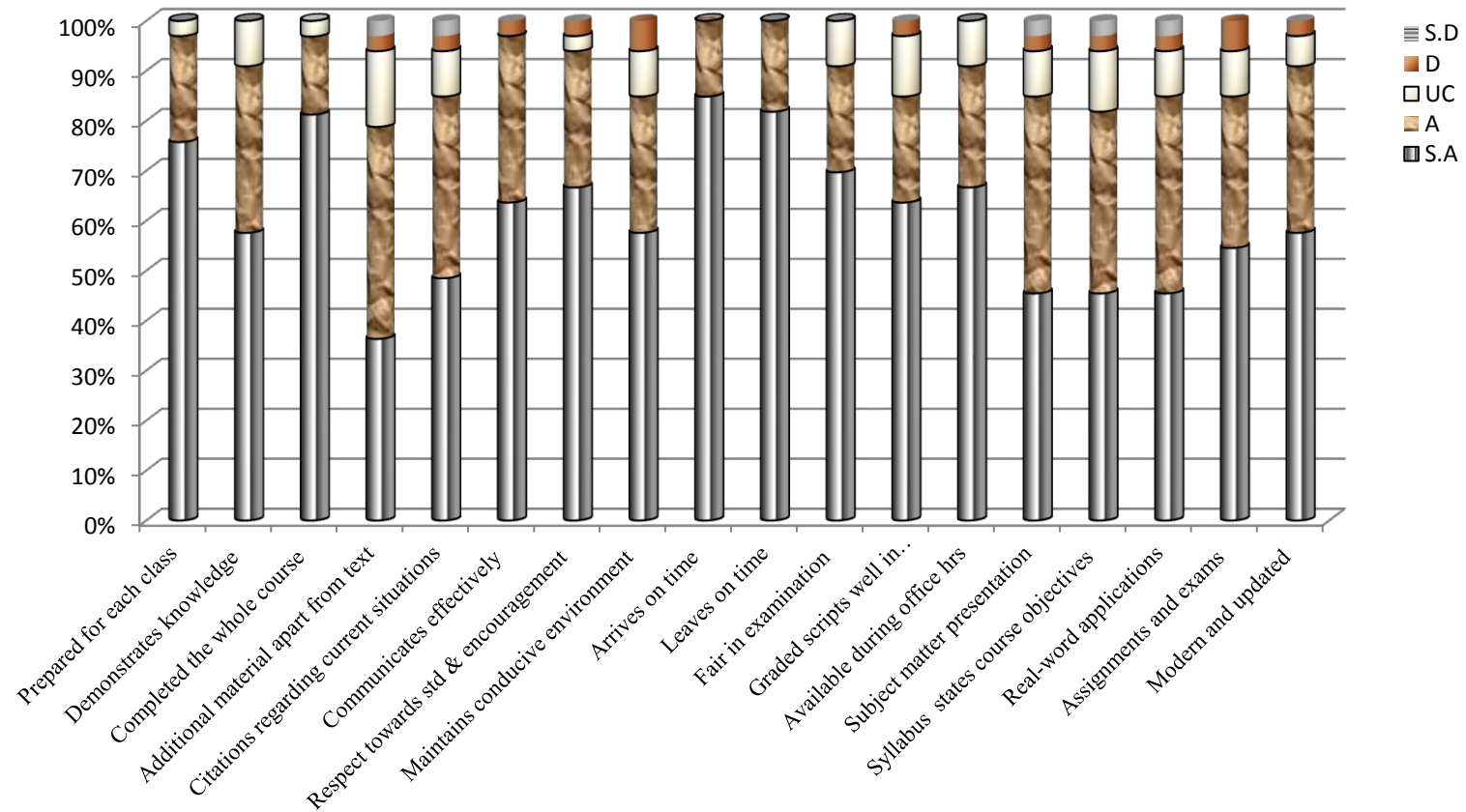
Department of Livestock Production & Management



Evaluation of Teacher- 1

This graph reflected excellent performance of the teacher in all respects. 73 % of the students stated that teacher is prepared for each class. 61% students reported that teacher demonstrates knowledge of the subject effectively.

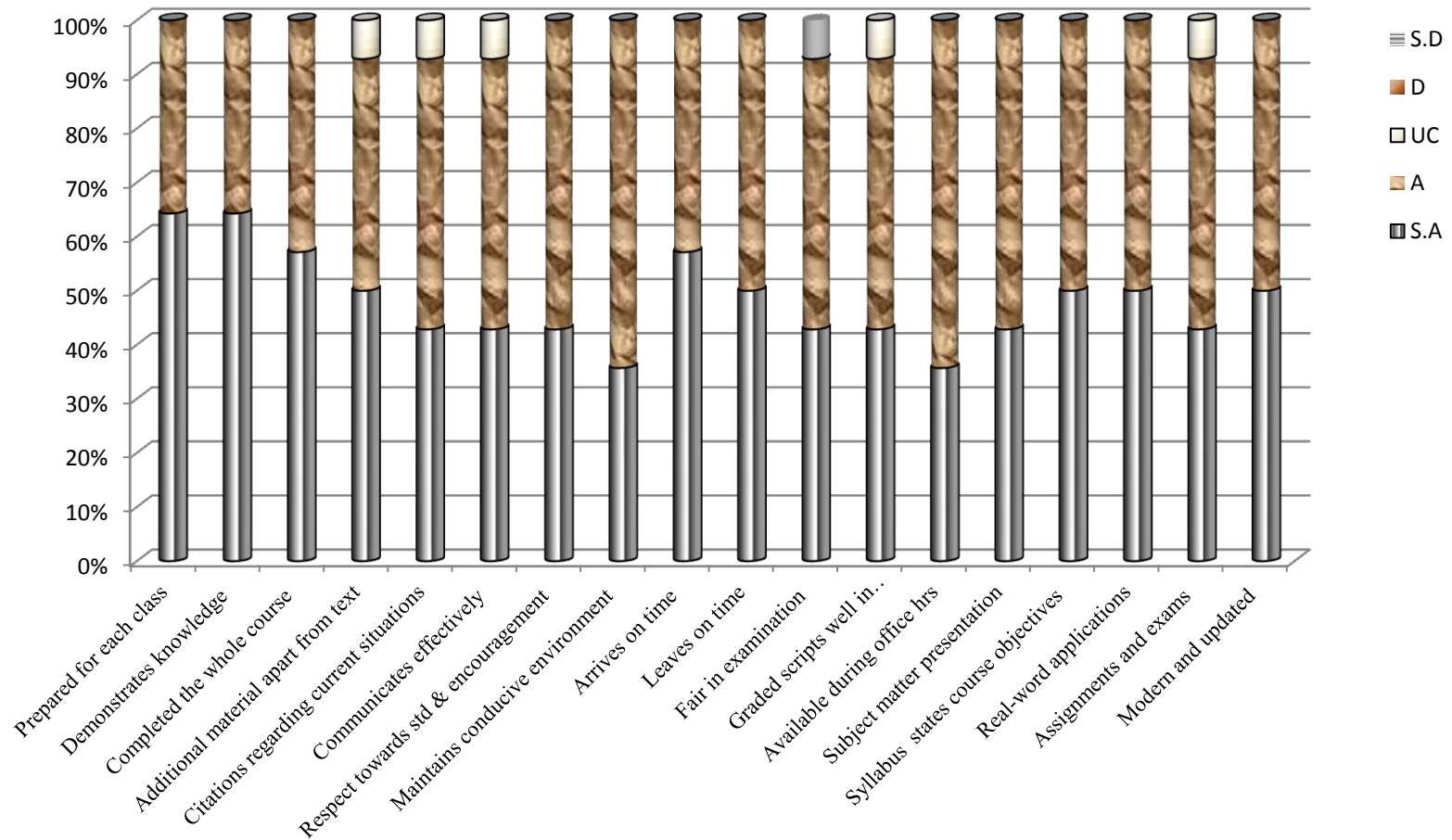
Department of Livestock Production & Management



Evaluation of Teacher 2

Overall performance of teacher was excellent. About 64 % students reported that the teacher communicates the subject matter effectively. 67 % of the class was happy that teacher encouraged students participation.

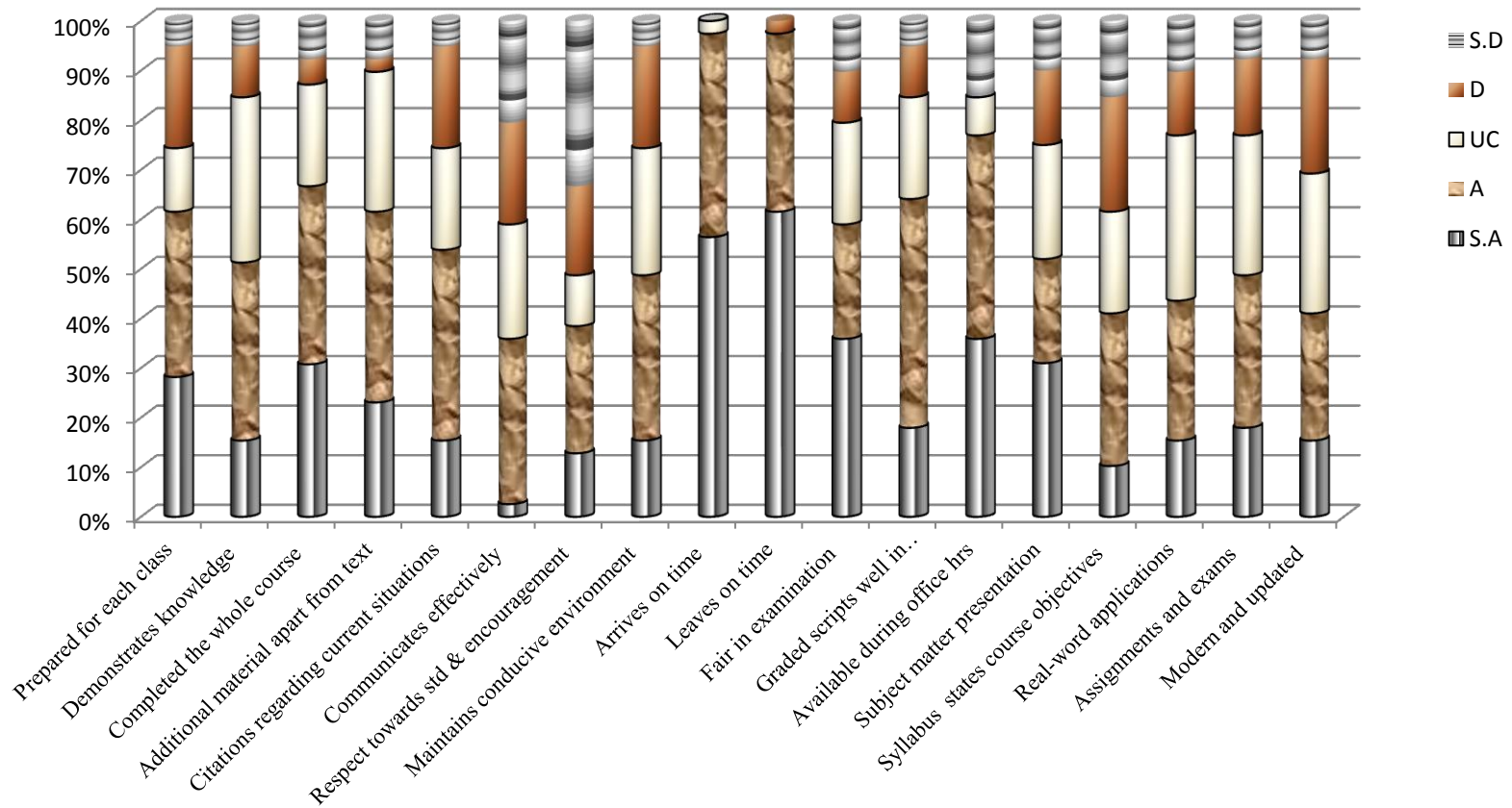
Department of Livestock Production and Management



Evaluation of Teacher 3

The graph reflected good performance of the teacher in all respects. 64 % of the students stated that the teacher is prepared for each class. Besides, 64% students reported that the teacher demonstrates knowledge of the subject.

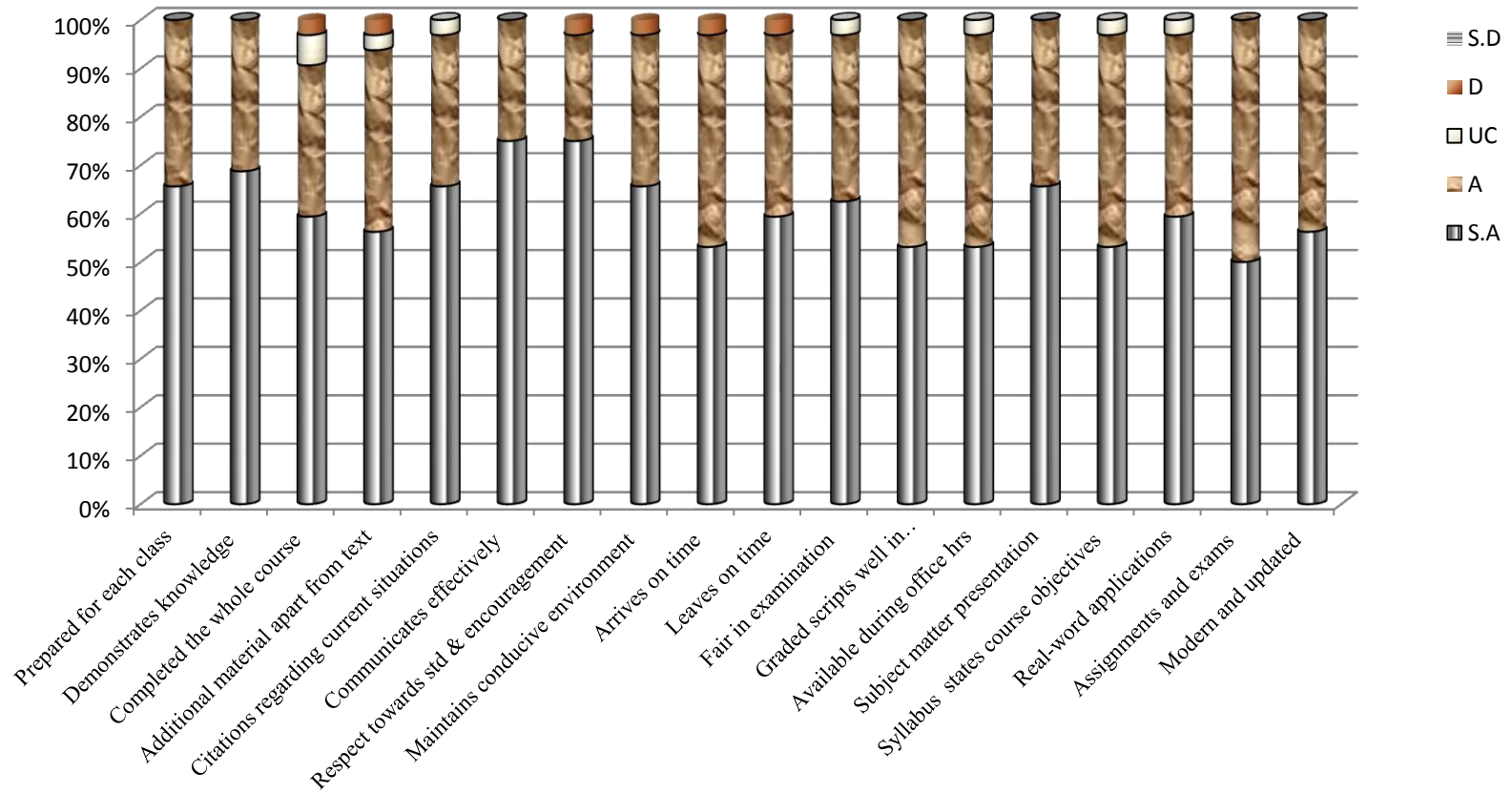
Department of Livestock Production and Management



Evaluation of Teacher 4

The graph reflected good performance of the teacher in general. Majority of the students agreed that teacher took and left the class in time. However students have reservations regarding teacher behaviour towards them.

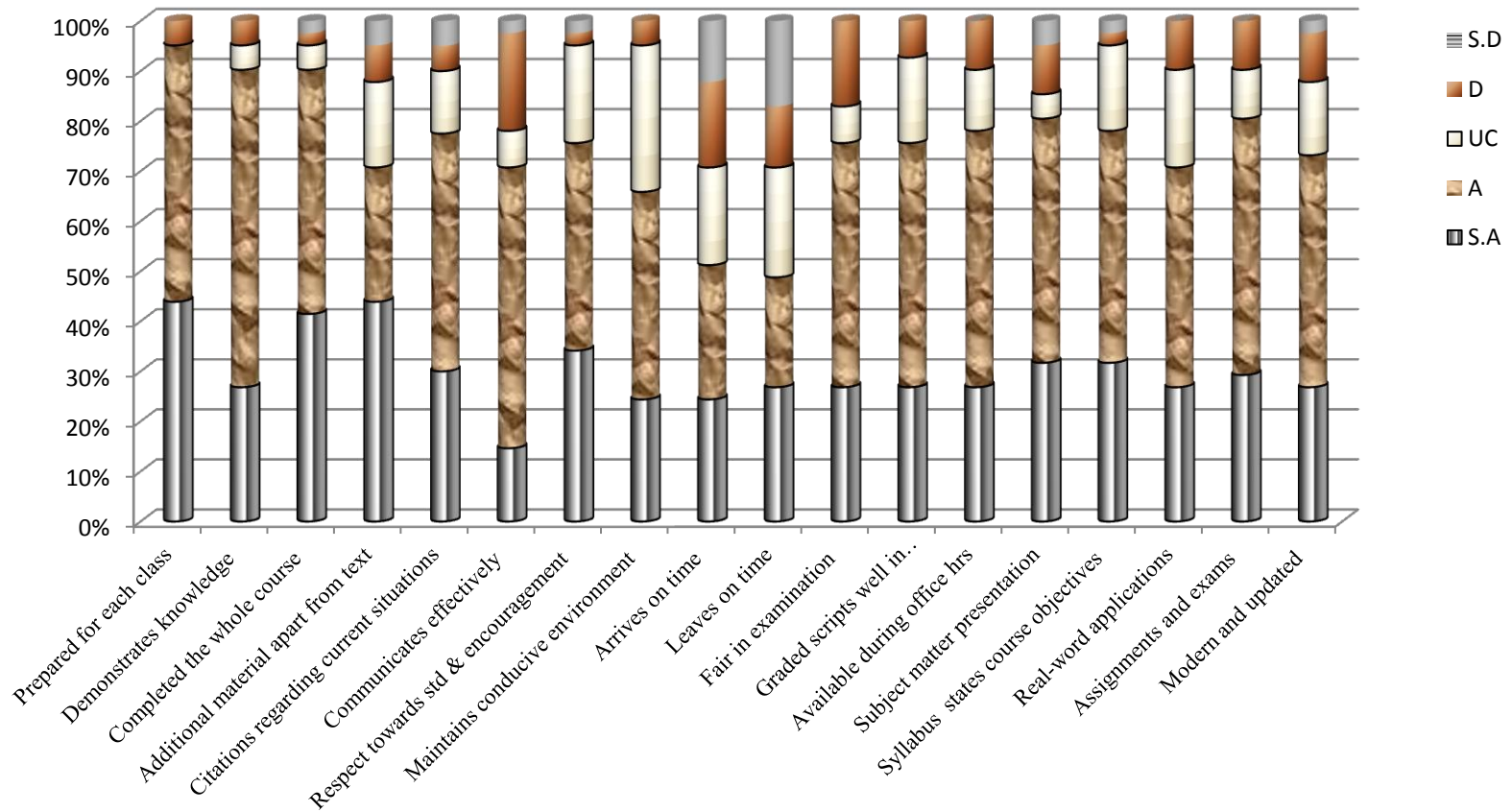
Department of Livestock Production and Management



Evaluation of Teacher 5

A good percentage of students (53%) reported the punctuality of the teacher. 75% students admired that the teacher encourages class participation. Someof the students (3%) were not satisfied with the fairness in marking.

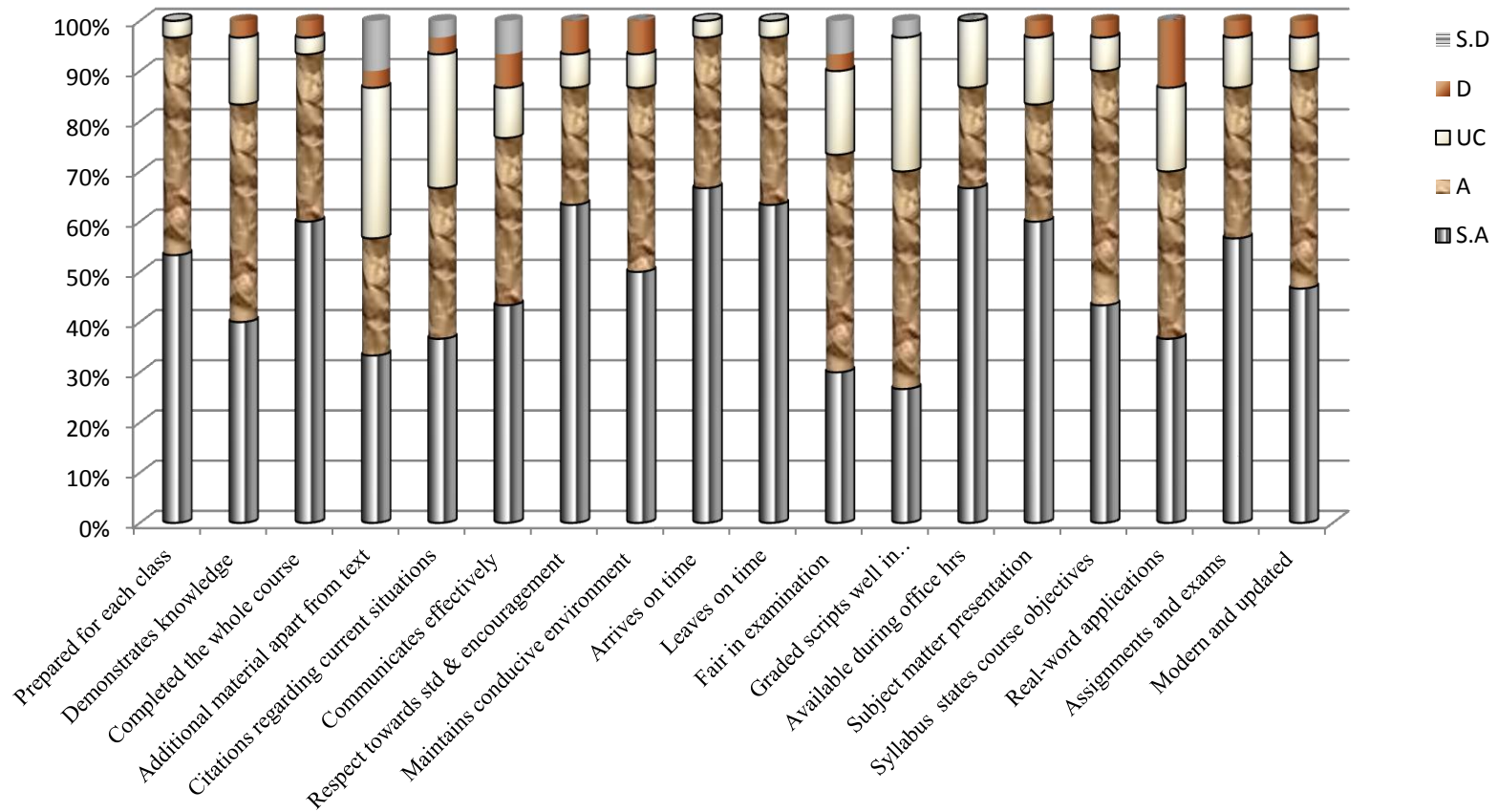
Department of Livestock Production and Management



Evaluation of Teacher 6

Analyses of the proformae revealed good performance of the teacher, but students have a scattered opinion about the punctuality of the teacher. Besides this, 95% students agreed that the teacher prepared for each class.

Department of Livestock Production and Management



Evaluation of Teacher 7

The results showed good performance of the teacher. A good percentage of students (63% to 67 %) reported the punctuality of the teacher. 63% students admired that the teacher encourages class participation.

Department of Poultry Science

Three teachers in the department numbered from 1-3 were evaluated during 2010 to 2012. The names of the teachers along their allotted numbers are (1) Dr. Nasir Mukhtar (2) Dr. Asghar Ali Mian and (3) Mr. Zaib ur Rehman. The results showed that the teacher 2 was on top scoring 4.05. The lowest performance with a score of 3.90 was observed in case of teacher 1 (Figure-2).

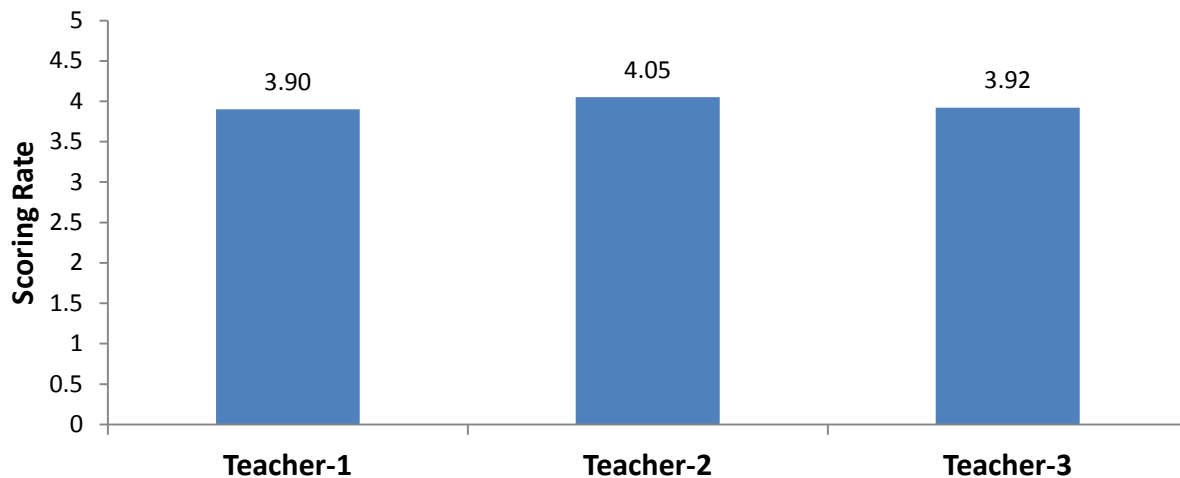
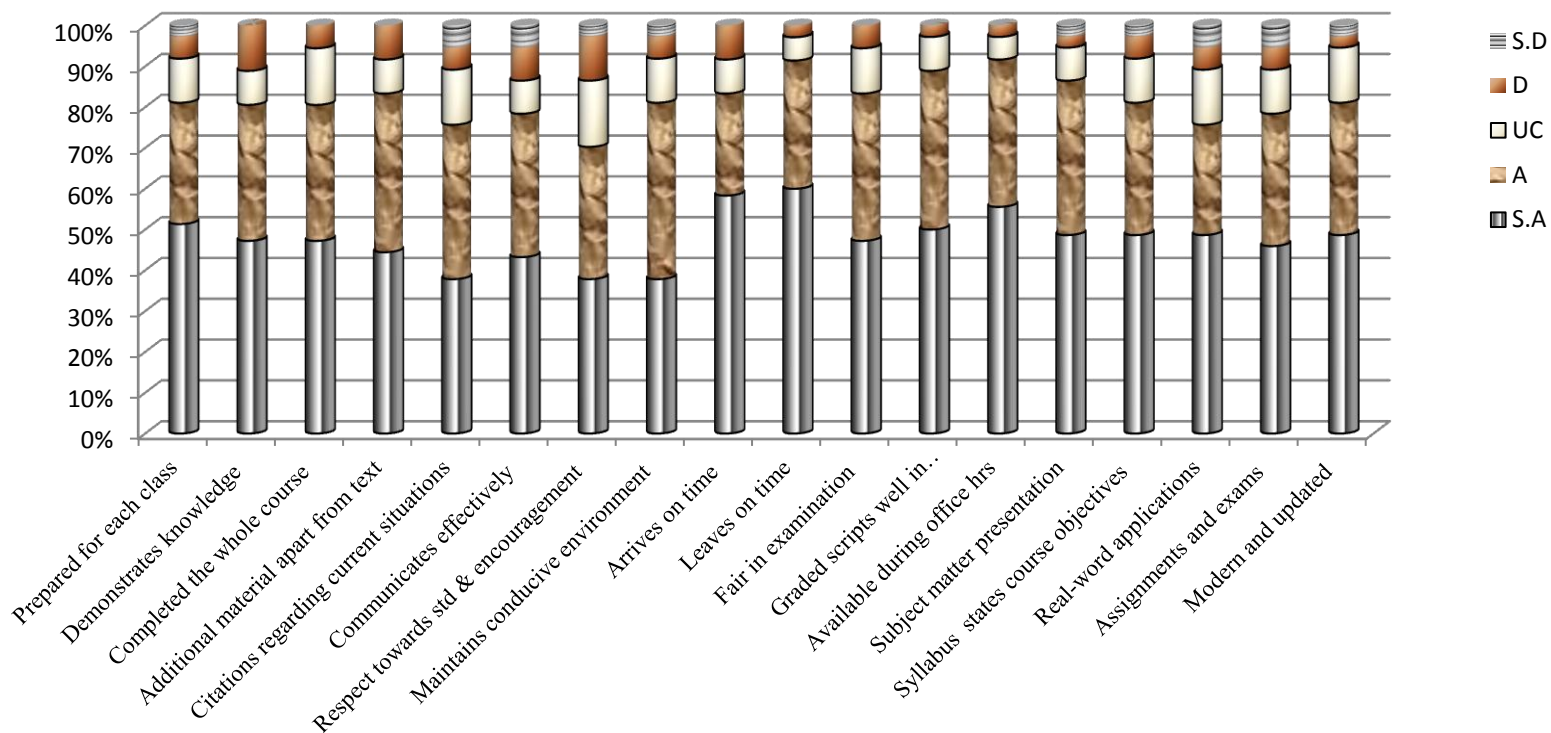


Figure 2: Performance level of different teachers in Poultry Science Department.

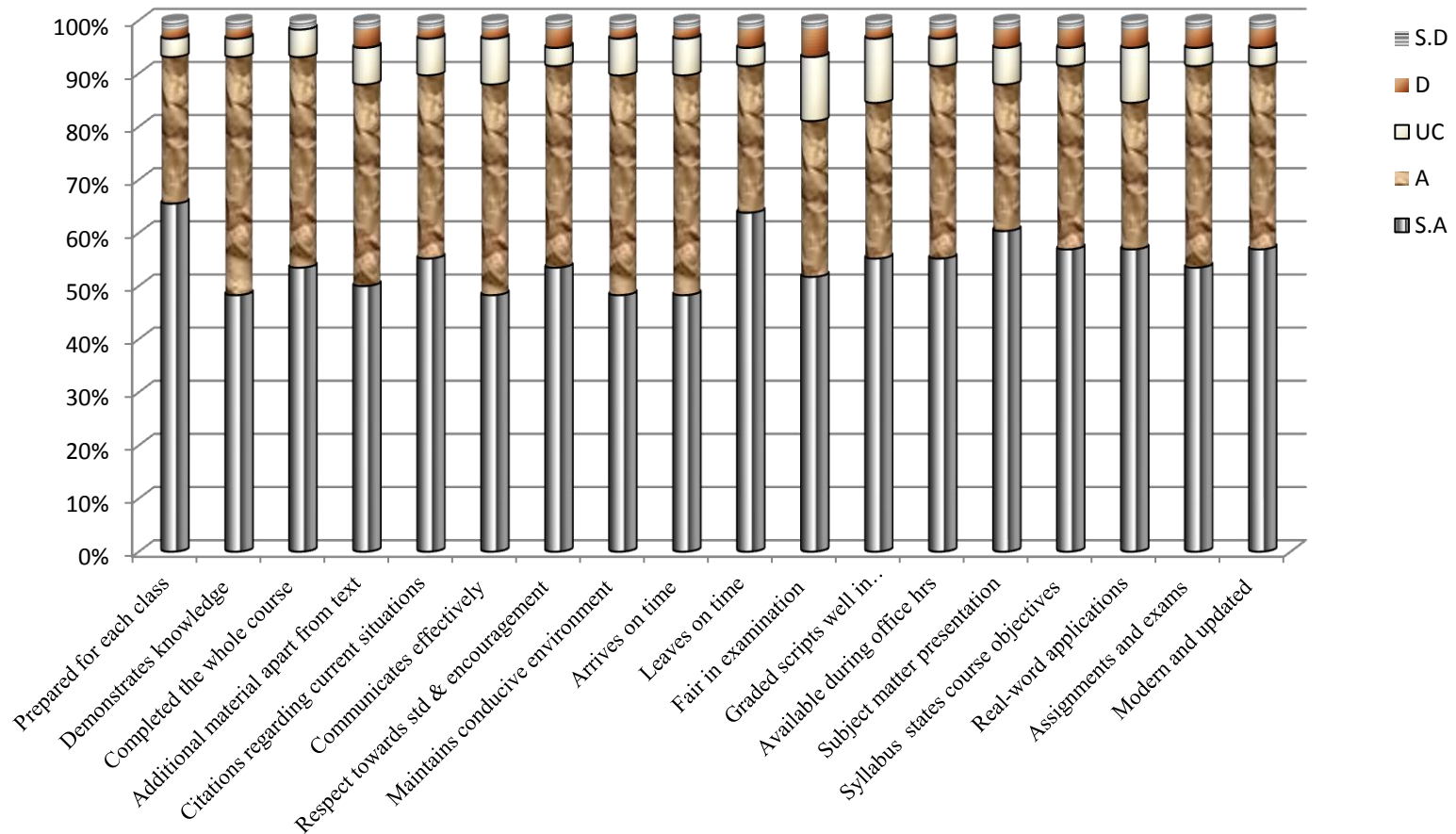
Department of Poultry Science



Evaluation of Teacher 1

This bar graph reflected excellent performance of the teacher in all respects. 50 % of the students stated that the teacher is prepared for each class. Besides, 56% students reported that the teacher arrives at time .

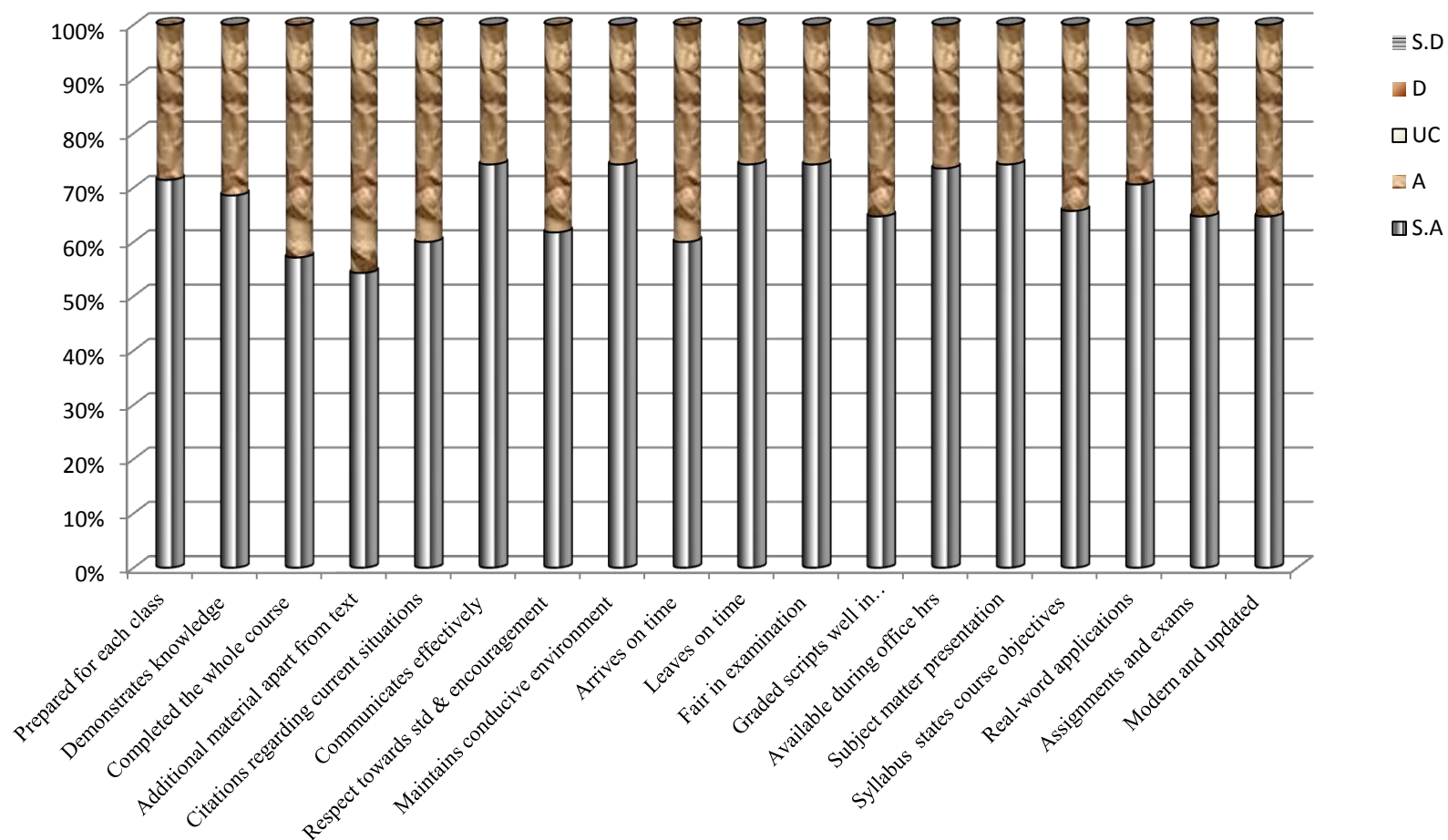
Department of Poultry Science



Evaluation of Teacher - 2

An excellent performance of the teacher in all respects is presented in the above graph

Department of Poultry Science



Evaluation of Teacher - 3

The performane of the teacher is excellent. As indicated above, more than 50% of the students strongly agreed in all respects.

Department of Bio Medical Sciences

Six teachers in the department numbered from 1-6 were evaluated during 2010 to 2012. The names of the teachers along their allotted numbers are (1) Dr. Mansur Abdullah (2) Ms Sumaira Hassan, (3) Mr. Mujeeb ur Rehman, (4) Mr. Asif Riaz (5) Mr. Zeeshan Akbar (6) Dr. Riaz Hussain Pasha. The results showed that the teacher 2 was on top scoring 4.21. The lowest performance with a score of 3.55 was observed in case of teacher 5 (Figure-3).

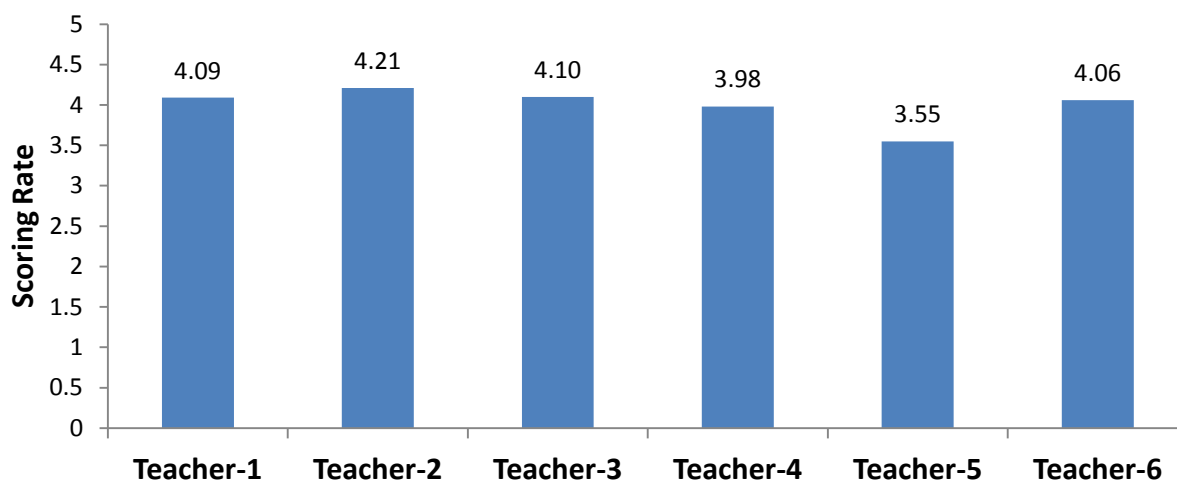
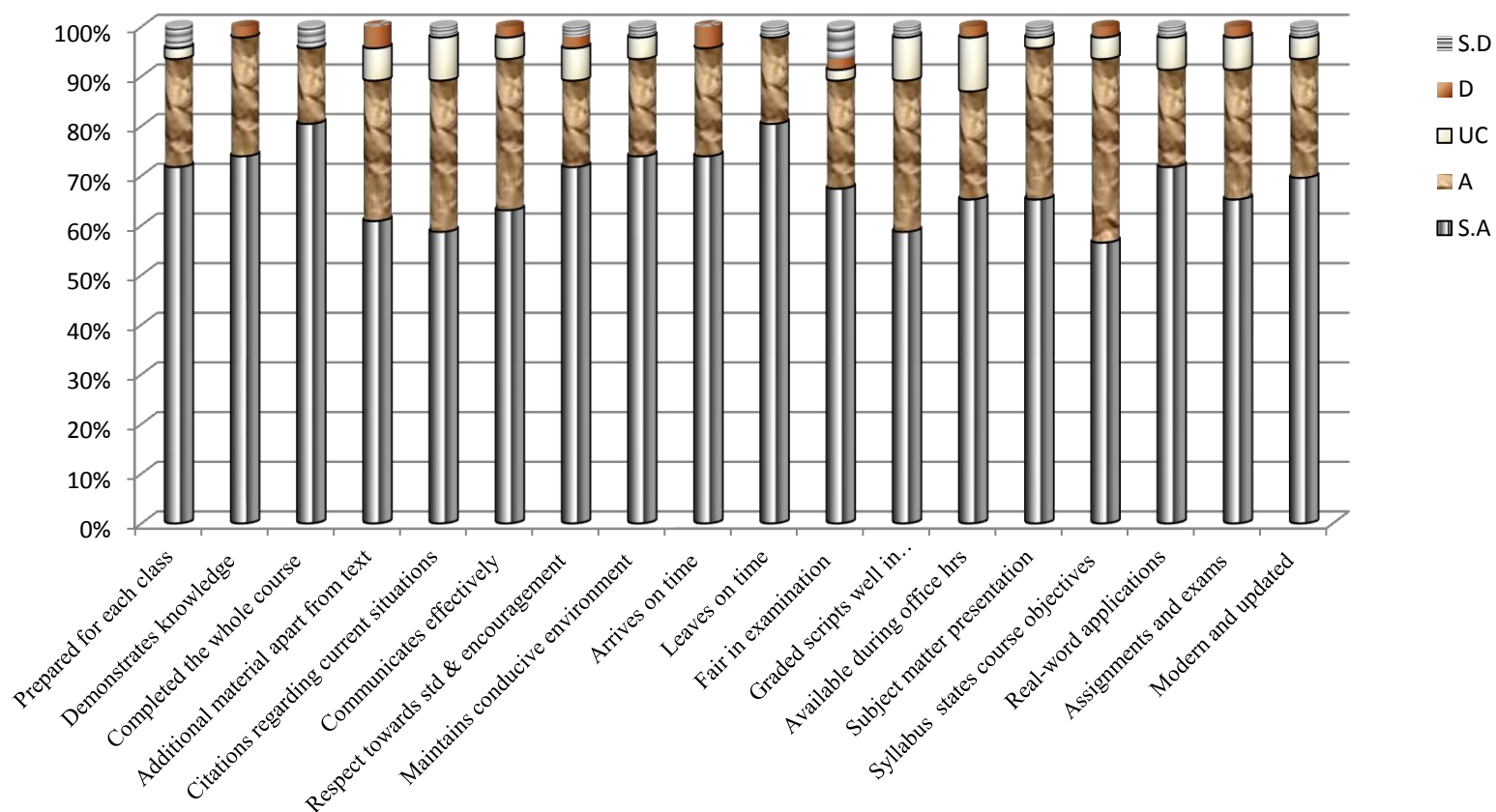


Figure 3: Performance level of different teachers in Bio-Medical Sciences Department.

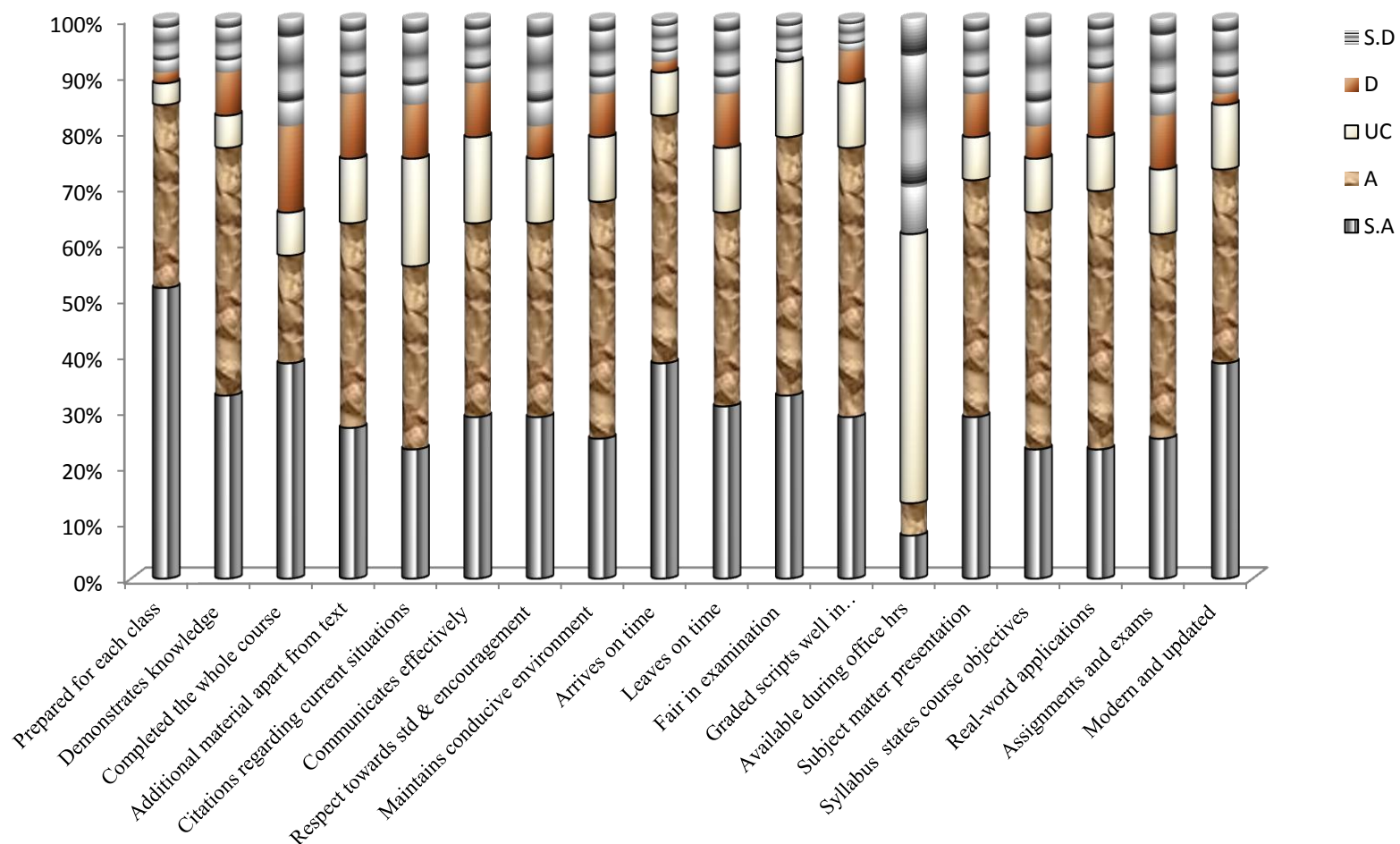
Department of Bio Medical Sciences



Evaluation of Teacher 1

Teacher evaluation data shows that the students are strongly agreed (70%) that the teacher is prepared for each class and more than 70% of the students strongly agreed that teacher maintains the environment conducive for learning.

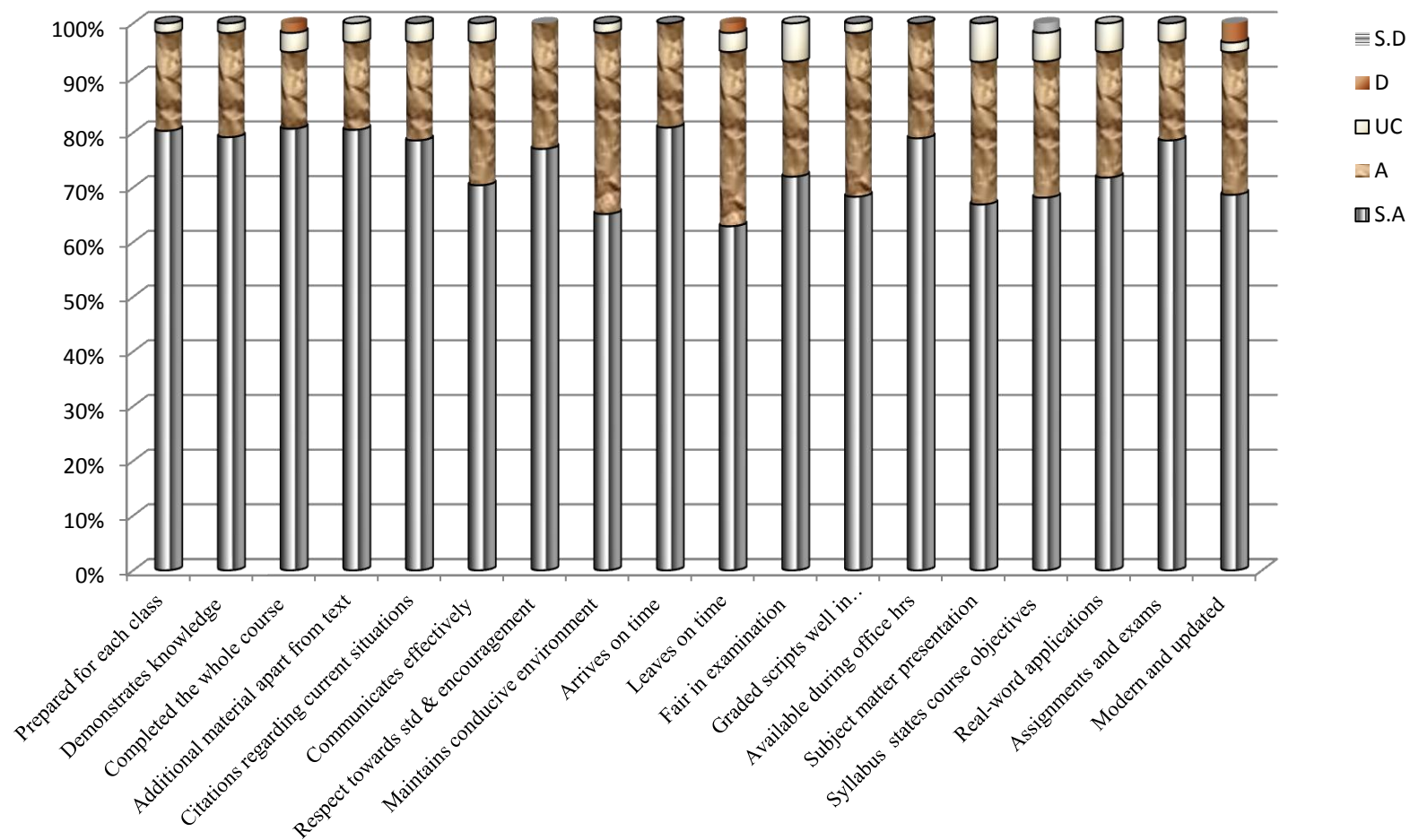
Department of Bio Medical Sciences



Evaluation of Teacher - 2

Graph elaborates that most of the students agreed with respect to teacher preparedness, well in time, effective communication and uptodate course material.

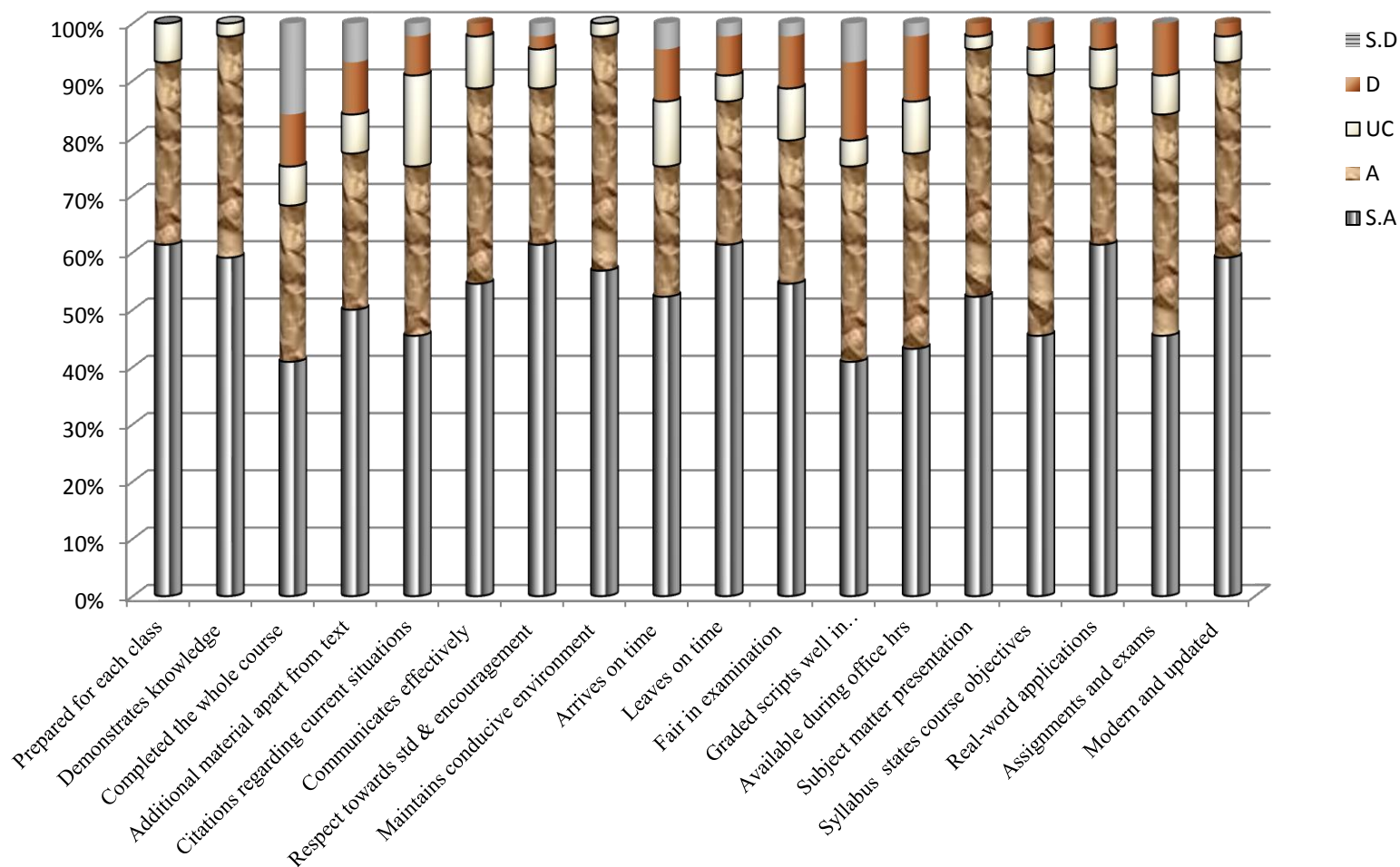
Department of Bio Medical Sciences



Evaluation of Teacher -3

The graph represented that more than 60% of the student's strongly agreed with respect to different observations. This indicates an excellent performance of the teacher.

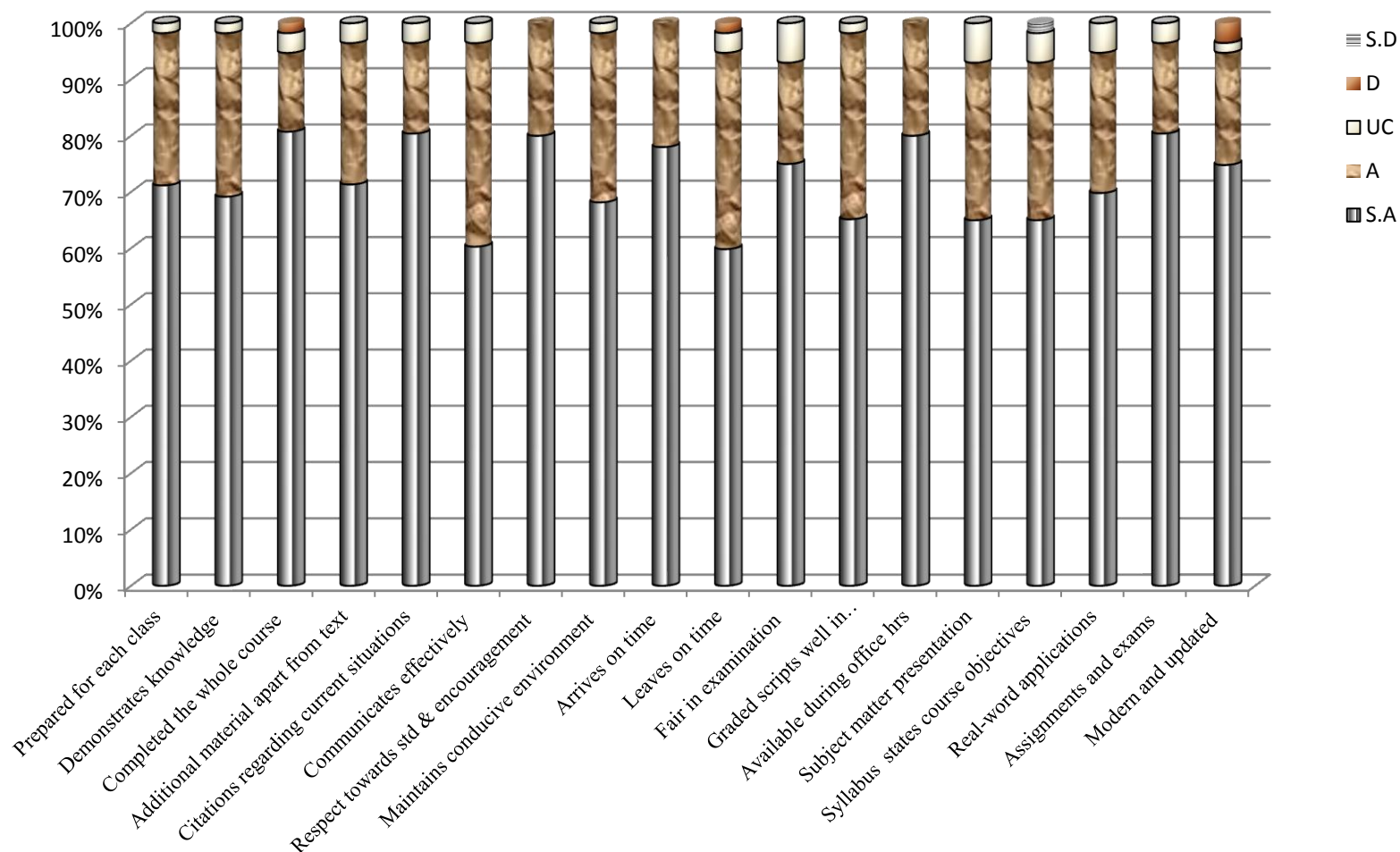
Department of Bio Medical Sciences



Evaluation of Teacher -4

The performance of teacher is good with regard to its punctuality, modern and updated method of teaching, respect towards students and encouragement for participation.

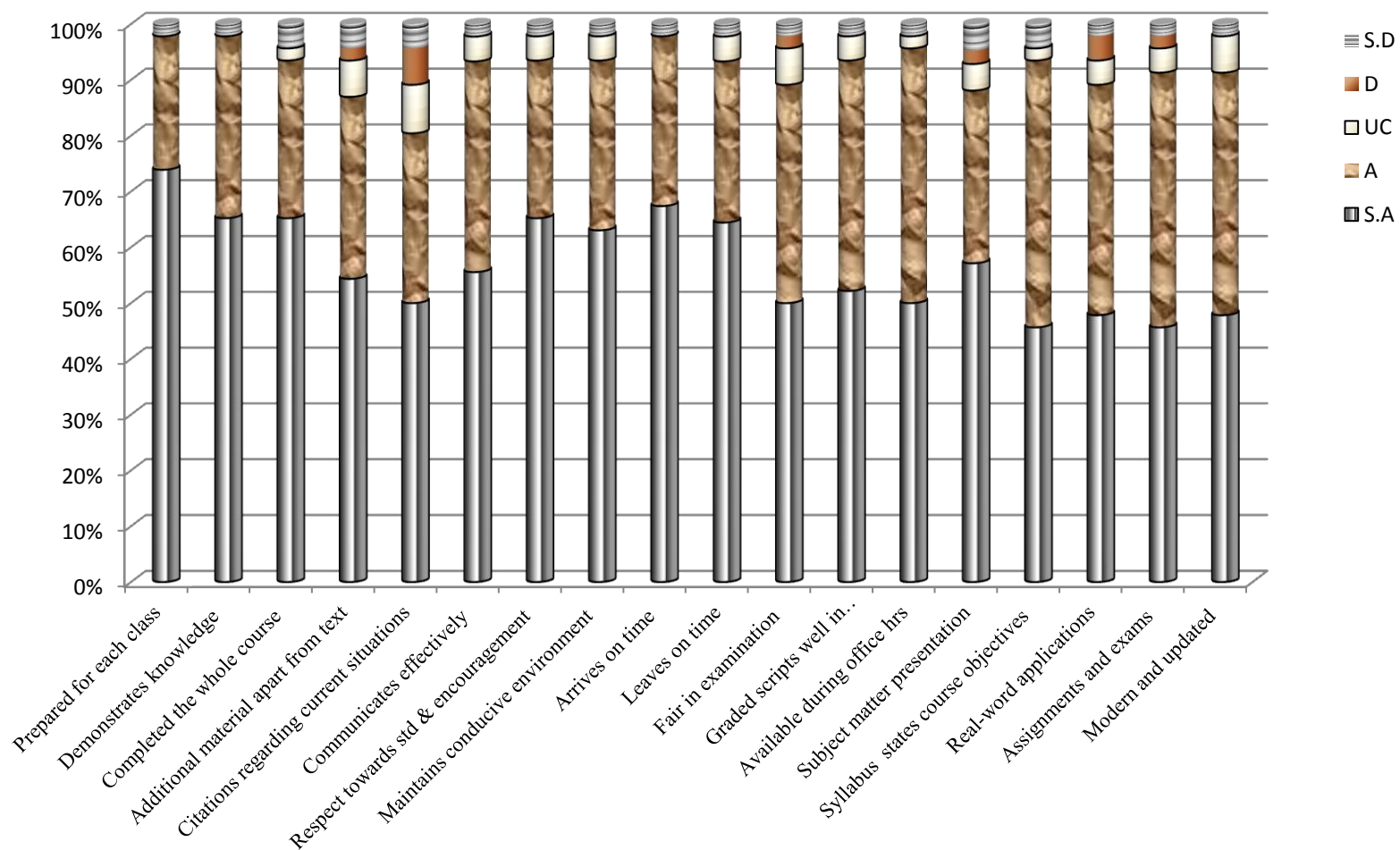
Department of Bio Medical Sciences



Evaluation of Teacher - 5

More than 70% of the students strongly agreed, that teacher was prepaed for classes, completed the course work, give citations regarding current situation, and taught modern and updated course.

Department of Bio Medical Sciences



Evaluation of Teacher - 6

More than 70% of the students strongly agreed that the teacher was fully prepared for each class and above 60% of the students commented that the instructor delivered the related knowledge of the subject.

Department of Pathobiology

Five teachers in the department numbered from 1-5 were evaluated during 2010 to 2012. The names of the teachers along their allotted numbers are (1) Dr. Muhammad Ali Abdullah Shah (2) Dr. Imtiaz Ahmed, (3) Dr. Murtaz ul Hassan, (4) Mr. Sajid Umar, and (5) Dr. Saif ur Rehman. The results showed that the teacher 4 was on top scoring 4.21. The lowest performance with a score of 3.56 was observed in case of teacher 2 (Figure-4).

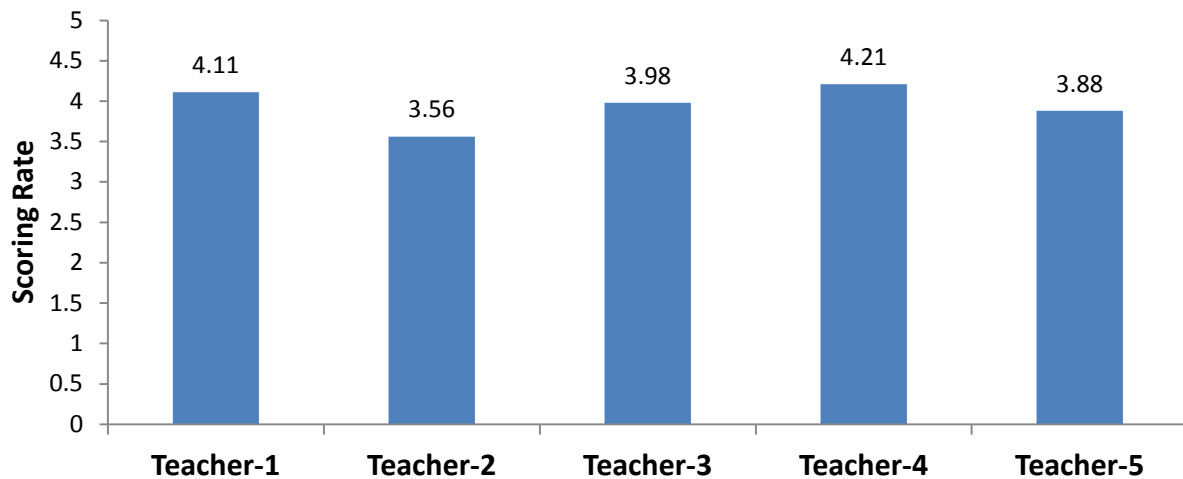
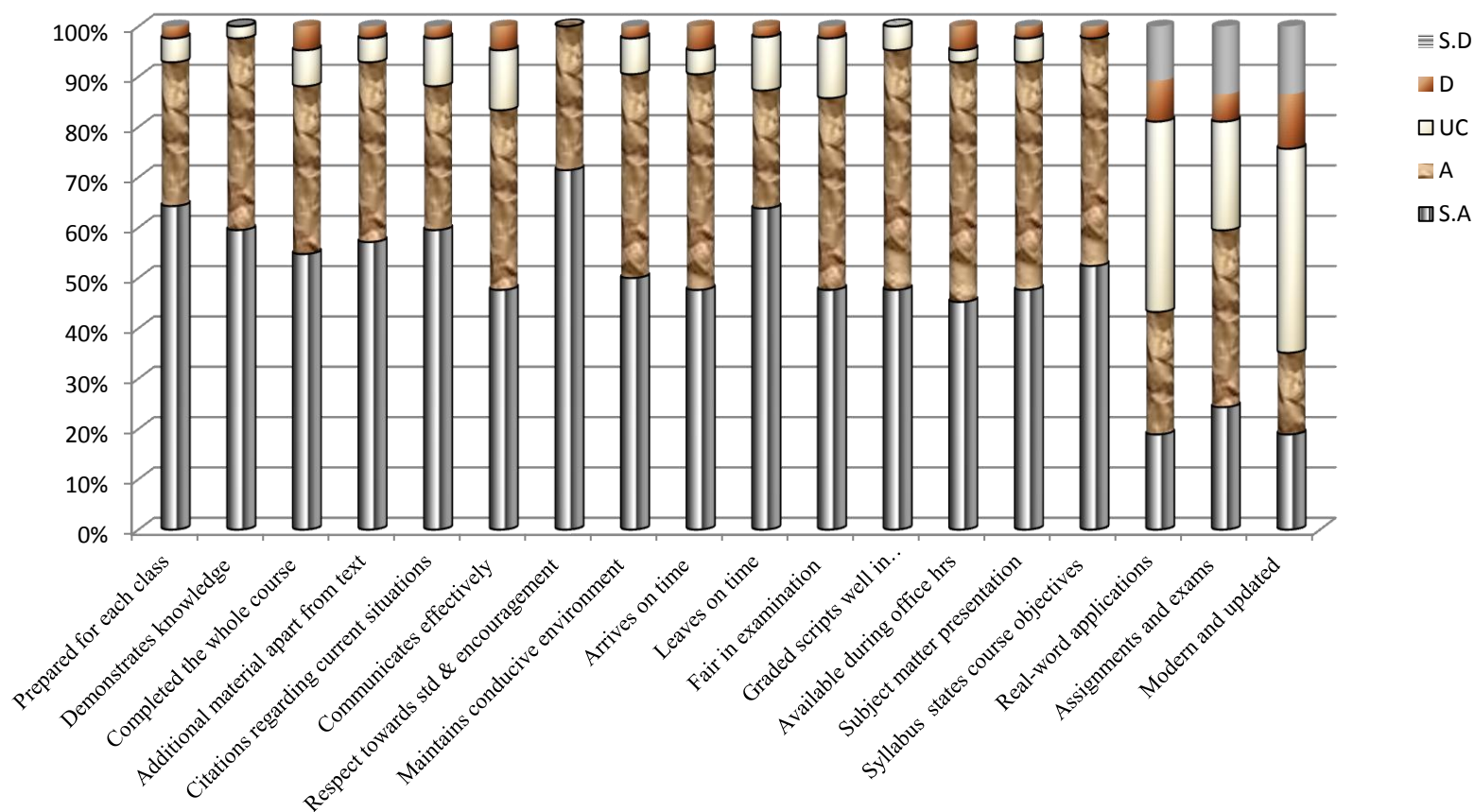


Figure 4: Performance level of different teachers in Pathobiology Department.

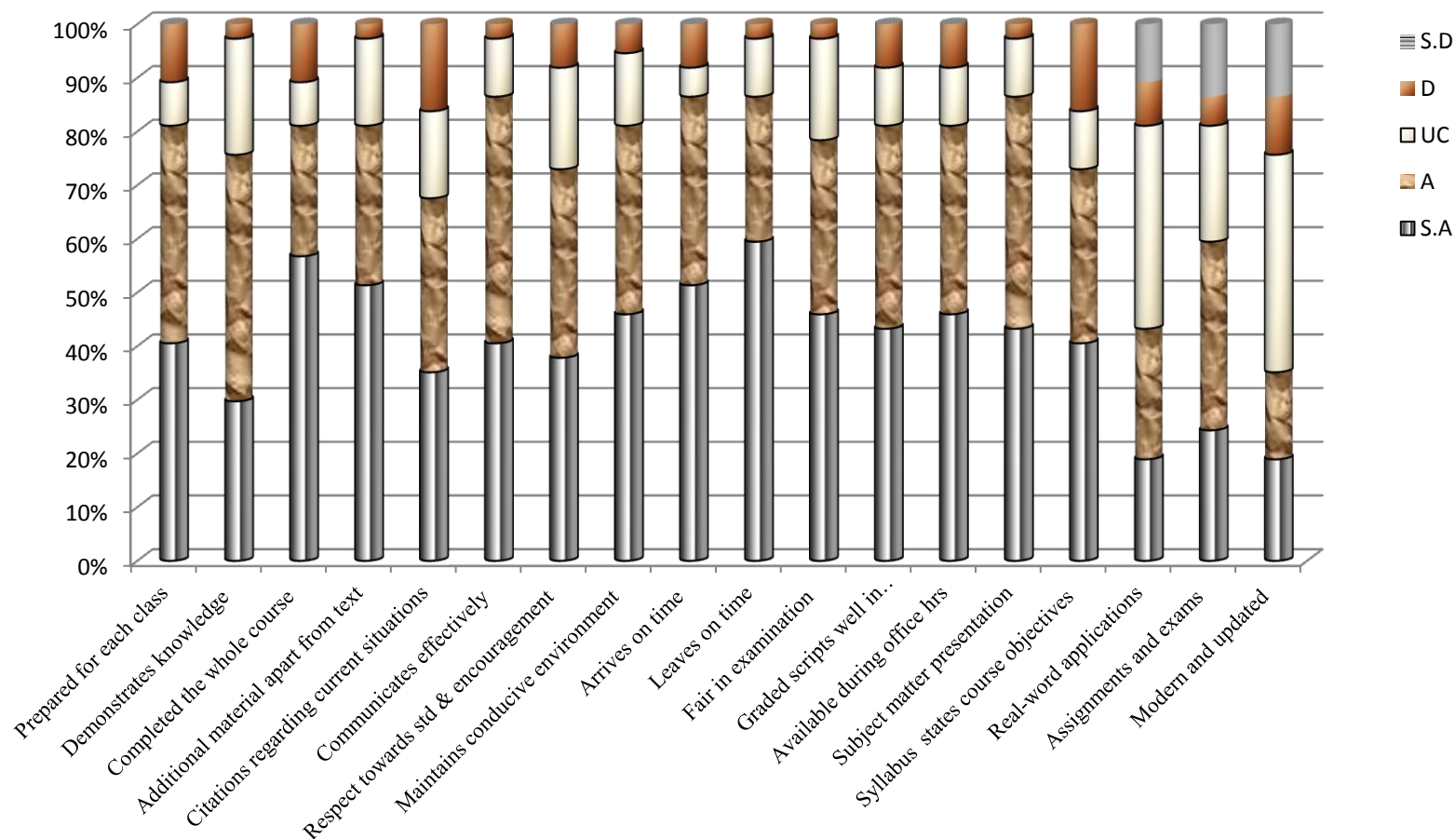
Department of Pathobiology



Evaluation of Teacher 1

The teacher showed very good performance in all respects. The bar graph is indicating that students are satisfied by the performance of teacher.

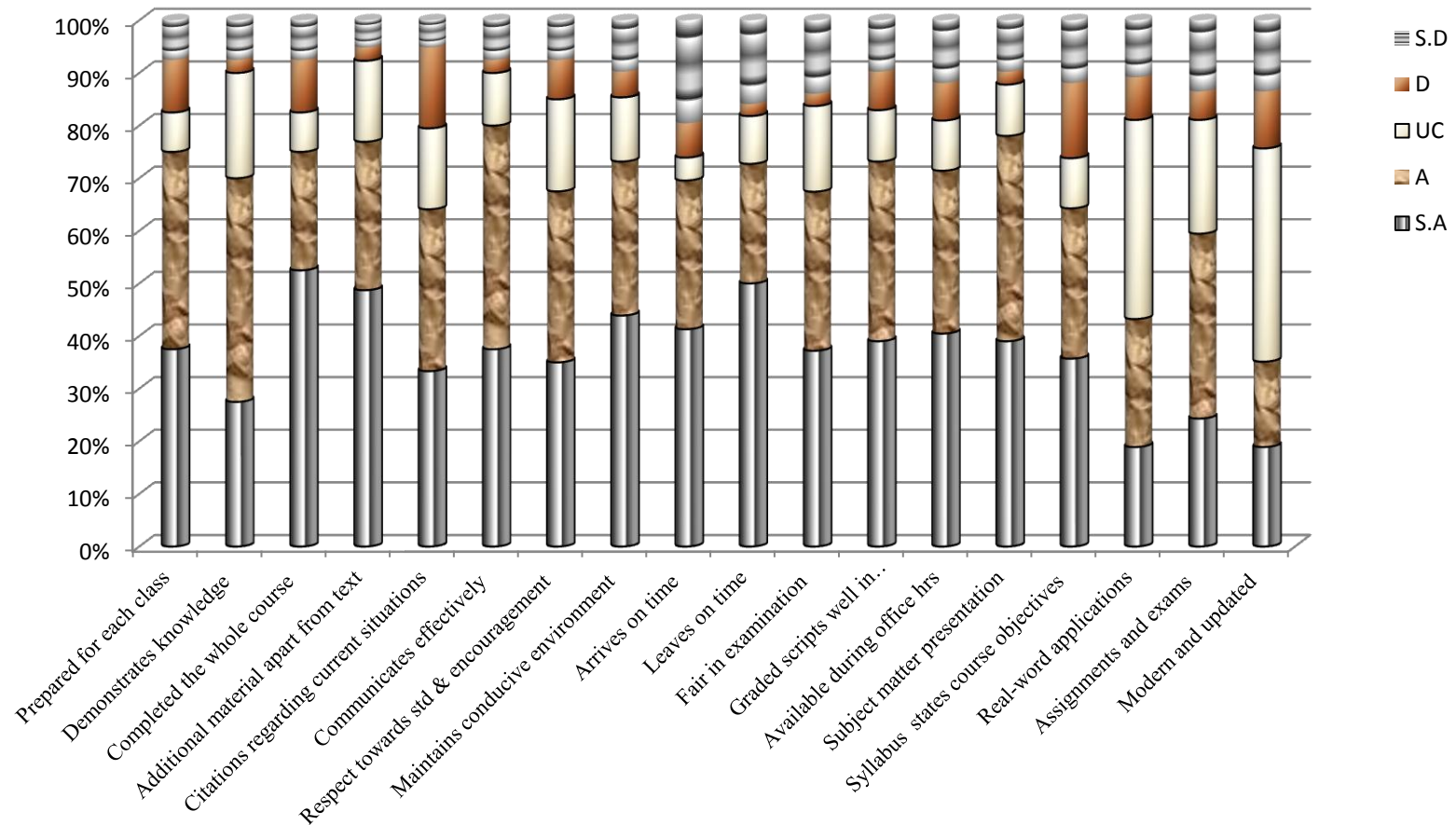
Department of Pathobiology



Evaluation of Teacher - 2

Very good performance of the teacher in all respects is presented in the above graph. Students are satisfied that he teacher arrived on time and demonstrated the basic knowledge of the subject in a good way.

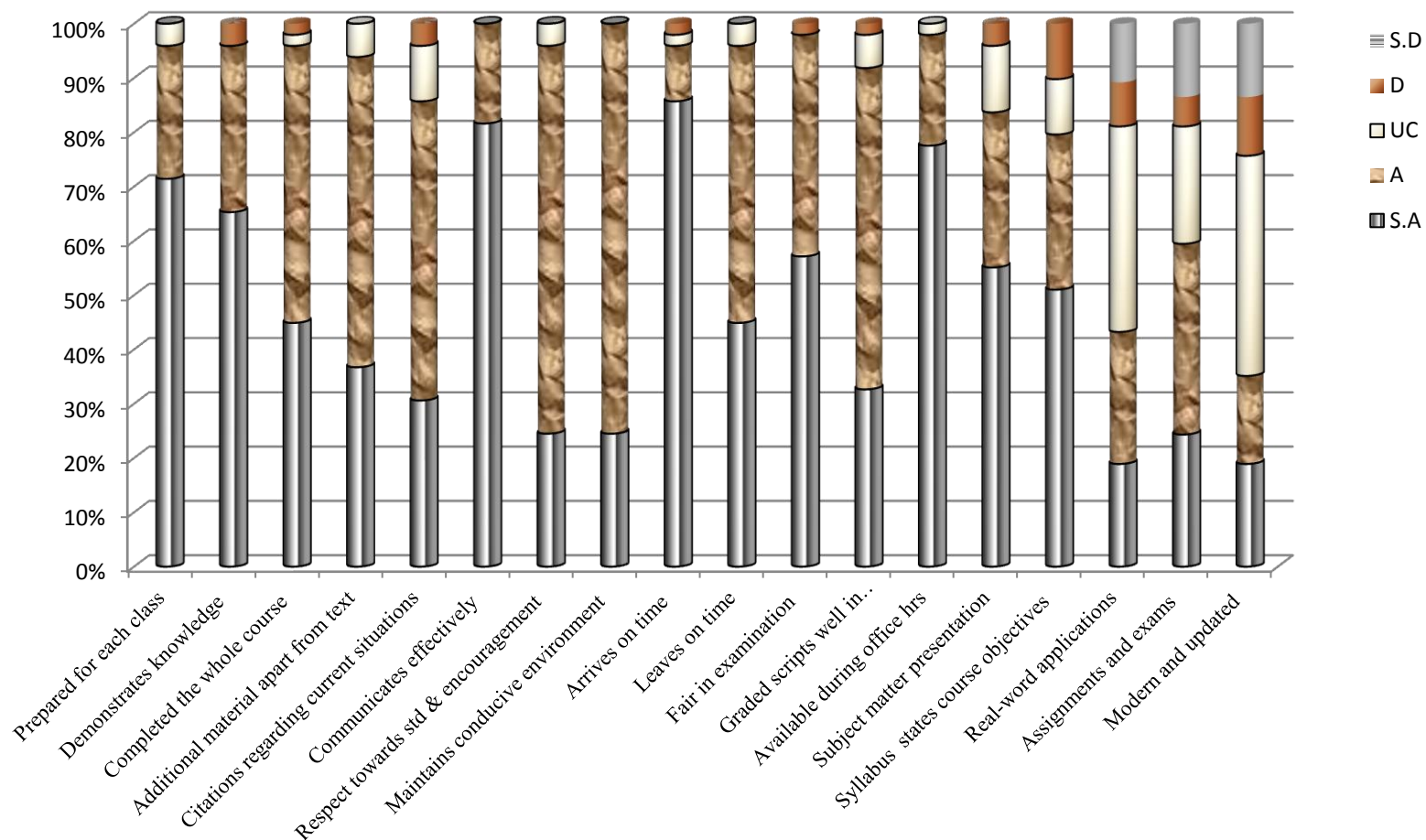
Department of Pathobiology



Evaluation of Teacher - 3

The performance of the teacher is very good. As indicated above, 36 % of the students strongly agreed in that the teacher fully prepared for each class.

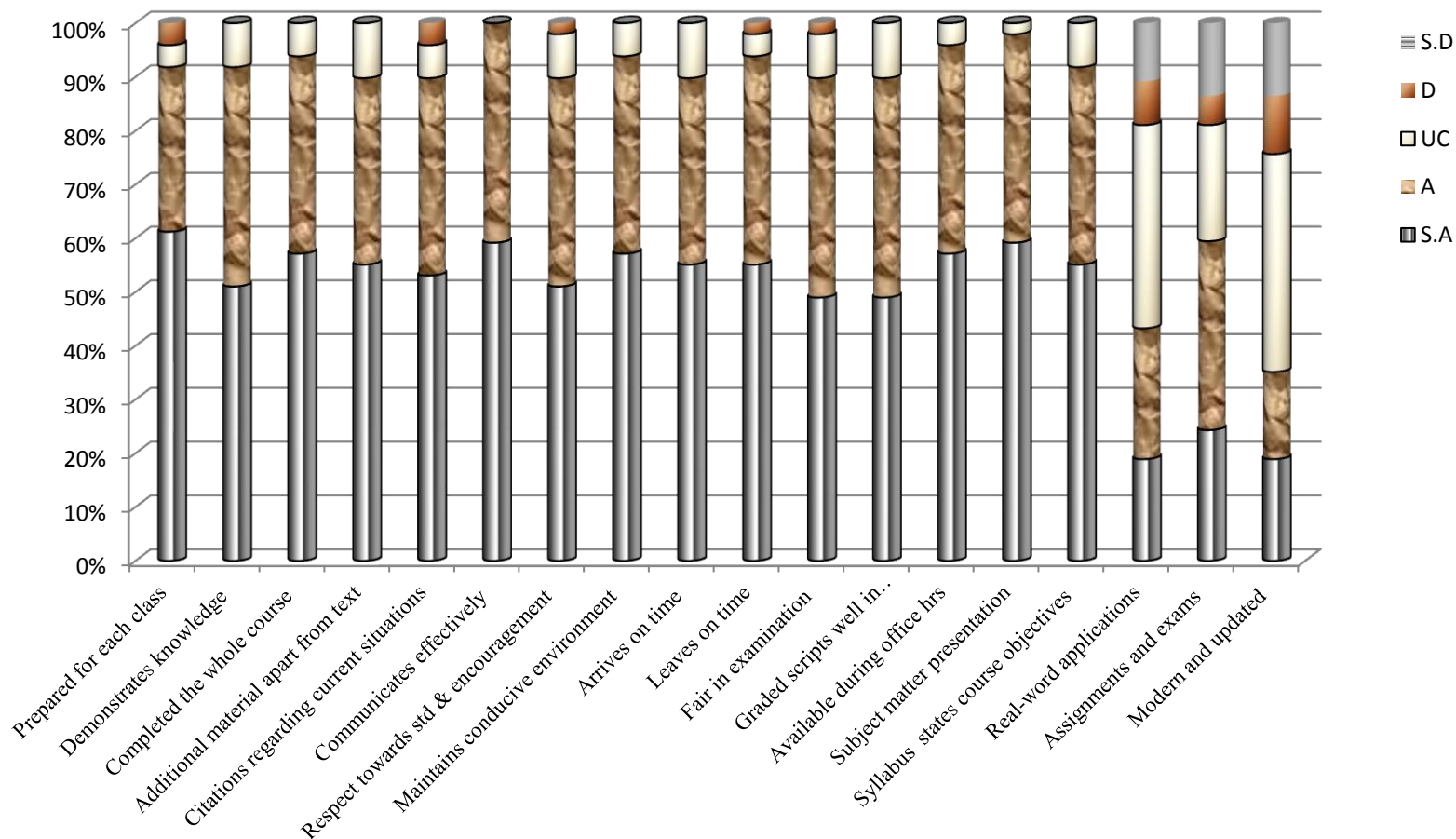
Department of Pathobiology



Evaluation of Teacher - 4

The teacher showed excellent performance in all respects. The bar graph is indicating that students are fully satisfied by the performance of teacher in all aspects.

Department of Pathobiology



Evaluation of Teacher - 5

Data in the bar graph elaborate the excellent performance of teacher in all aspects. Most of the students are fully satisfied by the teaching method of the teacher

Department of Clinical Studies

The Five teachers in the department numbered from 1-5 were evaluated during 2010 to 2012. The names of the teachers along their allotted numbers are (1) Dr. Nemat ullah (2) Dr. Arfan Yousaf, (3) Dr. Muhammad Arif Zafar, (4) Dr. Muhammad Yaqoob, (5) Dr. Zahid Naseer. The results showed that the teacher 1 was on top scoring 4.52. The lowest performance with a score of 3.89 was observed in case of teacher 3 (Figure-5).

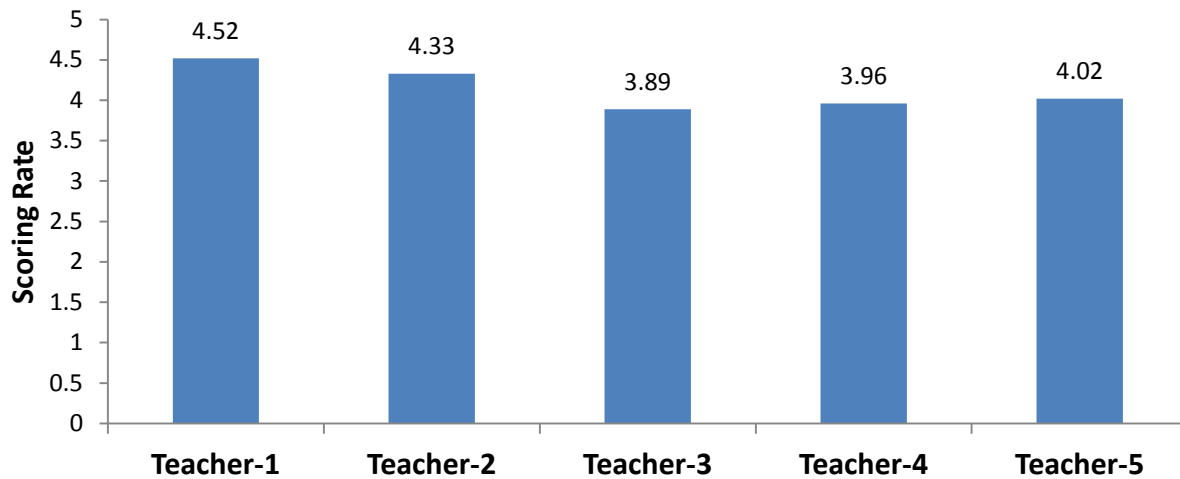
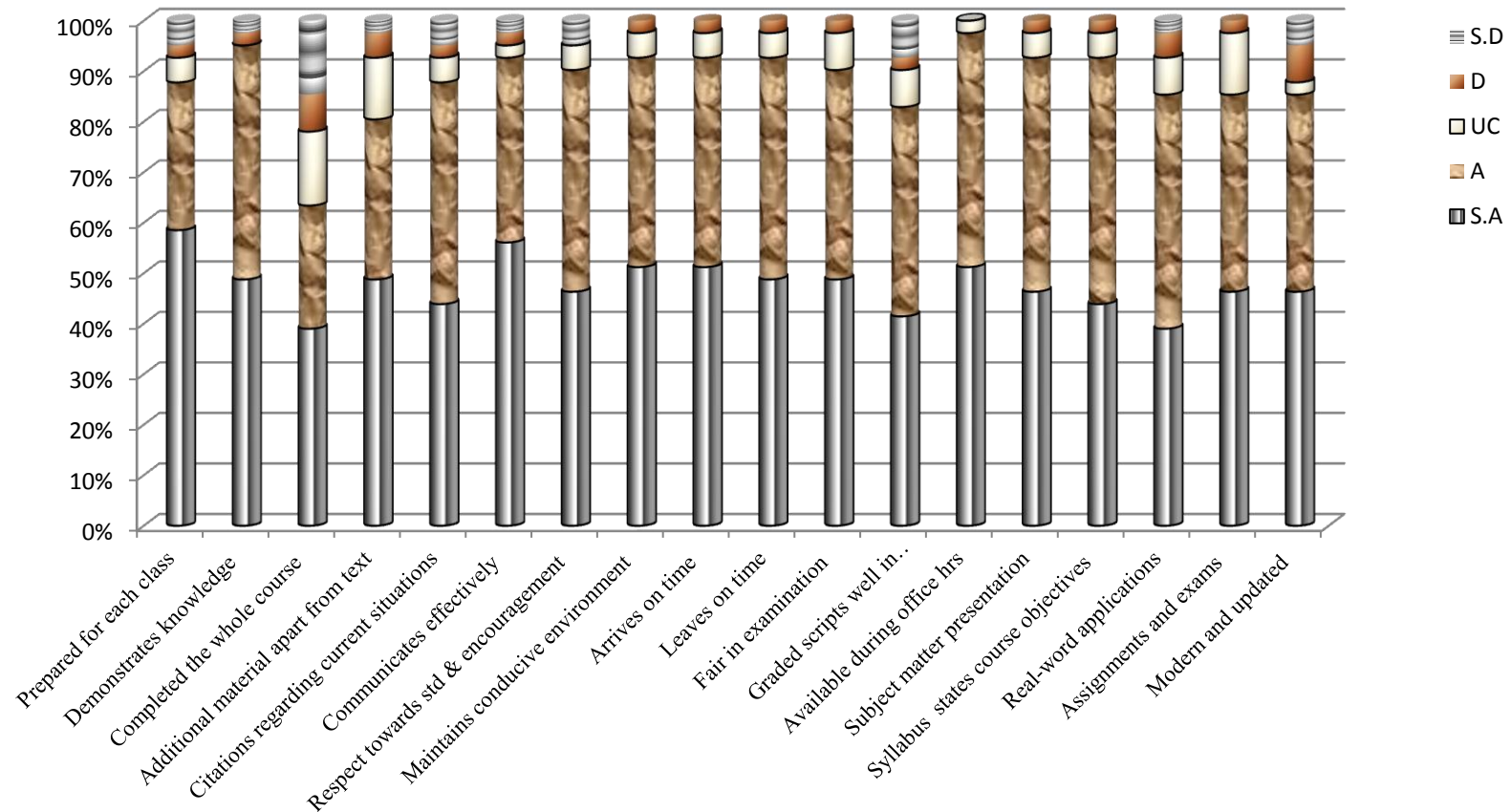


Figure 5: Performance level of different teachers in Clinical Studies Department.

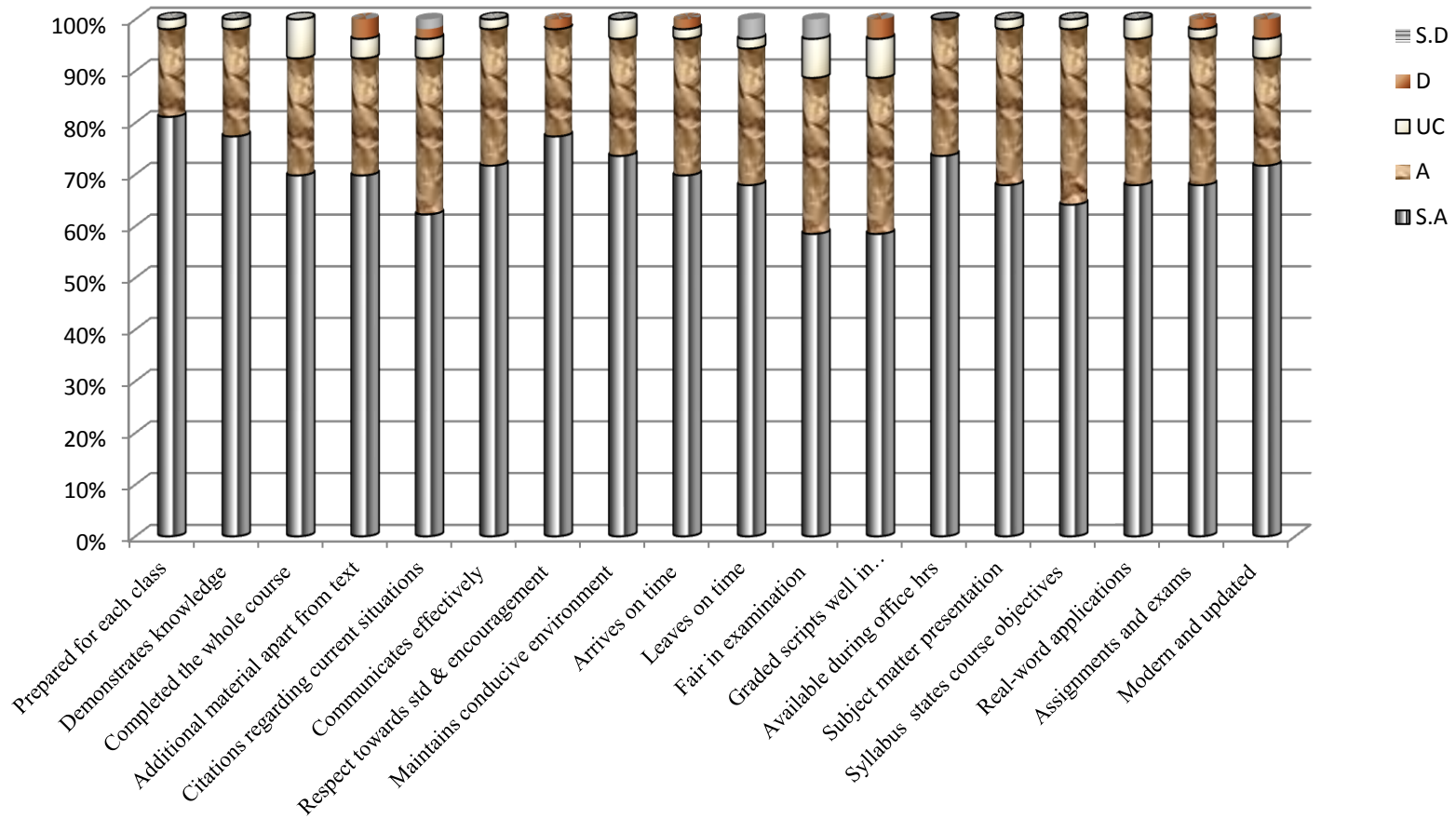
Department of Clinical Studies



Evaluation of teacher 1

This bar graph reflected excellent performance of the teachers in all respect. 57% of the student stated that the teacher communication is effective for each class. Beside 48% student reported that the teacher demonstrate knowledge.

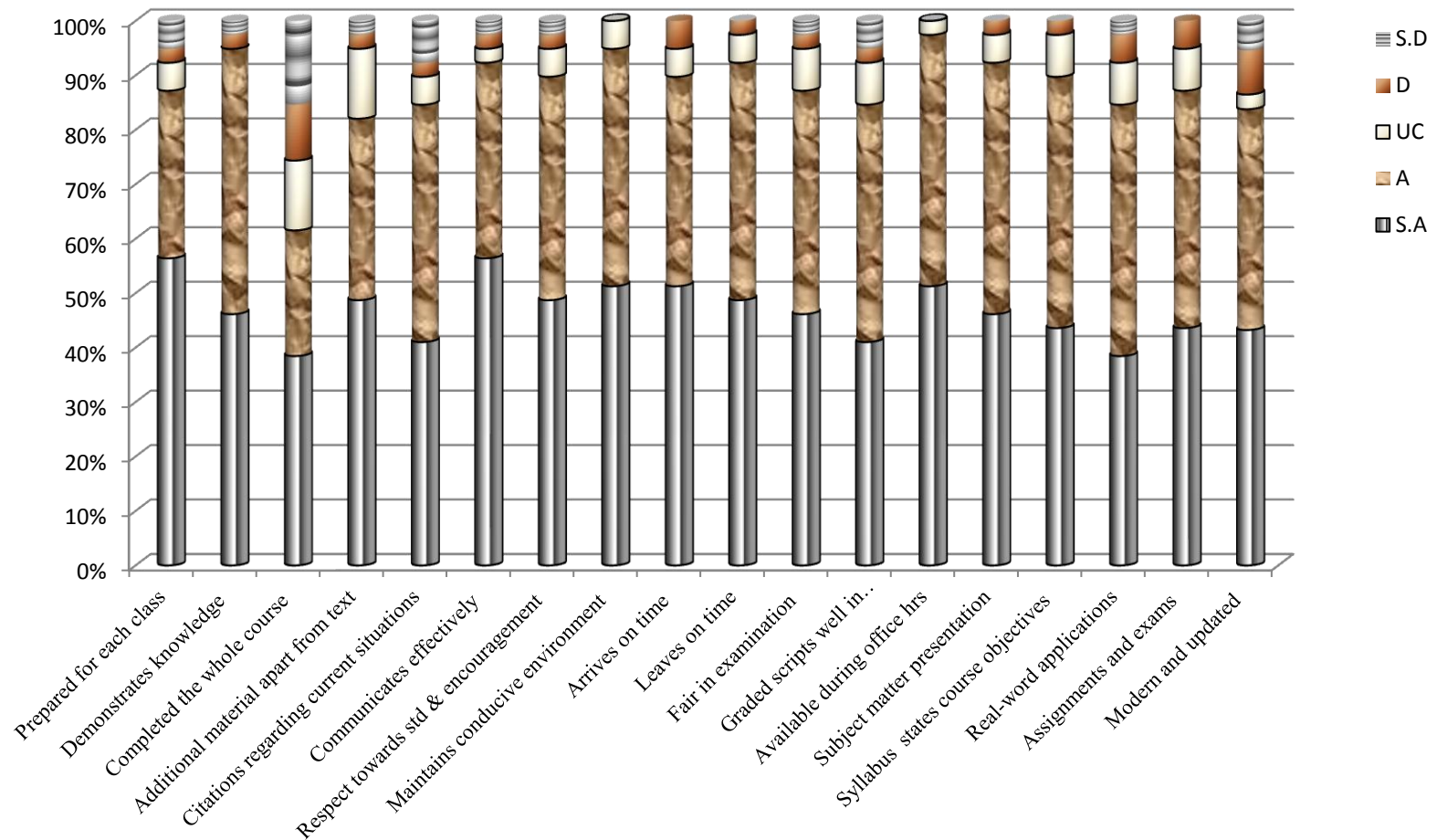
Department of Clinical Studies



Evaluation teacher 2.

This bar graph reflected excellent performance of the teachers in all respect. 79% of the student stated that the teacher is prepared for each class. Beside 70% student reported that the teacher is modern and updated.

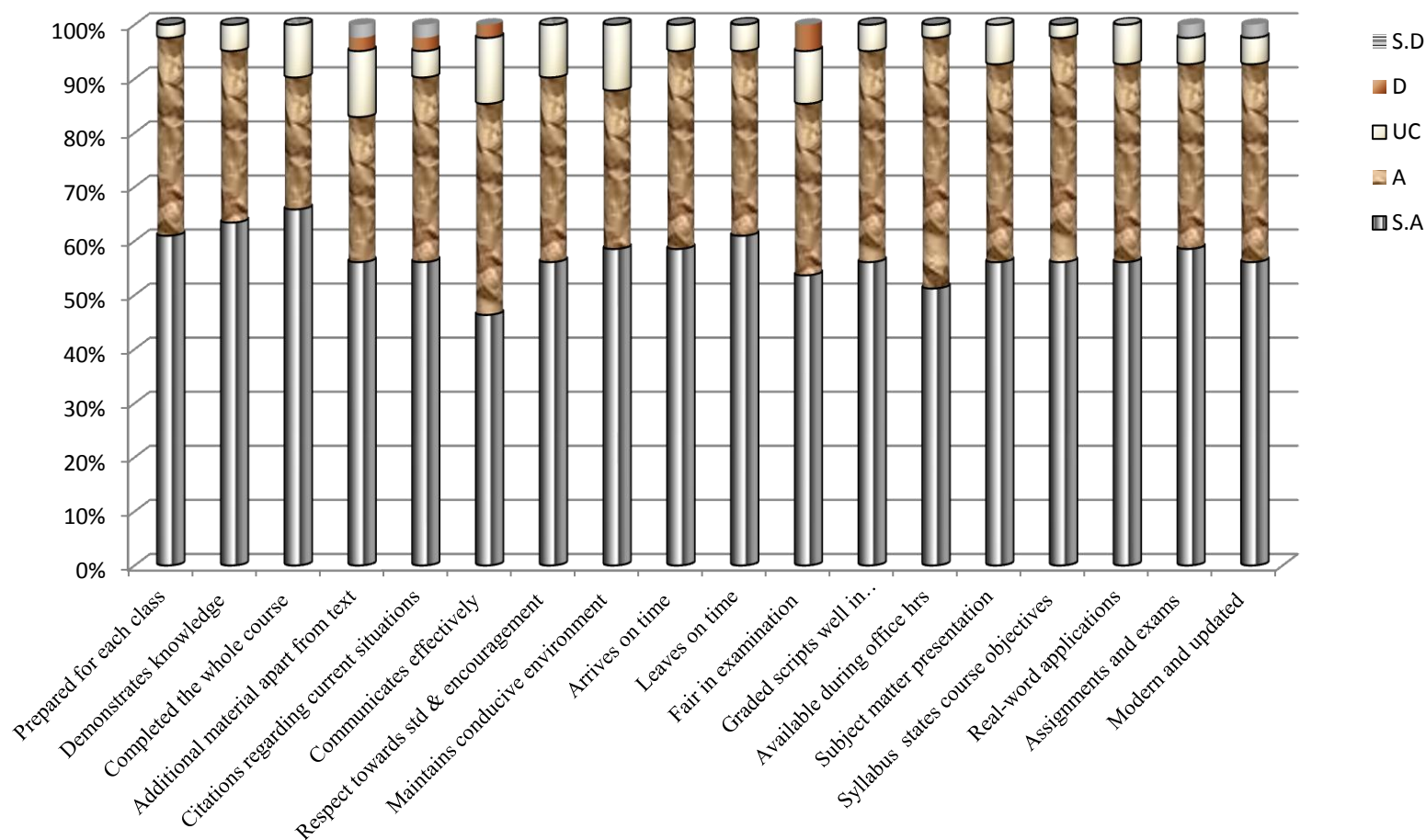
Department of Clinical Studies



Evaluation teacher 3.

This bar graph reflected excellent performance of the teachers in all respect. 50% of the student stated that the teacher produce the conducive environment for class. Beside 48% student reported that the teacher leave on time.

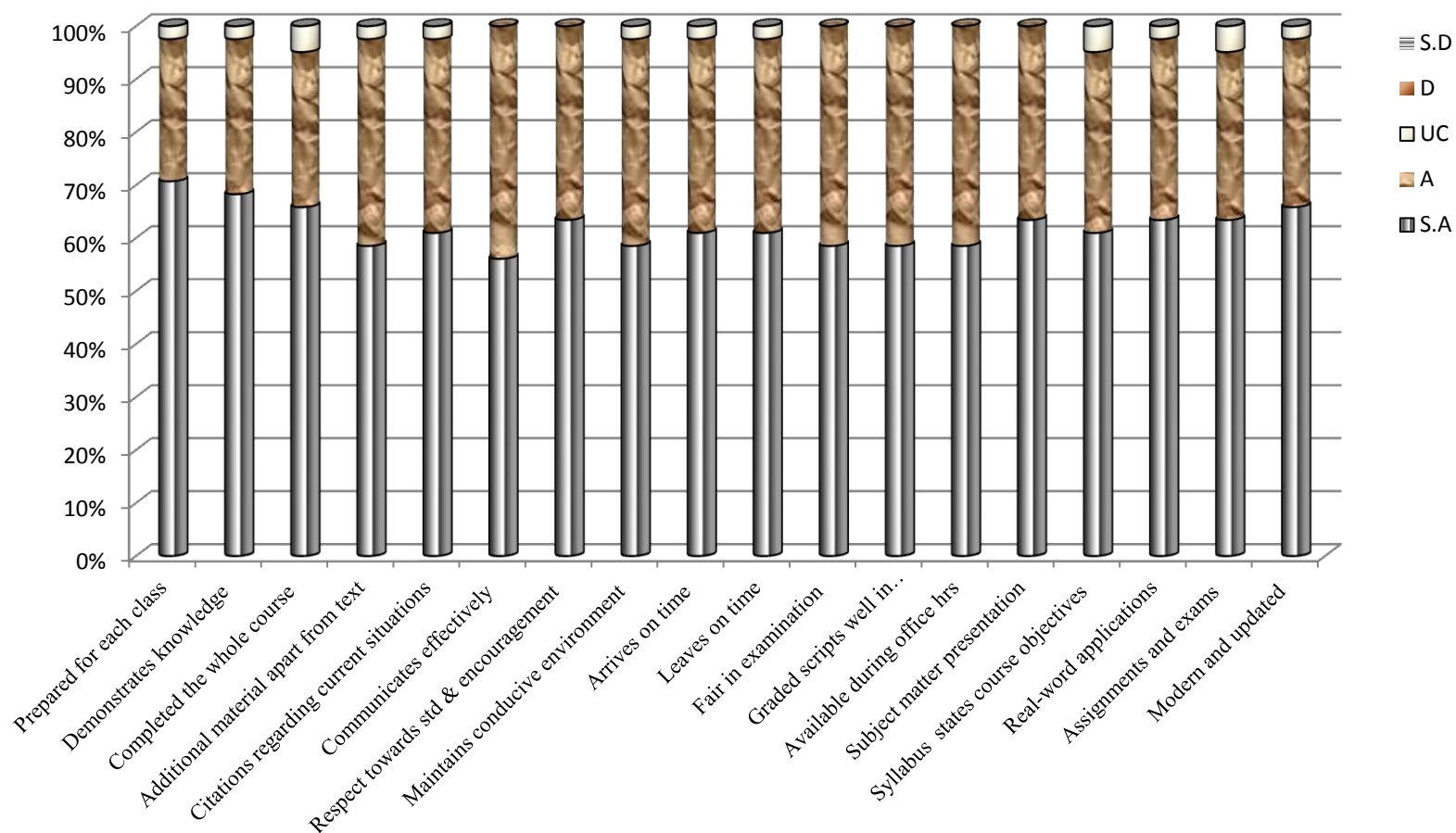
Department of Clinical Studies



Evaluation teacher 4

This bar graph reflected excellent performance of the teachers in all respect. 65% of the student stated that the teacher completed the whole course. Beside 58% student reported that the teacher leave on time.

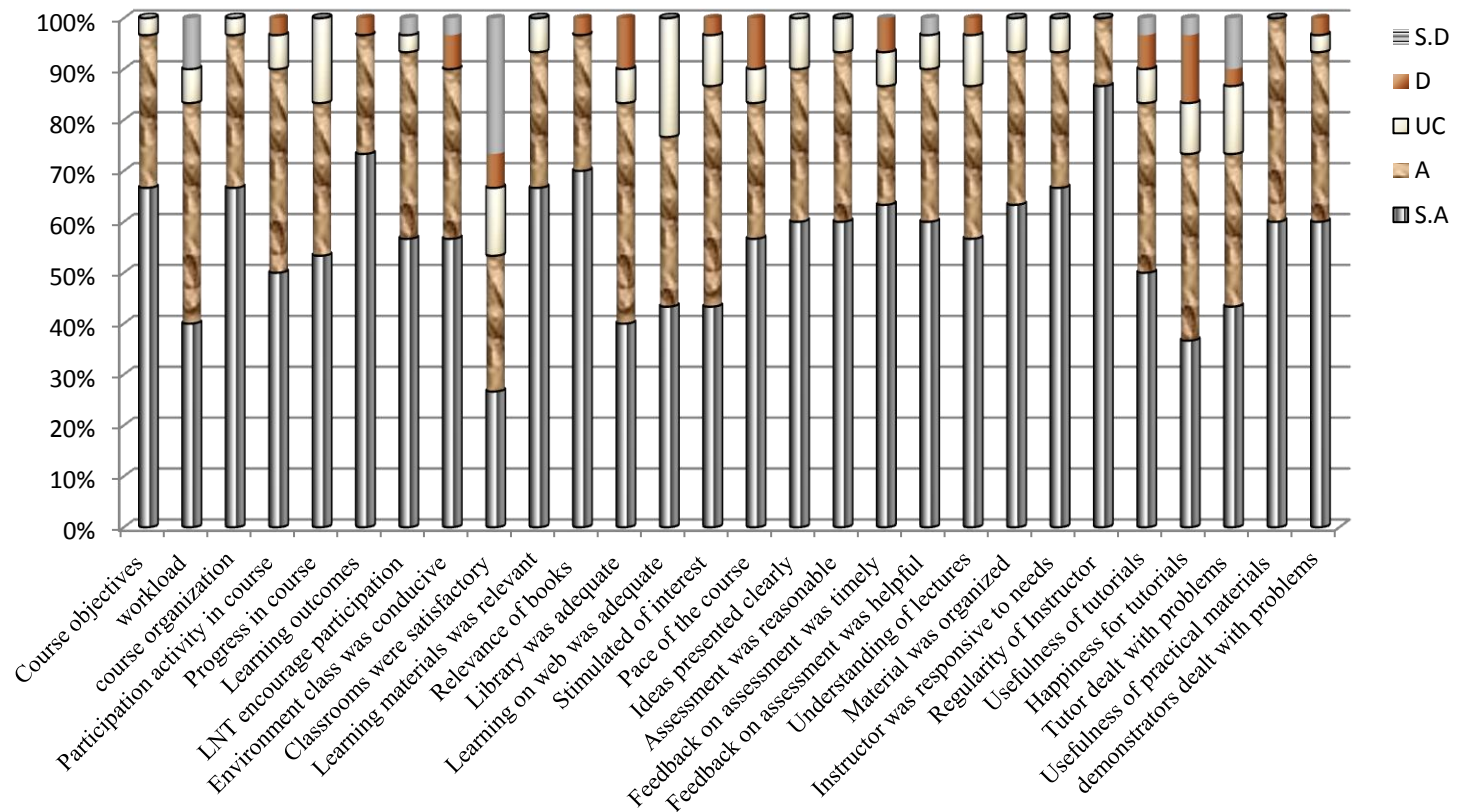
Department of Clinical Studies



Evaluation teacher 5

This bar graph reflected excellent performance of the teachers in all respect. 69% of the student stated that the teacher is prepared for each class. Beside 67% student reported that the teacher demonstrate knowledge.

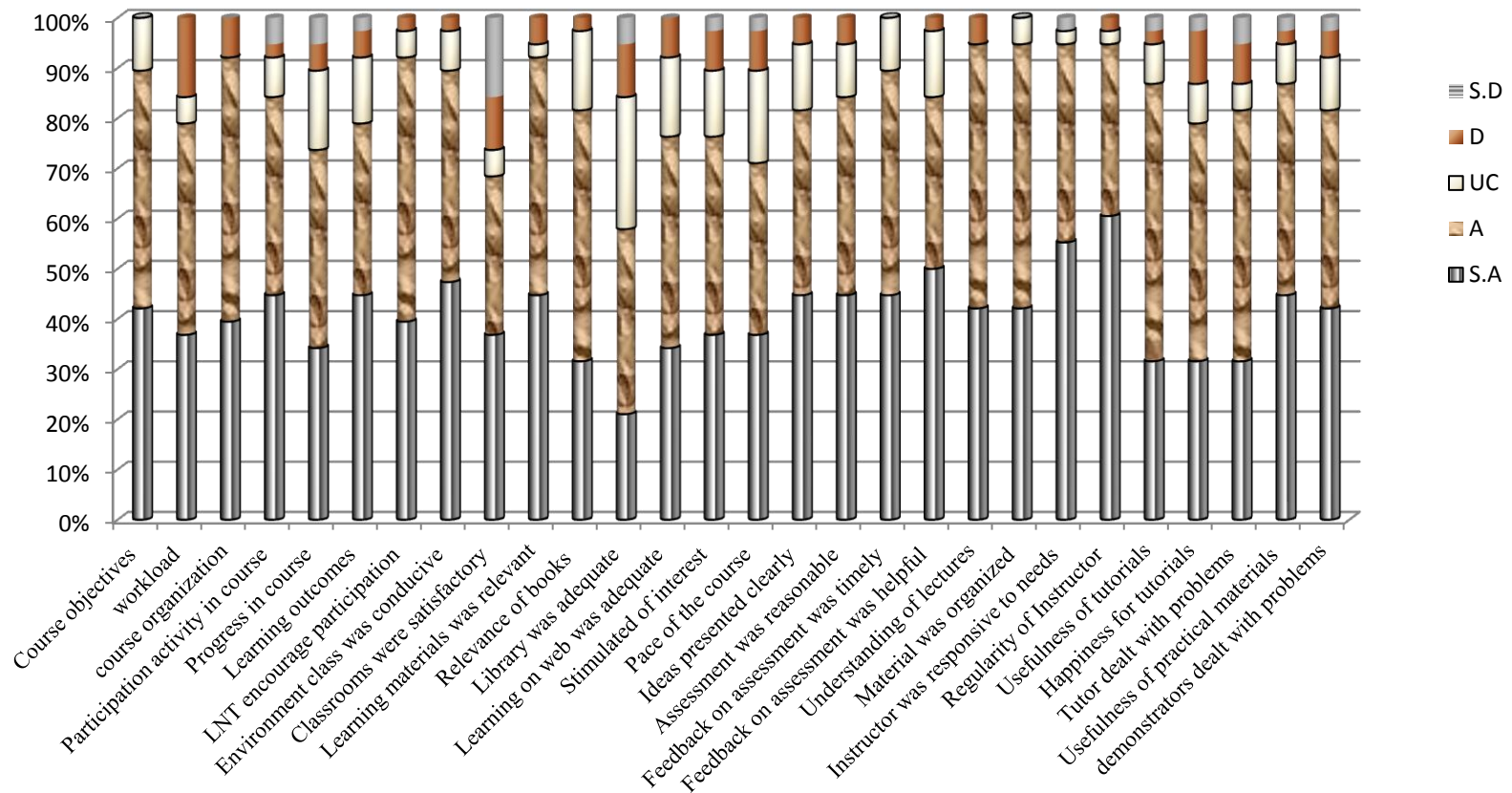
Courses Evaluation Department of Livestock Production and Management



Course AN-102 (Teacher 2)

67% students strongly agreed that course objectives were clear and well organized. The students' participation level was 80% . 53% students strongly agreed that they made progress in the course.

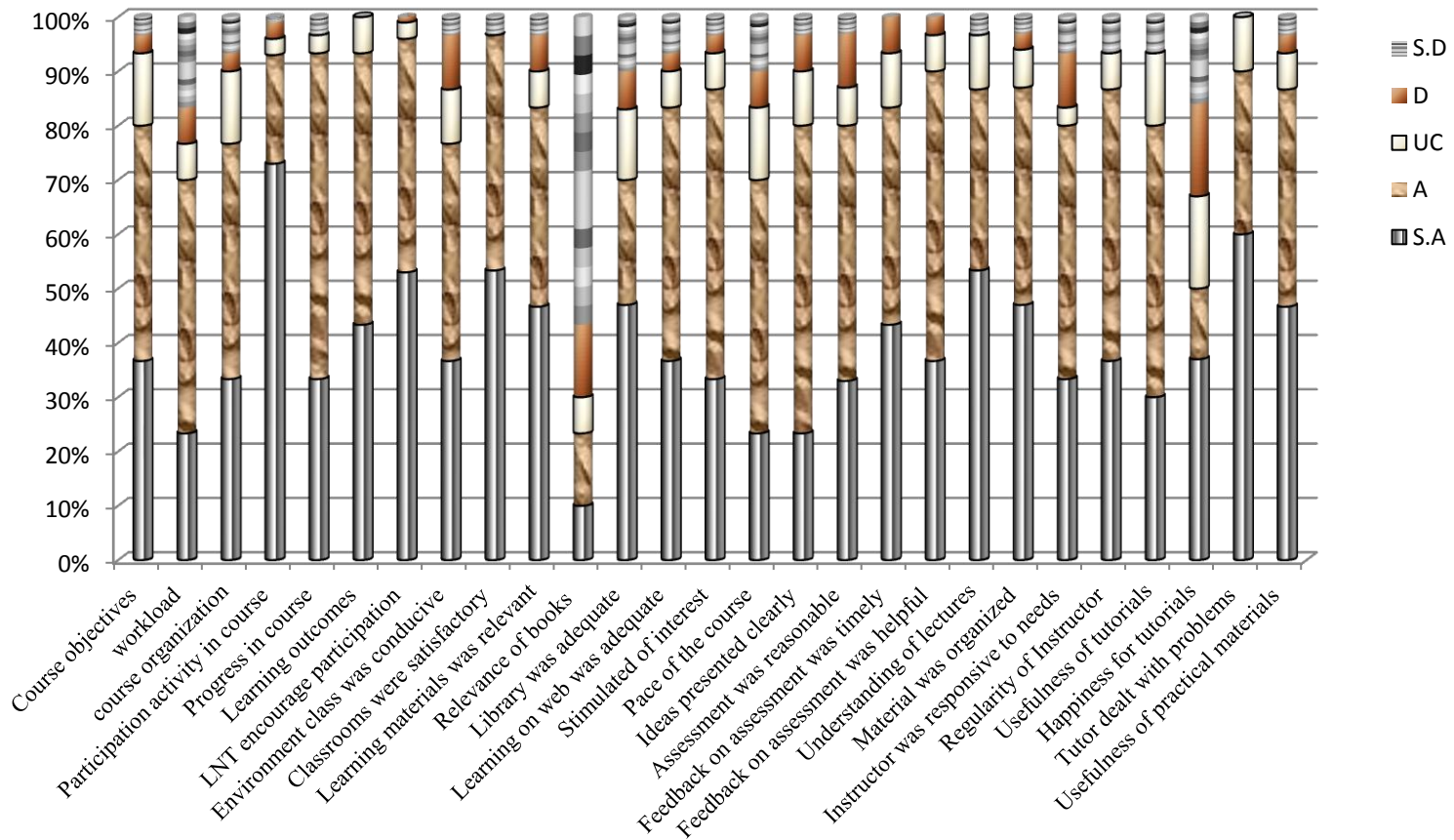
Department of Livestock Production and Management



Course AN-201 (Teacher 3)

About 45% of the students strongly agreed that they actively participated in the course and 34% and 39% strongly agreed and agreed respectively that they made progress in the course.

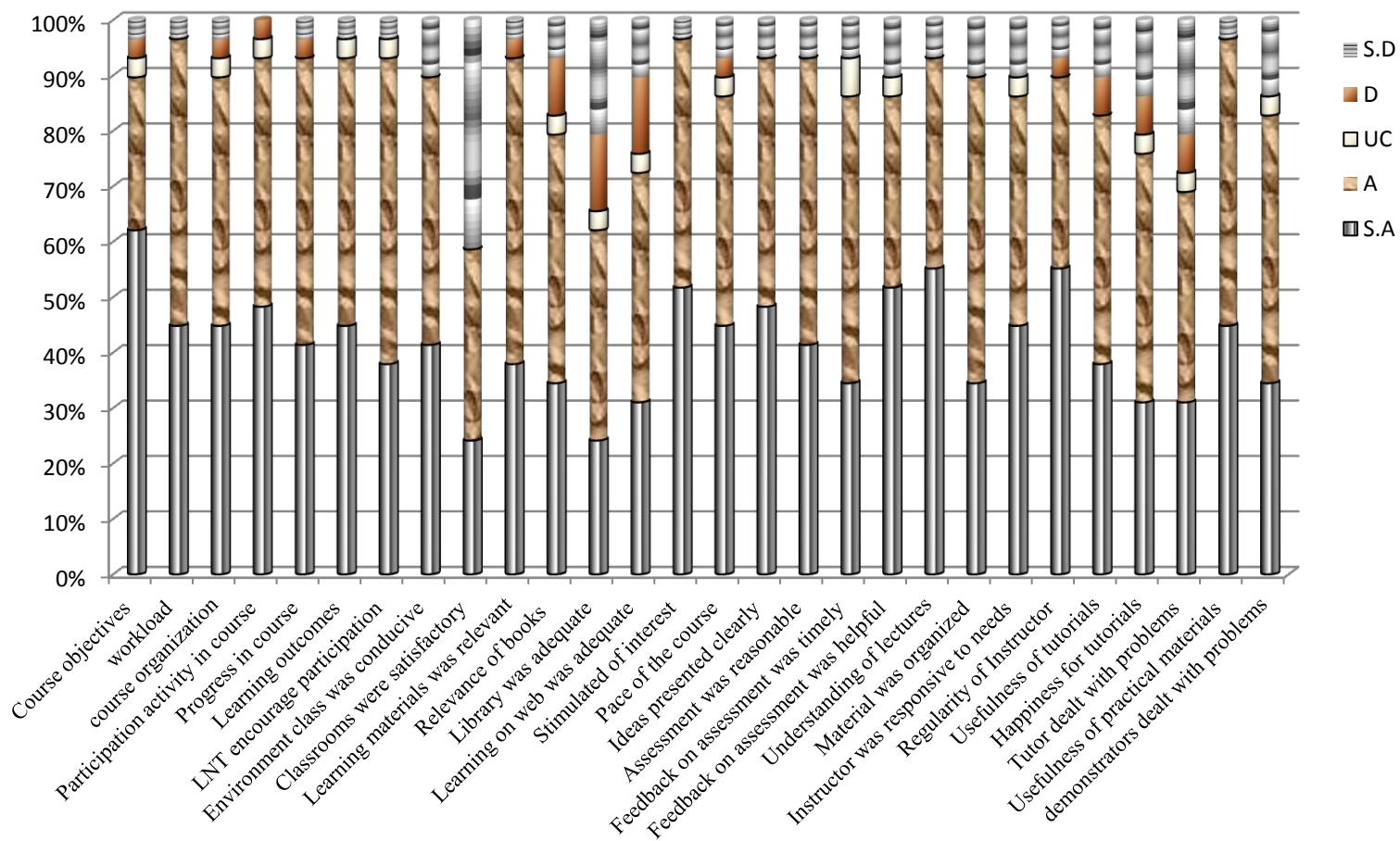
Department of Livestock Production and Management



Course AN-202 (Teacher 3)

About 37% and 43% students strongly agreed and agreed, respectively that the course objectives were clear, course work was manageable and course was well organized. The level of students' participation was found to be 93% .

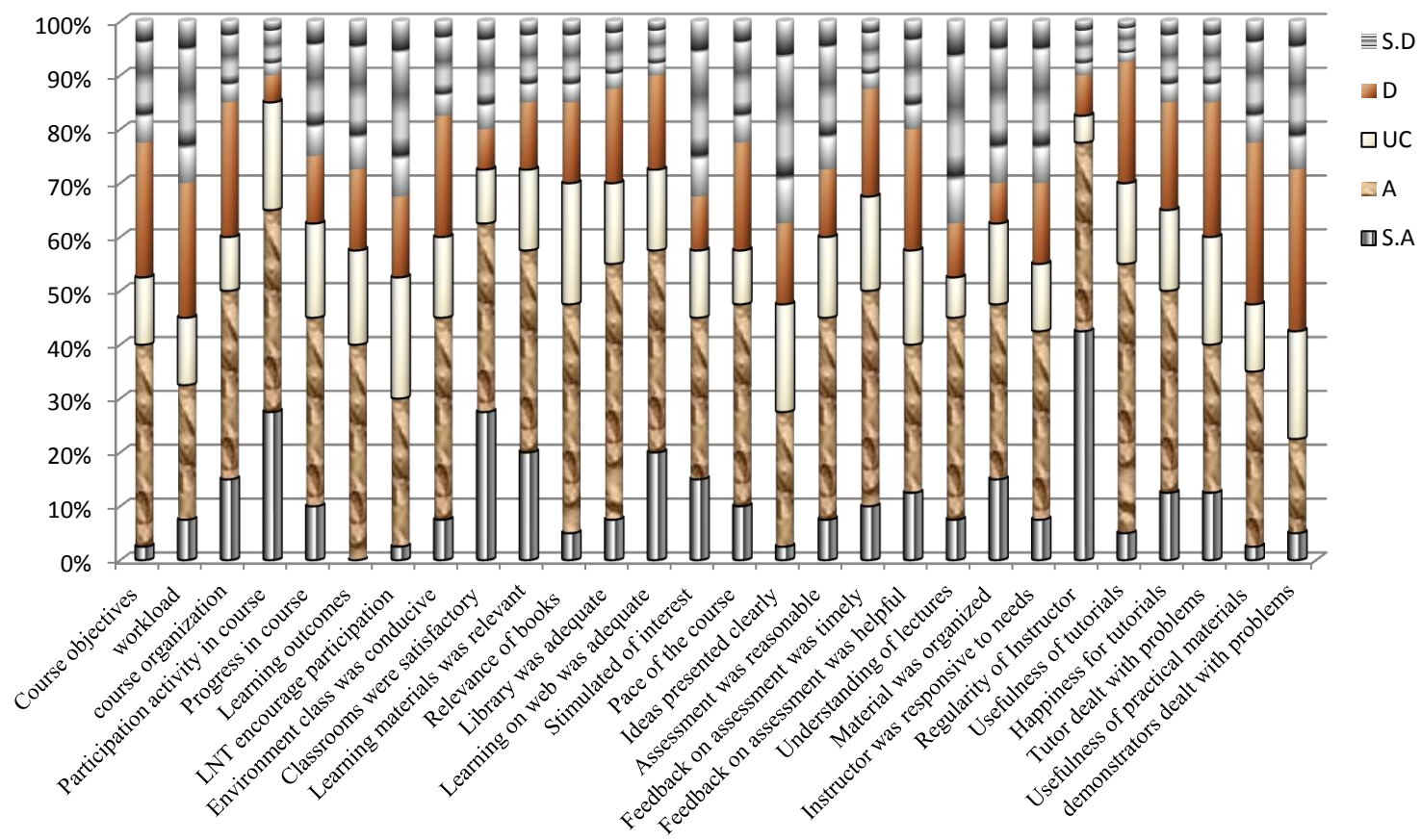
Department of Livestock Production and Management



Course AN-301 (Teacher 1)

About 62% students strongly agreed that the course objectives were clear. 41% students were not satisfied about classrooms, but still, the level of their own attendance (69%) was satisfactory.

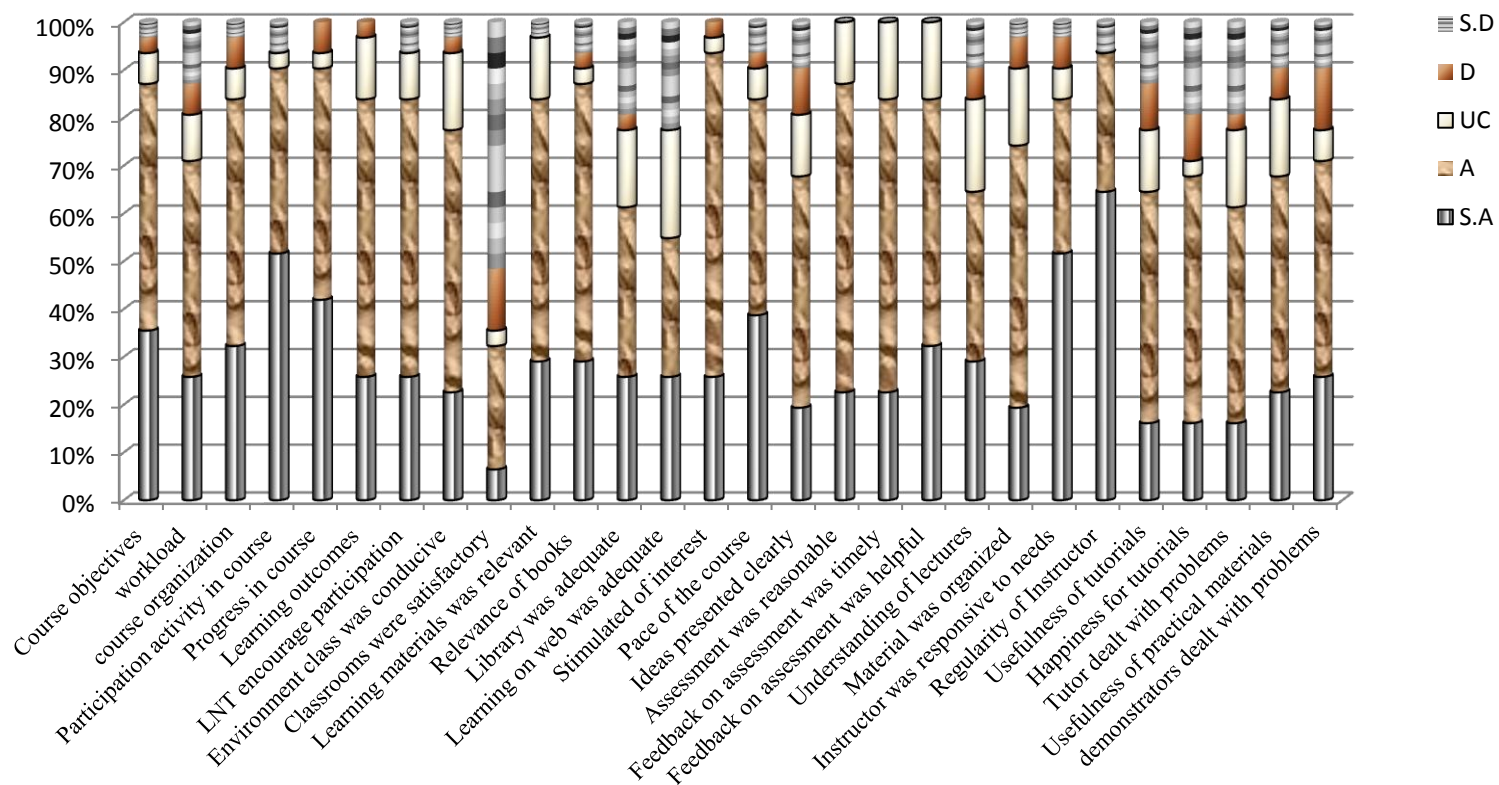
Department of Livestock Production and Management



Course ABG-102 (Teacher 4)

It was strongly agreed and agreed by 23% and 38% students that course objectives were clear. Also, 30% and 25% strongly agreed and agreed respectively that the course contents were manageable.

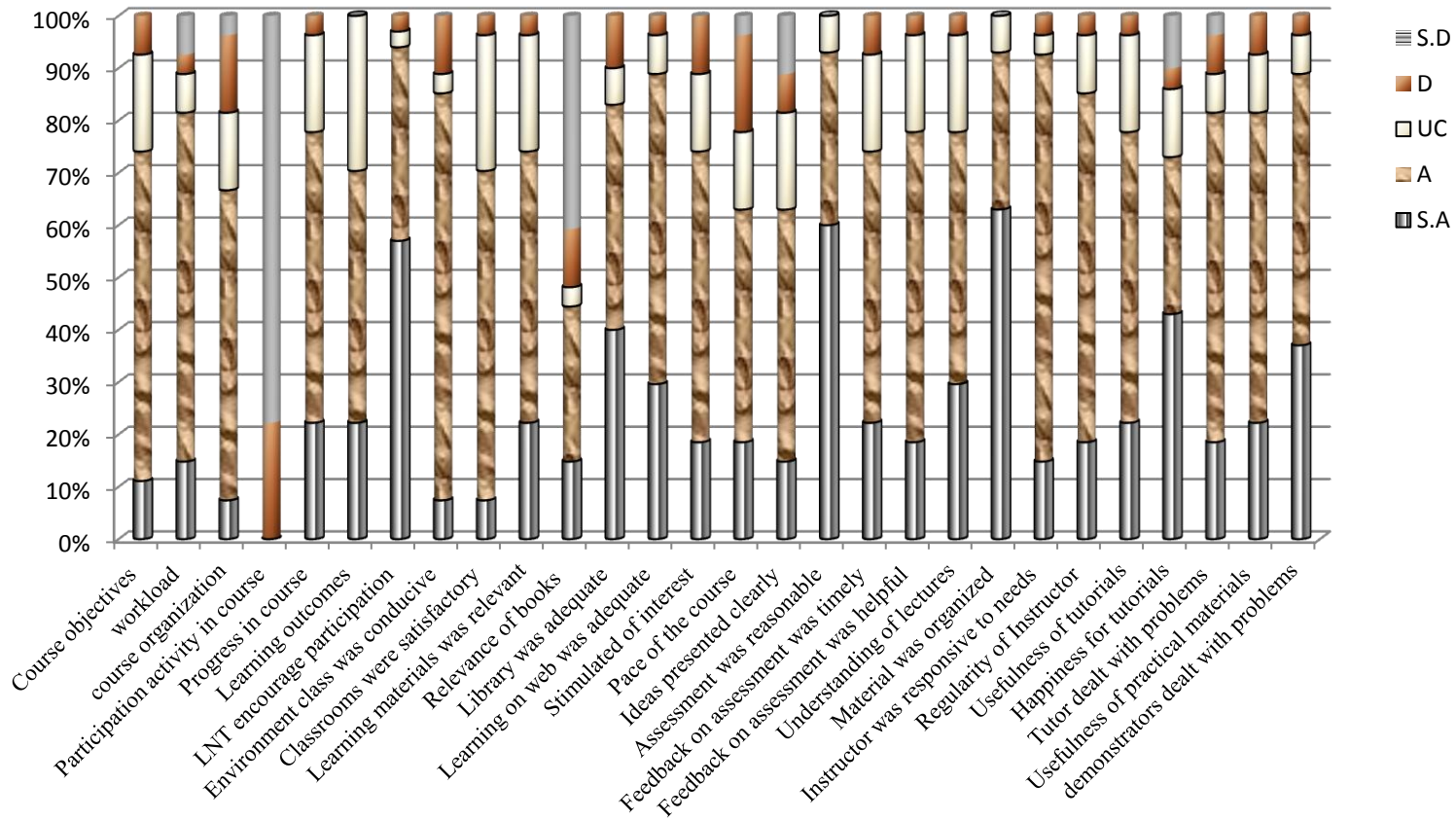
Department of Livestock Production and Management



Course ABG-201 (Teacher 4&7)

It was agreed by students that course objectives were clear and course contents were manageable. Students complained about classrooms conditon.

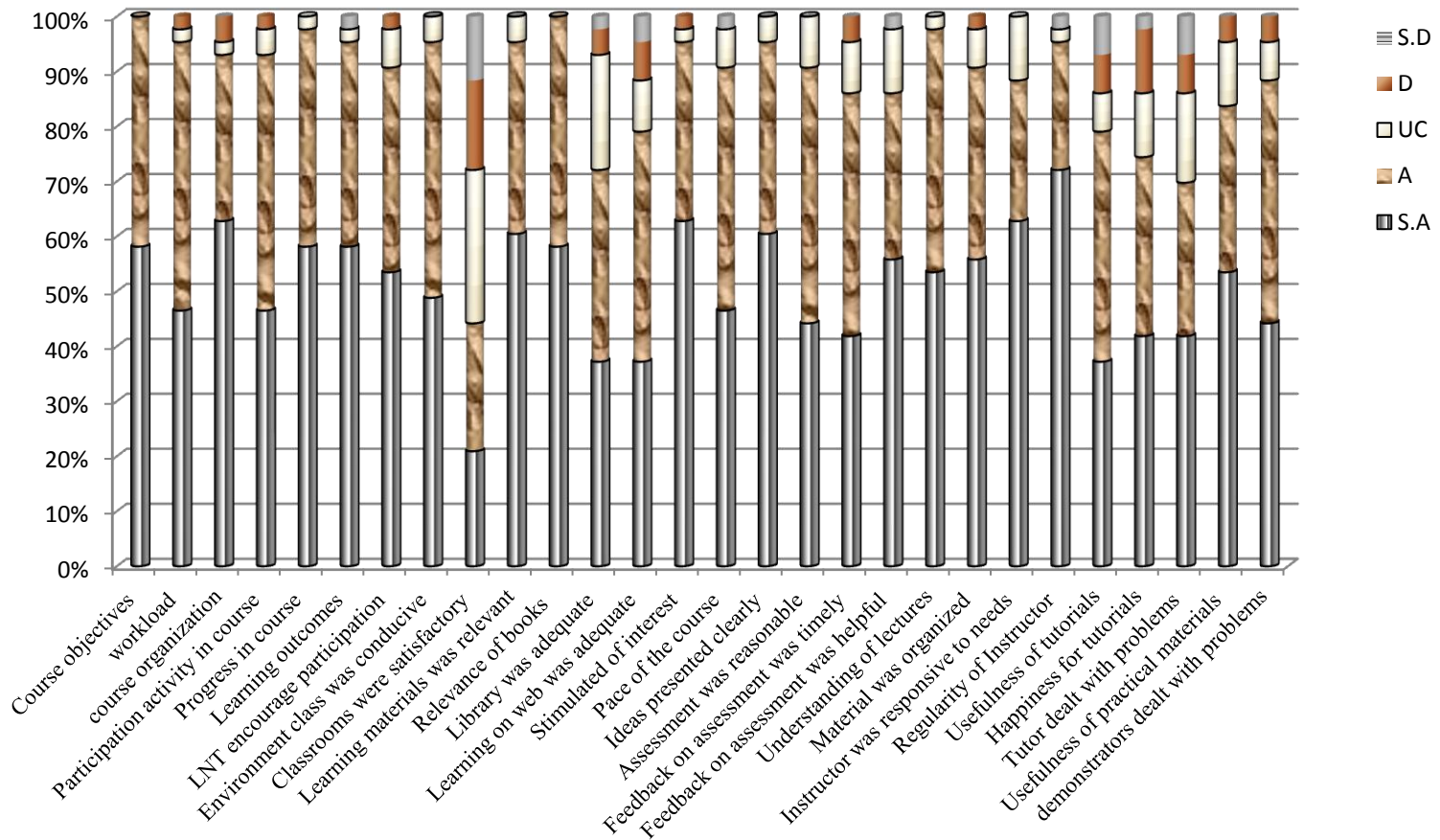
Department of Livestock Production and Management



Course ABG-202 (Teacher 2)

The majority of students (66% to 82%) disclosed that the course objectives were clear, course work was manageable and the course was well organized. 70% students strongly affirmed that they made progress in the subject.

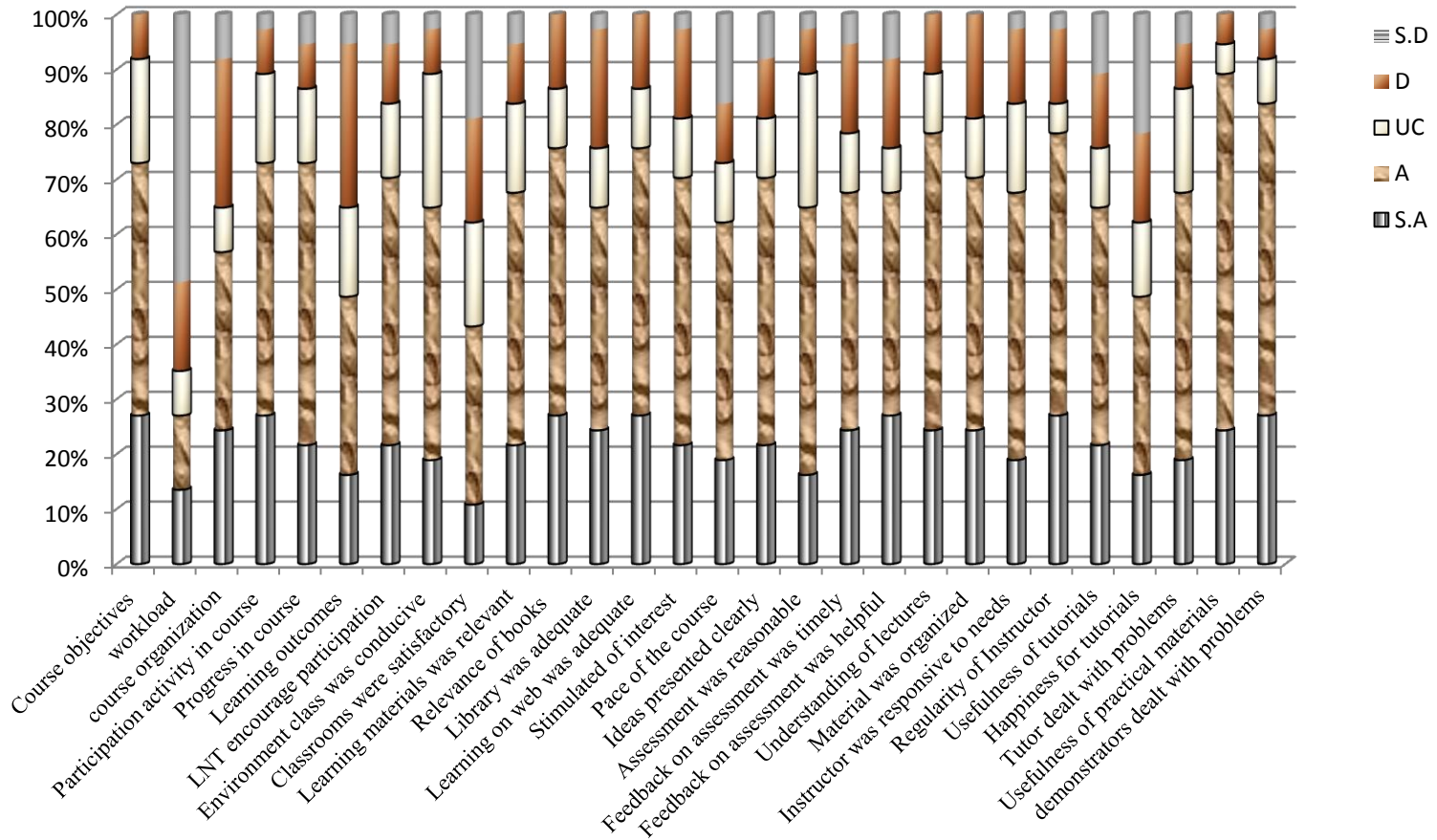
Department of Livestock Production and Management



Course LM-101 (Teacher 6)

About 58% students strongly agreed that the course objectives were clear and 63% had the idea that the course was well organized. Good percentage of students claimed that pace of the course was good.

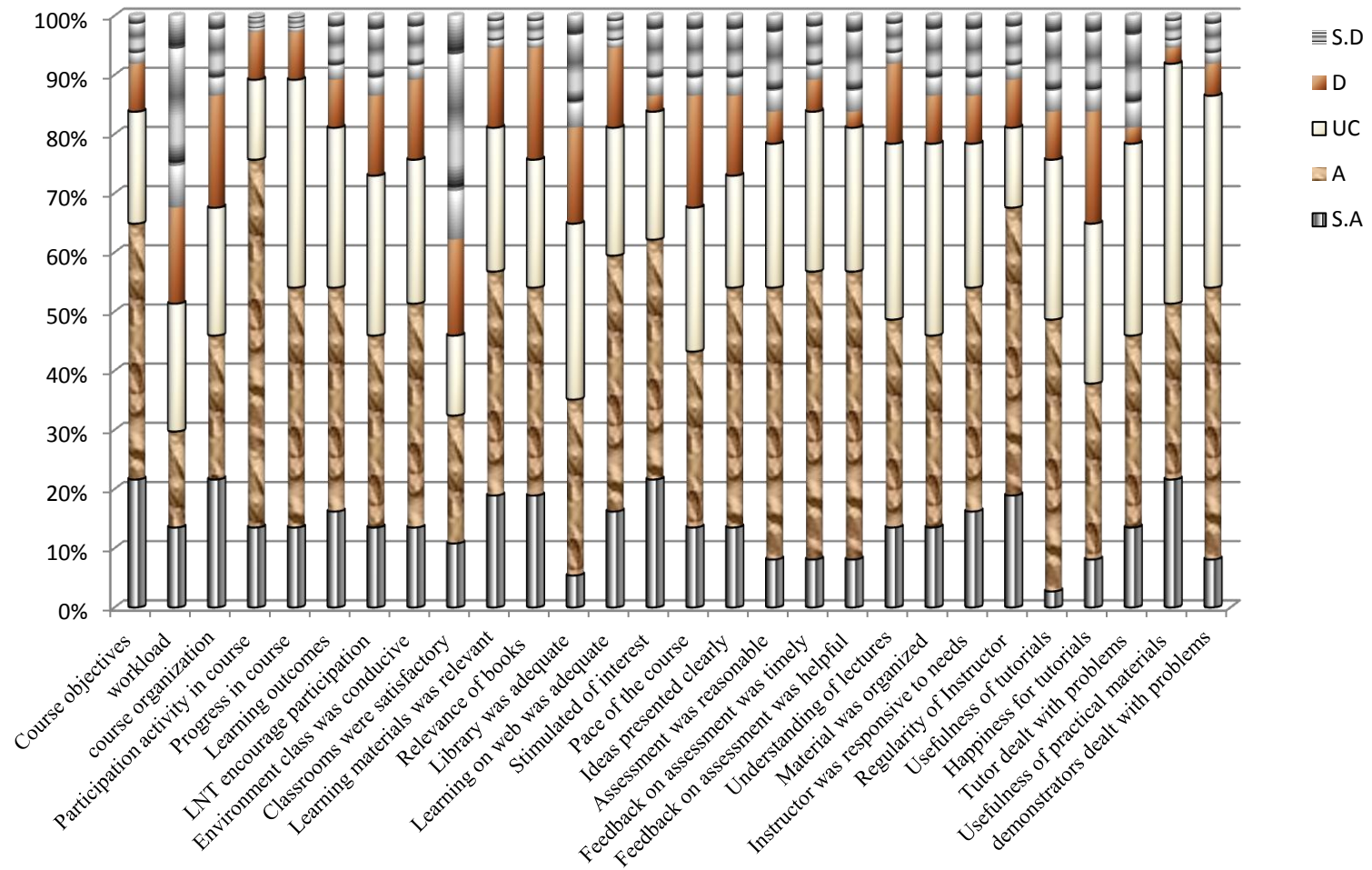
Department of Livestock Production and Management



Course LM-301 (Teacher 6)

Majority of the students indicated that course objectives were clear but only 14% and 14% strongly agreed and agreed respectively, that the course work was manageable. Studentst agreed that course was well organized.

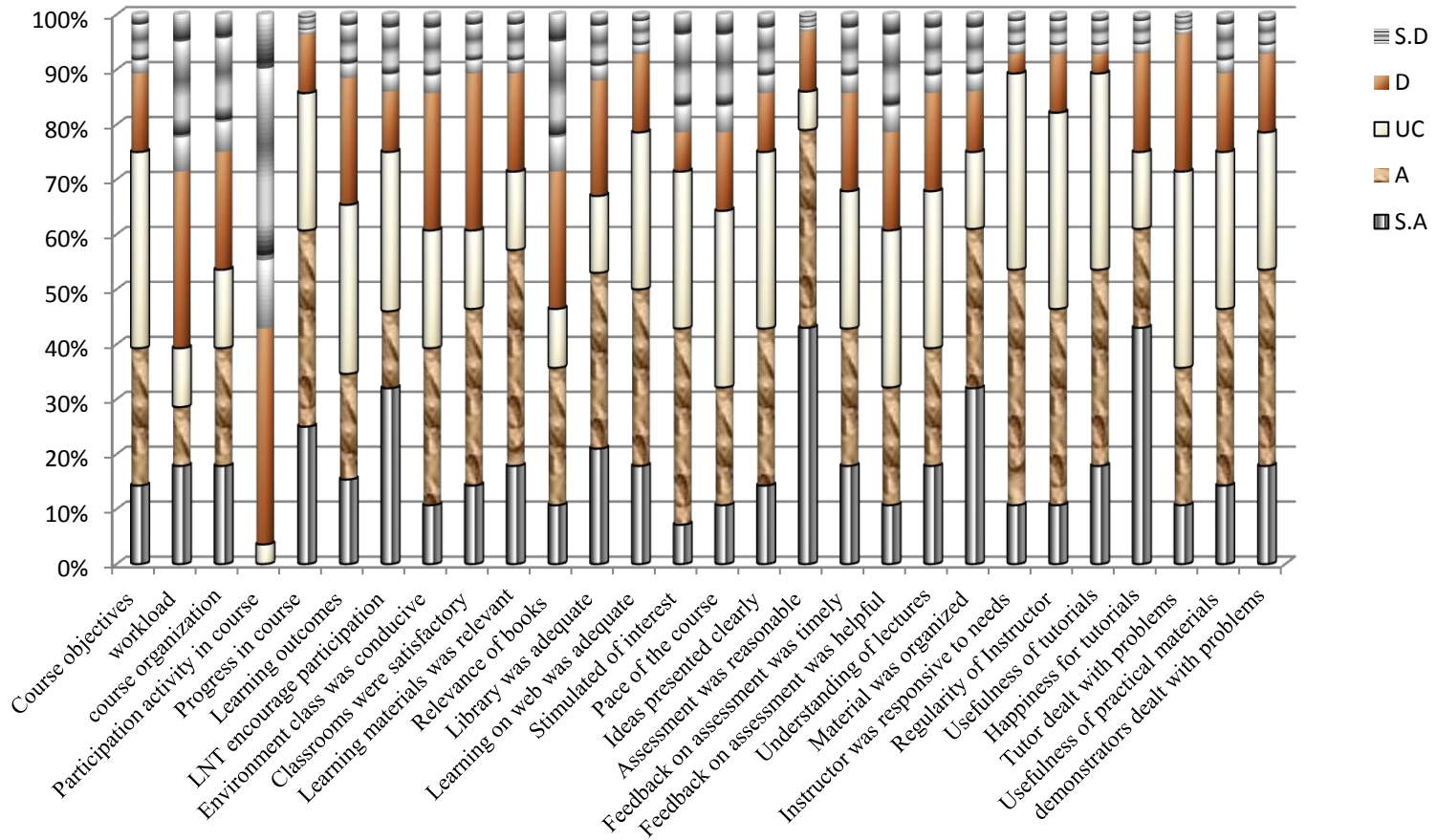
Department of Livestock Production and Management



Course LM-302 (Teacher 6)

A large number of students indicated that course objectives were clear. Whereas, only few students were of the view that course work was manageable. Majority of the students were not happy with class rooms condition.

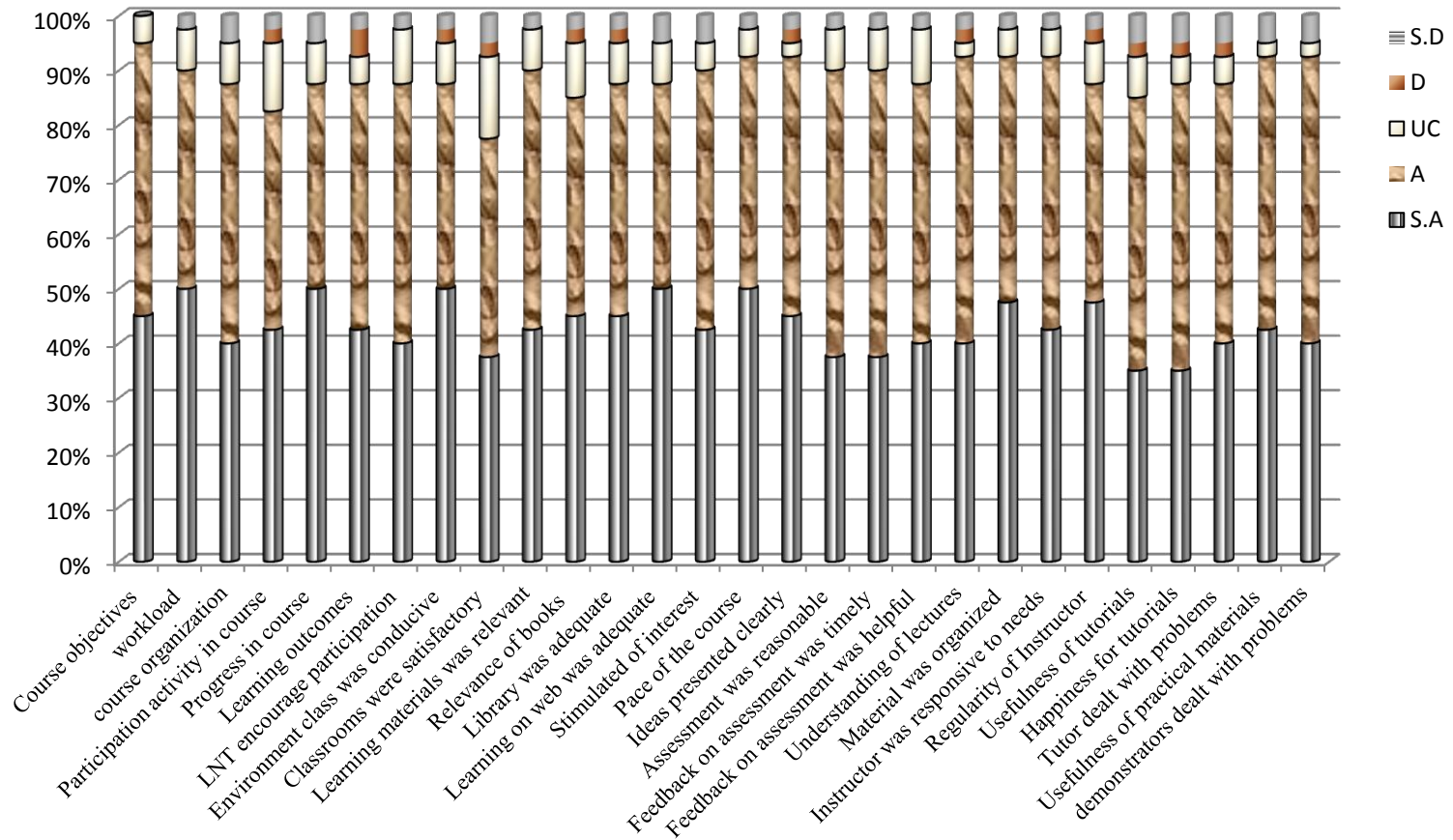
Department of Livestock Production and Management



Course LM-304 (Teacher 5)

The overall environment in the class was conducive to learning. The course objectives were clear and course work was manageable. 46% students strongly agreed that the tutor dealt effectively with their problems.

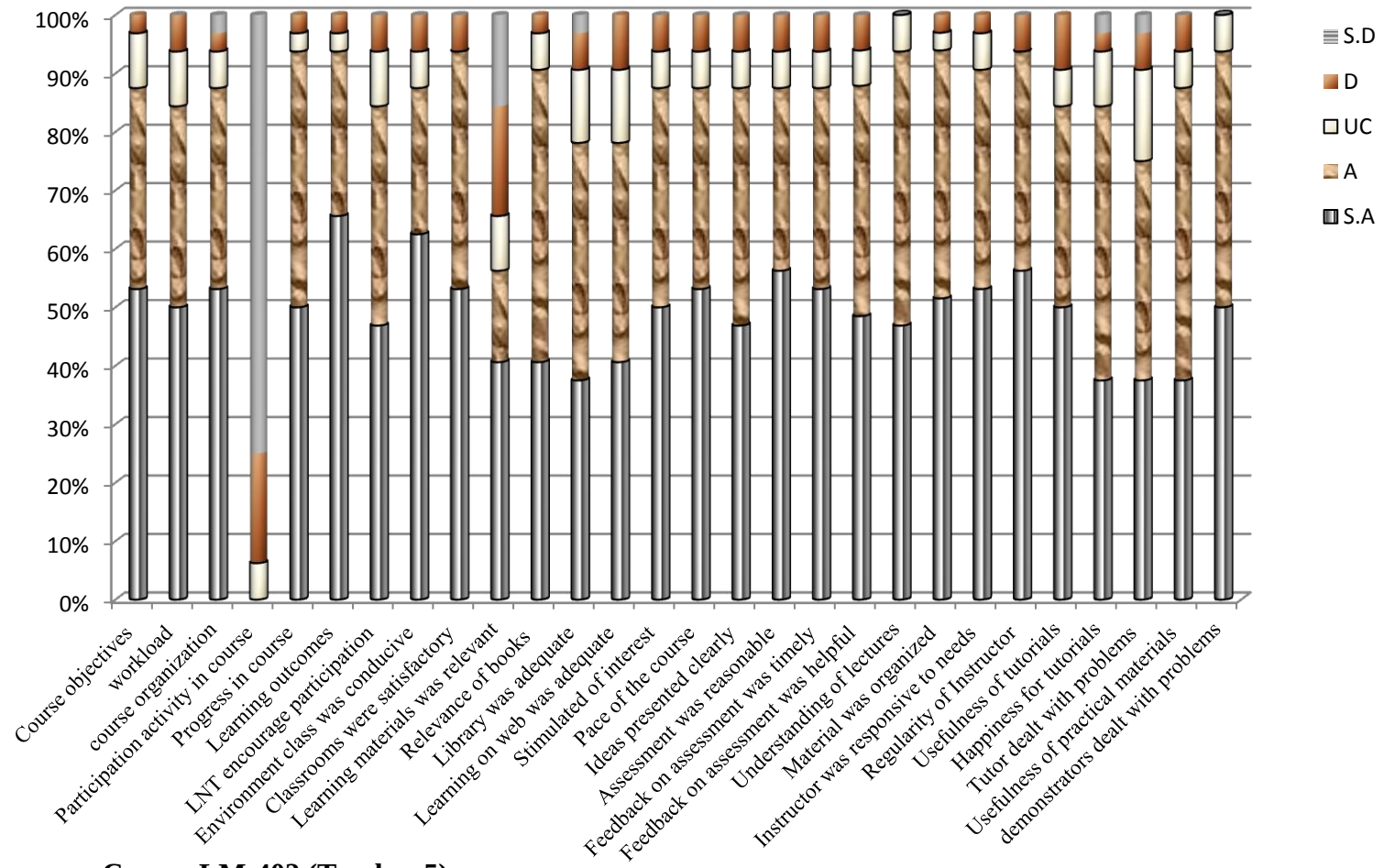
Department of Livestock Production and Management



Course LM-401 (Teacher 6)

The course objectives were clear and workload of the course was also manageable. The course was well organized and students agreed about the progress they made in the course.

Department of Livestock Production and Management

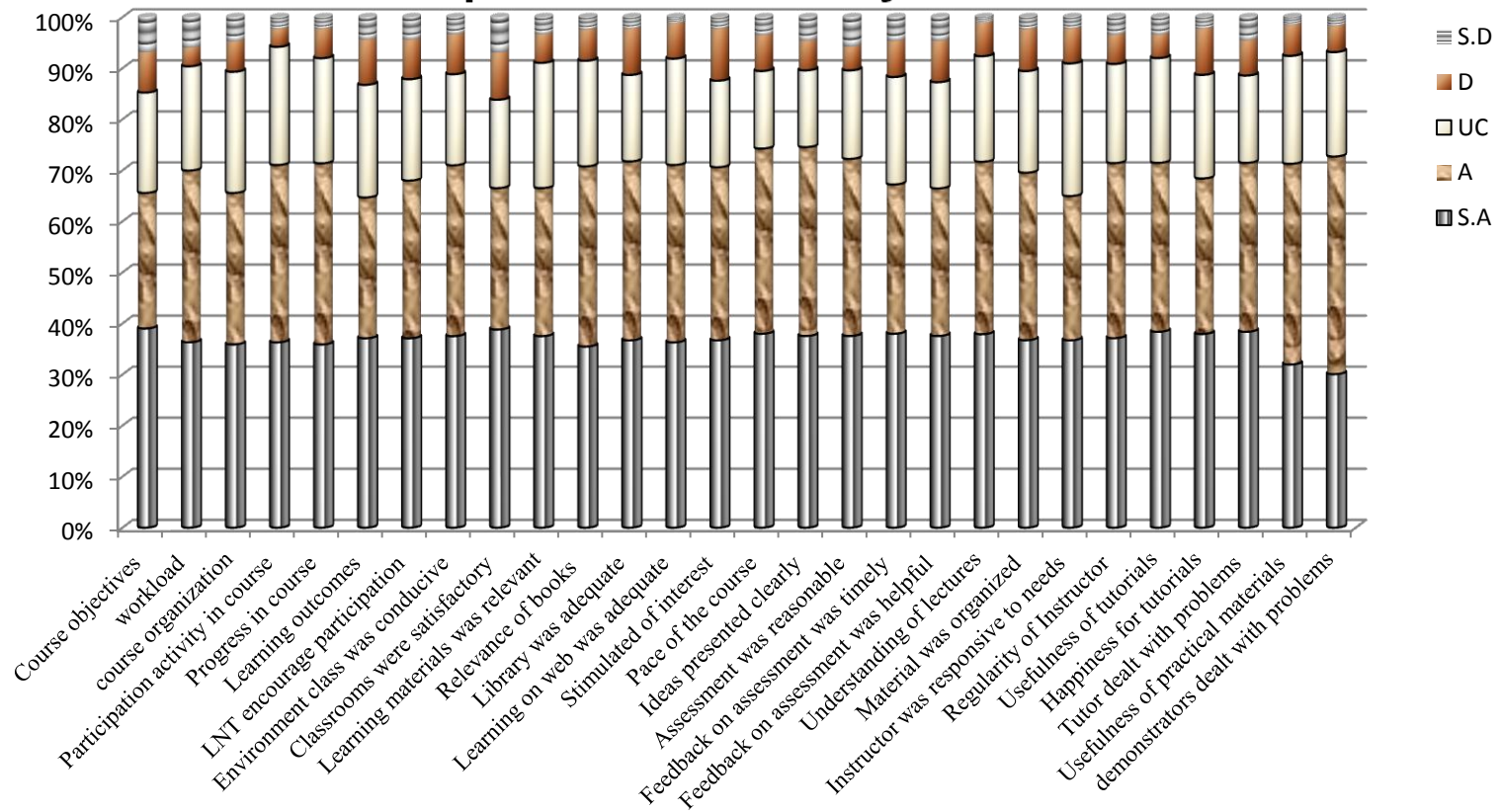


Course LM-402 (Teacher 5)

The course objectives were clear and course work was manageable. 47% students strongly agreed that the tutor dealt effectively with their problems. The 6% students were not satisfied with class room environment.

Course Evaluation

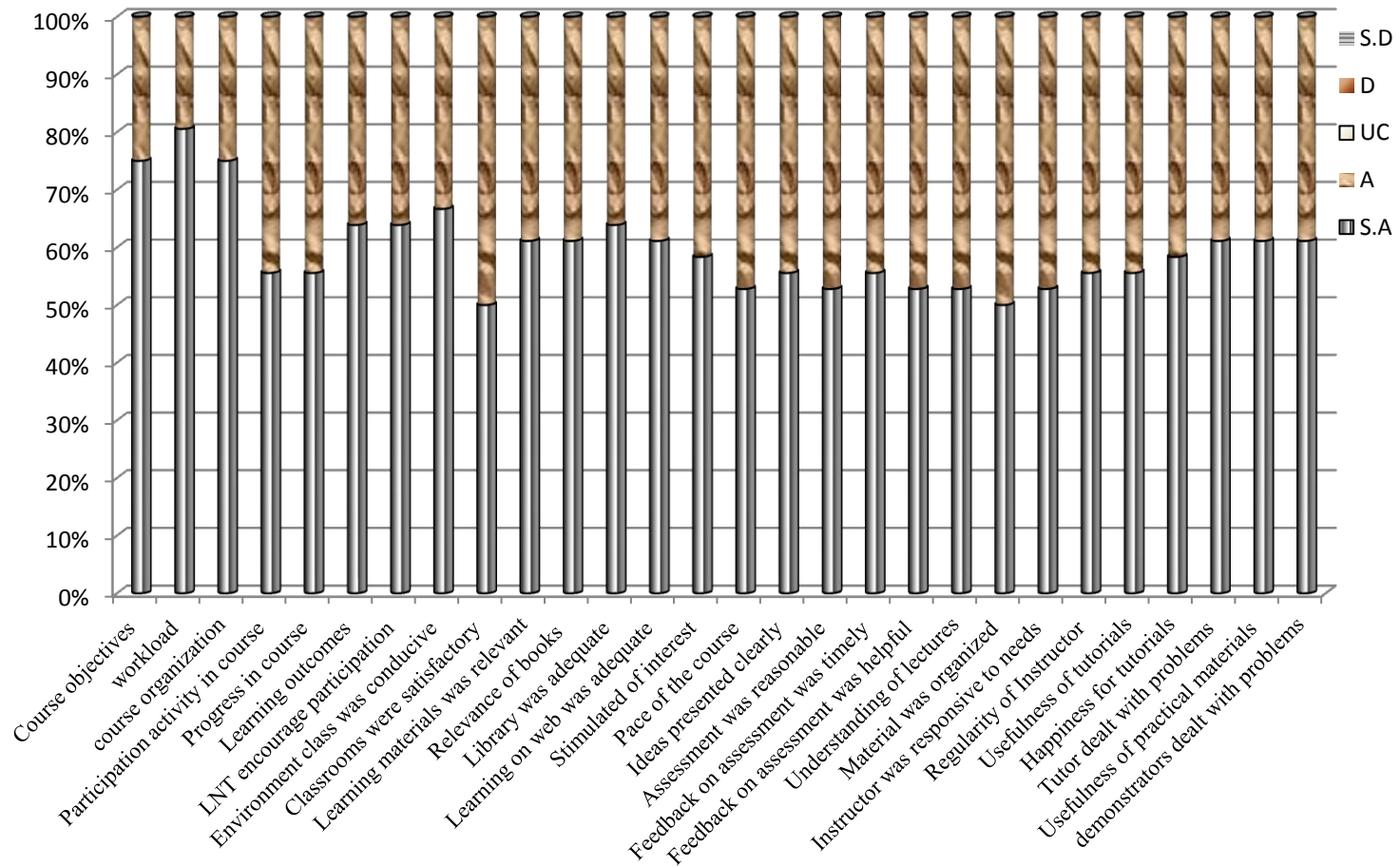
Department of Poultry Science



Course PS-302 (Teacher 1)

About 38 and 27% students strongly agreed and agreed respectively that course objective were clear and 37% and 28% strongly agreed and agreed respectively that agreed that learnig material was adequate. About 35% of the student

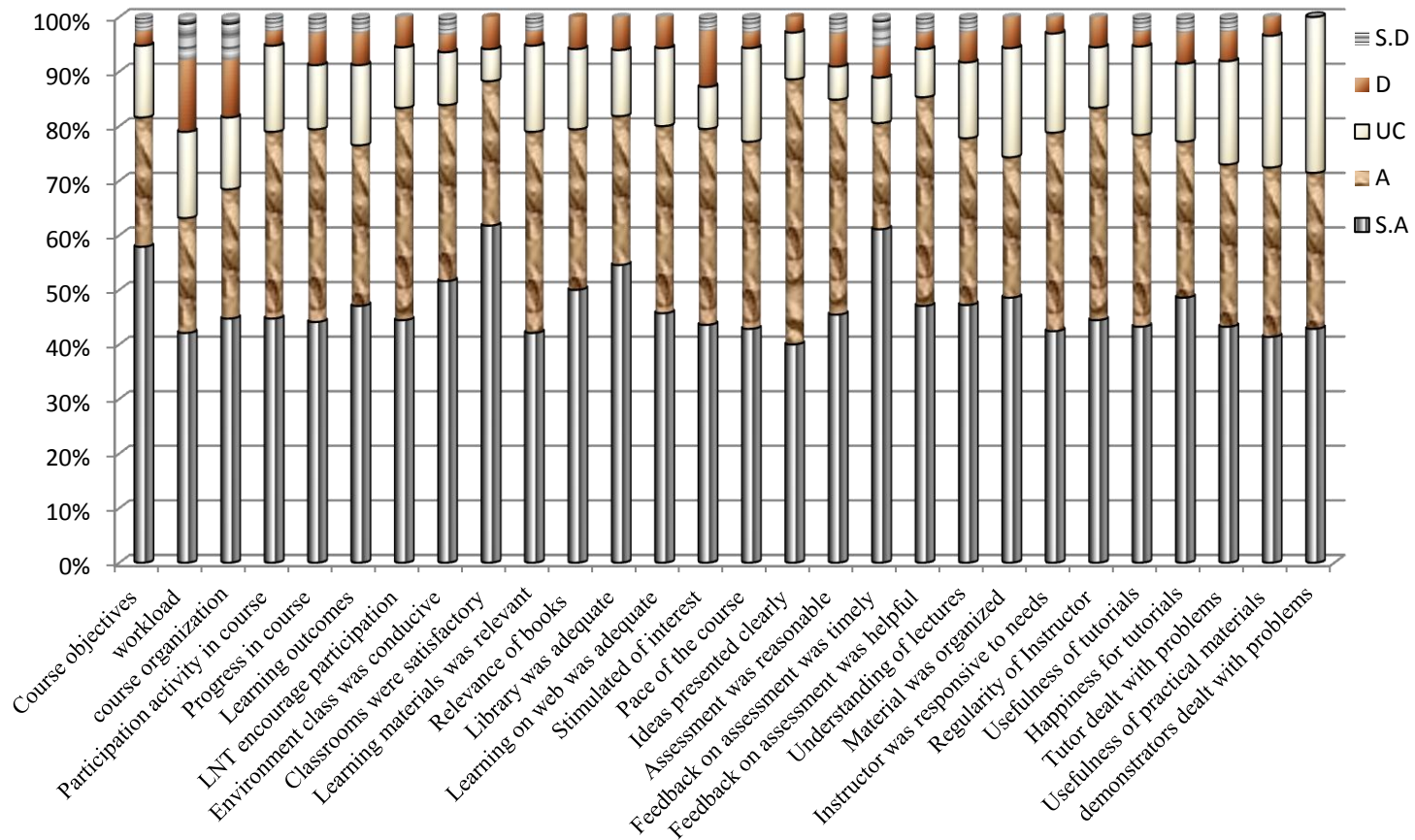
Department of Poultry Science



Course PS-501 (Teacher 3)

About 73 and 27% students strongly agreed and agreed respectively that course objective were clear and 80% and 20% strongly agreed and agreed respectively that workload was manageable.

Department of Poultry Science

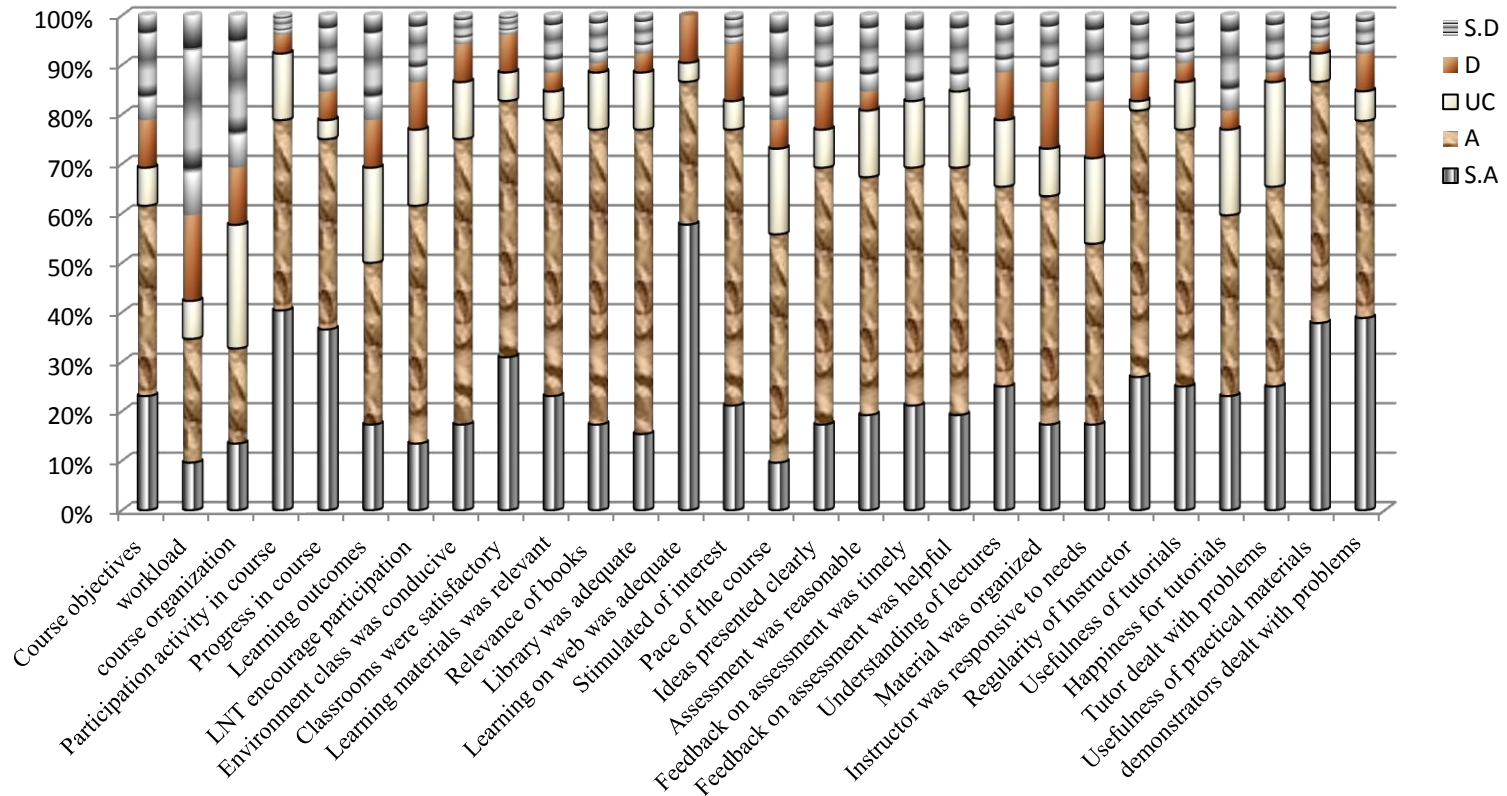


Course Evaluation PS-202 (Teacher 2)

About 57 and 23% students strongly agreed and agreed respectively that course objective were clear and 60% and 20% strongly agreed and agreed respectively that the feedback on the assesment was timely.

Course Evaluation

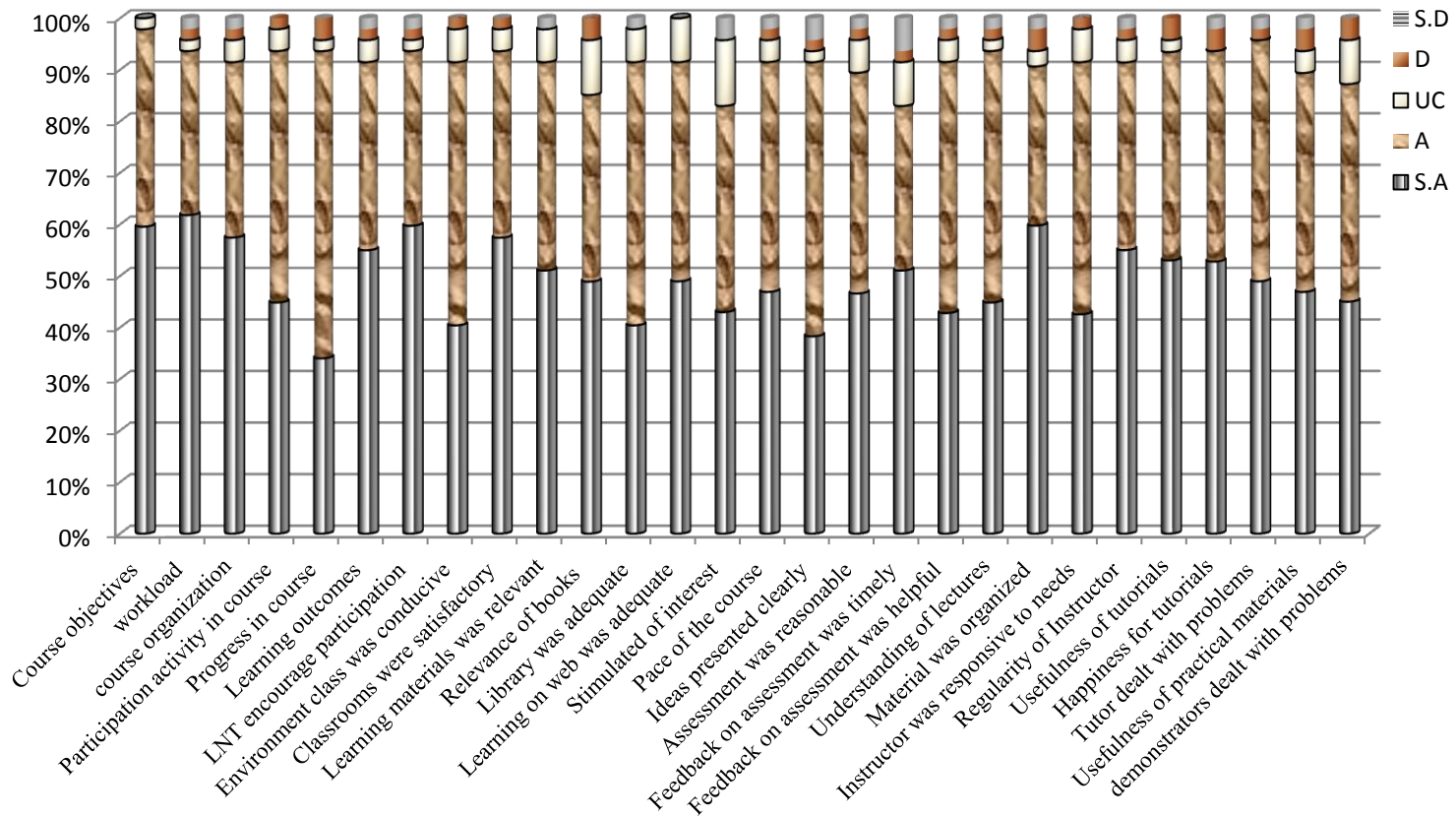
Department of Bio Medical Sciences



COURSE PHYS-101 (Teacher -2)

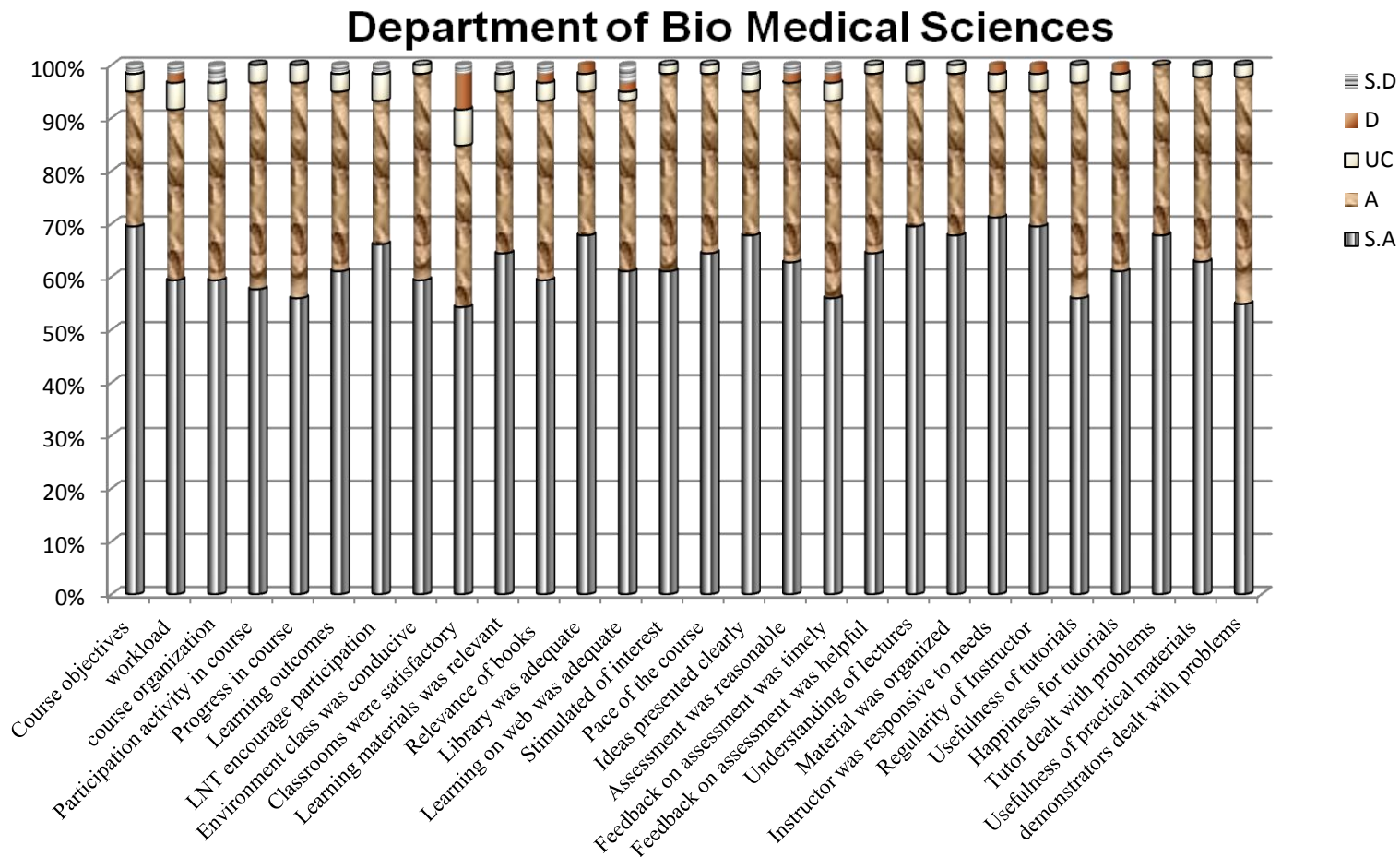
Round about 58% students strongly agreed that that learning was adequate, however, about 35% students strongly disagree that the workload was manageable due to lengthy course work. Along with that more than 70% students strongly agreed and agreed that they have made progress in the course.

Department of Bio Medical Sciences



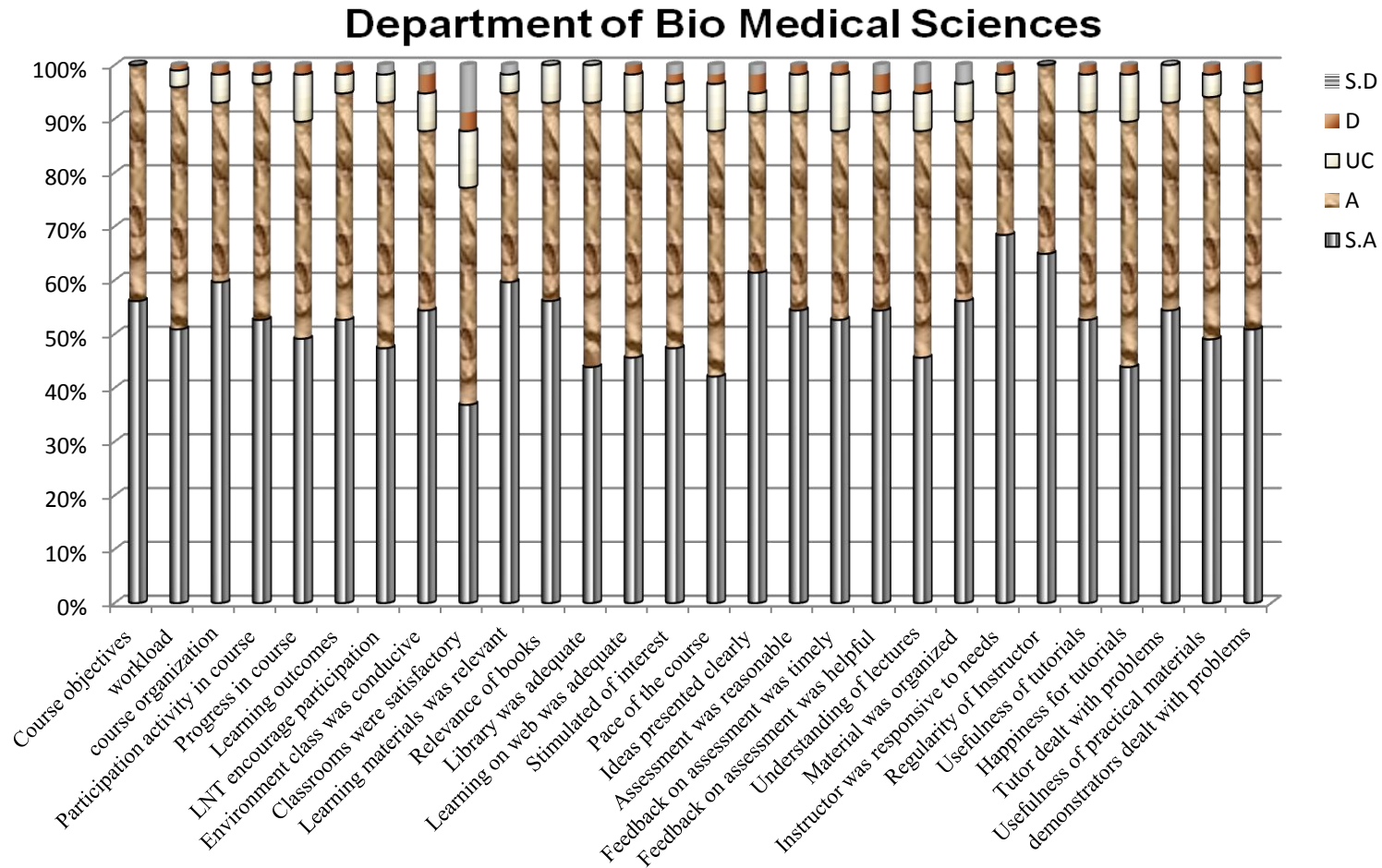
Course PHYS-102 (Teacher-1)

About 60% students stated that course objectives are clear and workload is manageable. Along with 33% strongly agreed and 59% agreed that they have made progress in the respective course and the material was organized by the teacher was stated by more than 60% students.



COURSE ANAT-101 (Teacher -3)

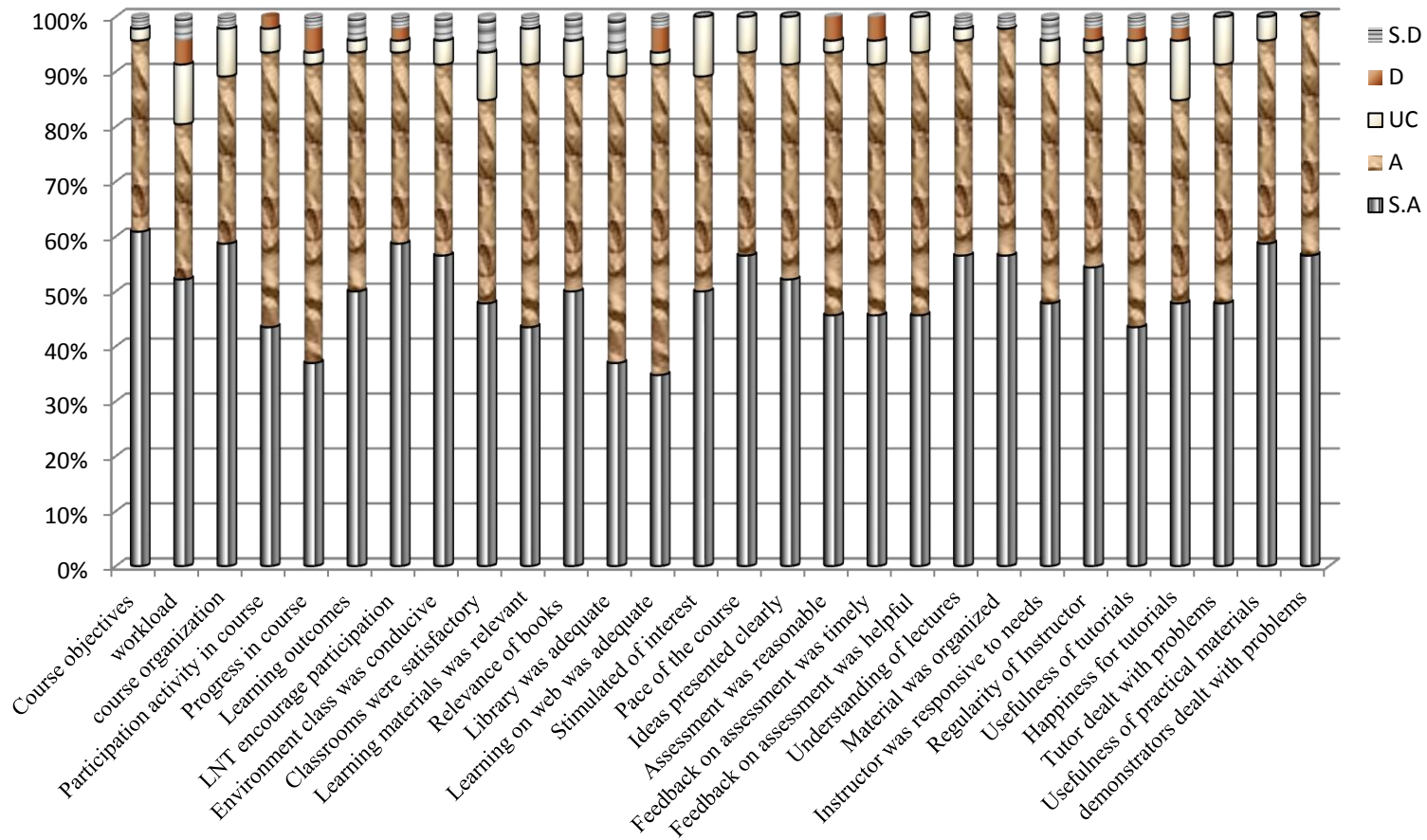
The students were satisfied that the course load was manageable and course objectives were clear (70%). Most of the students strongly agree that the course was organized and they have made progress in the course 58% and 54% respectively.



COURSE ANAT-103 (Teacher – 4)

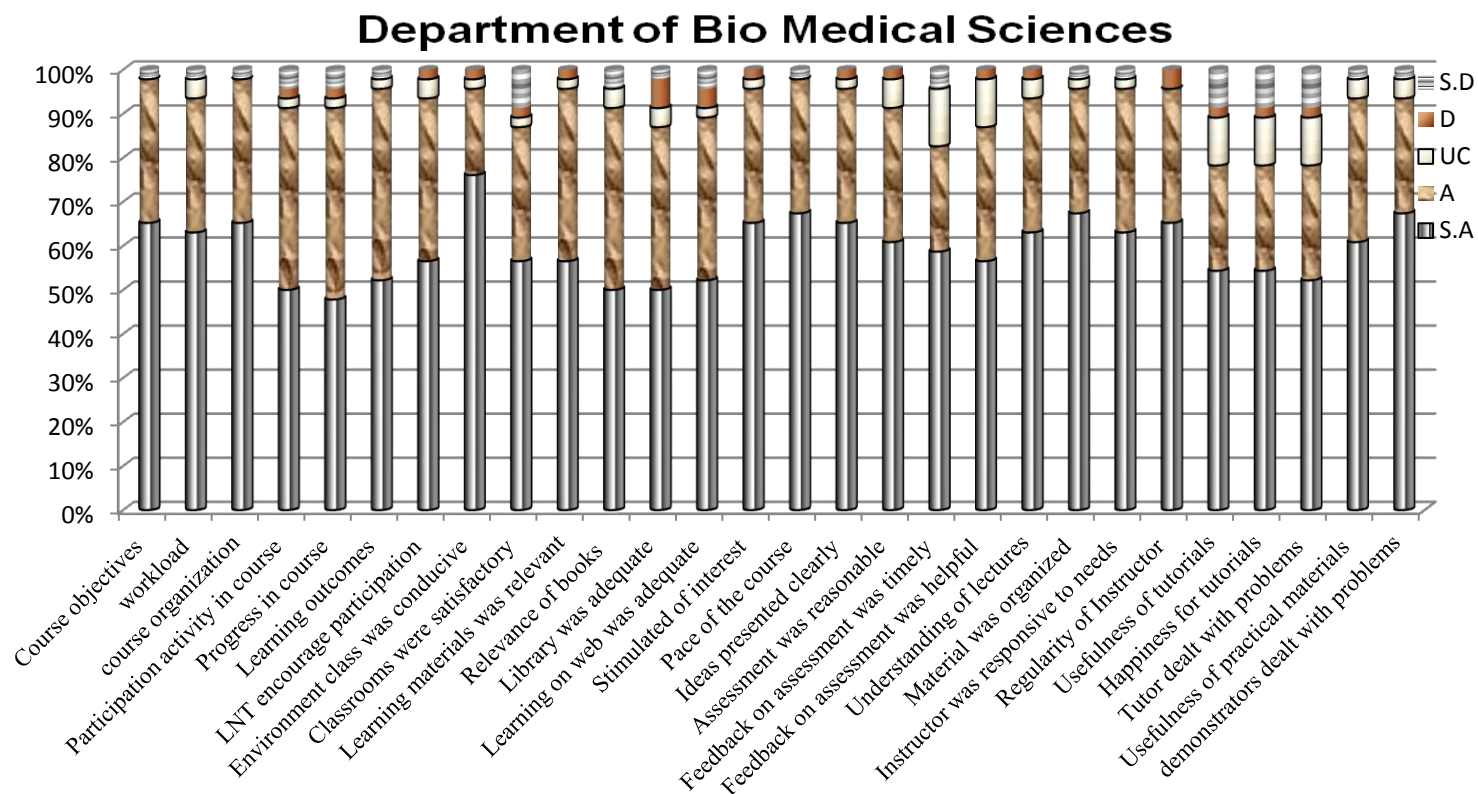
Most of the students strongly agreed with instructor's responsiveness to the needs (68%) and about 2% strongly disagreed that they have participated actively in the course. While most of the students have either strongly agreed or agreed that they have made progress in the course.

Department of Bio Medical Sciences



Course Evaluation ANAT-104

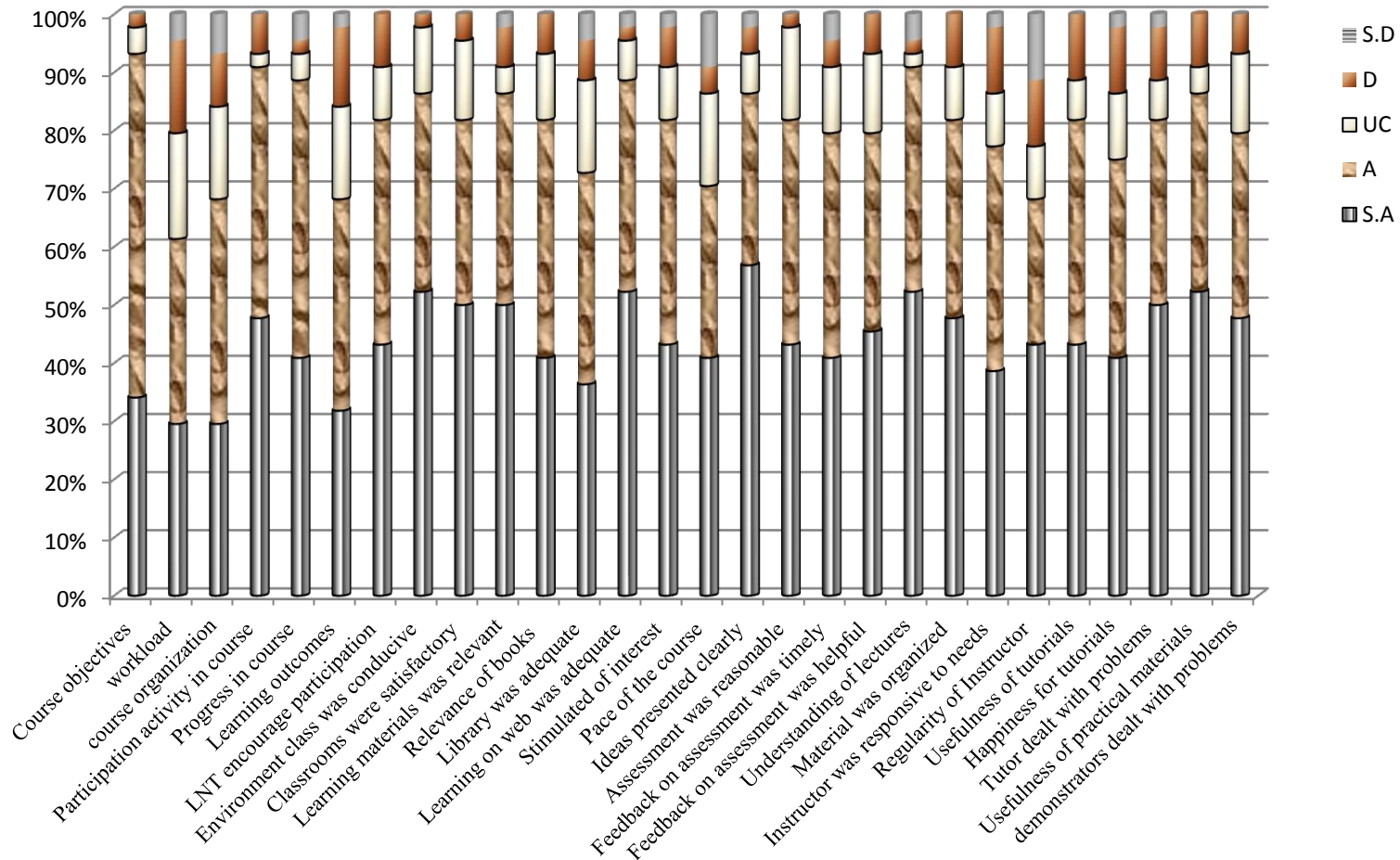
In this course 60% of students strongly agree with clearness of course objectives and 50% state that the course workload was manageable while others agree with that and 10% remained uncertain. However, overall 90% students have made progress in the course.



COURSE PHARM-201

In the course evaluation about 62% of students' state that the course objectives were clear and 60% say that the course load was manageable. More than 70% state that the class environment was conducive for study while only 1% students state that they have not made progress in the course.

Department of Bio Medical Sciences

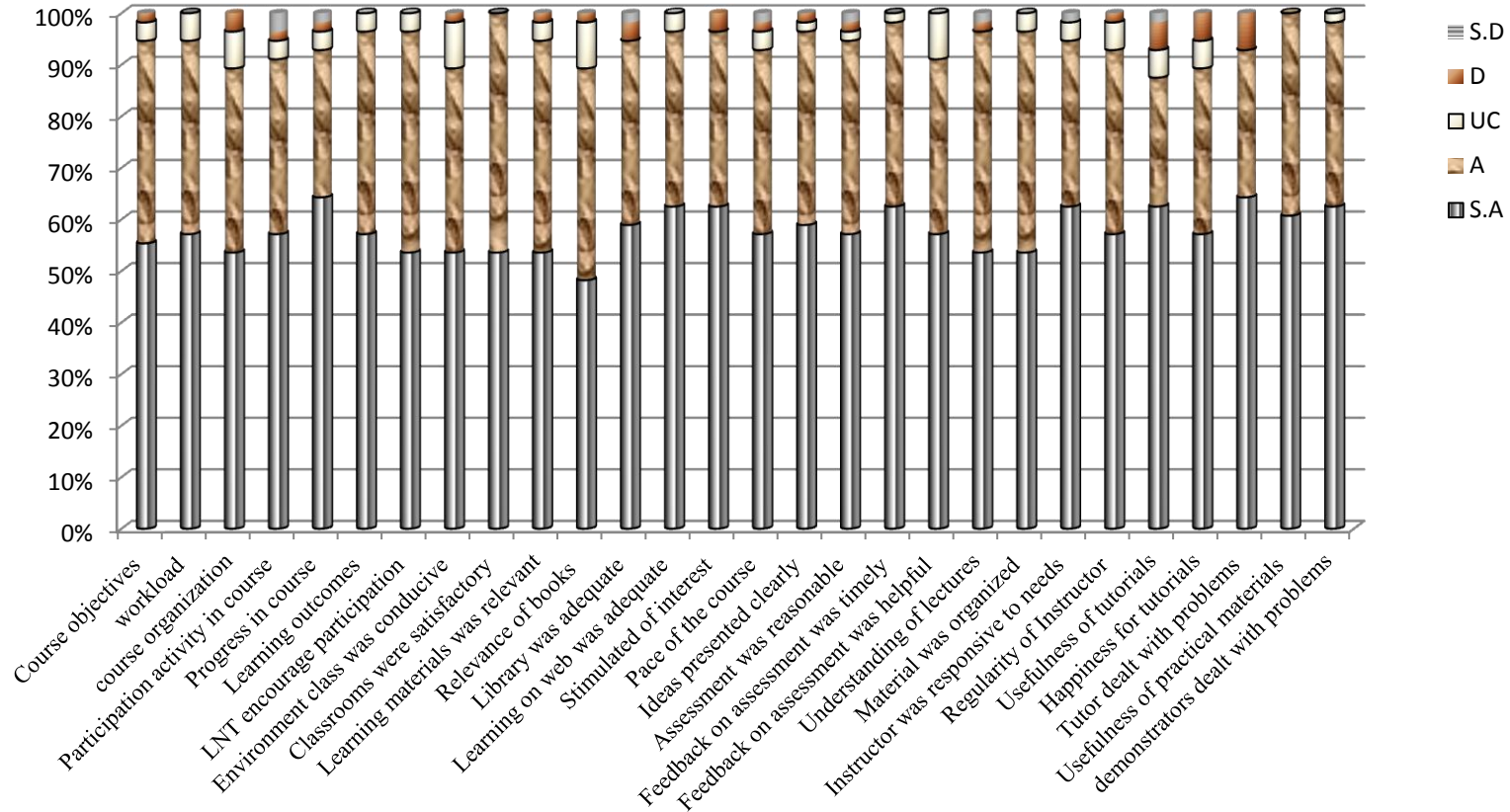


Course Evaluation PHRAM-301

About 32% students strongly agree with clearness of course objective while others agree and only 3% disagree. More than 50% state that the ideas presented were clear awhile others agree and about 90% of students strongly agree and agreed that they have made progress in the course.

Course Evaluation

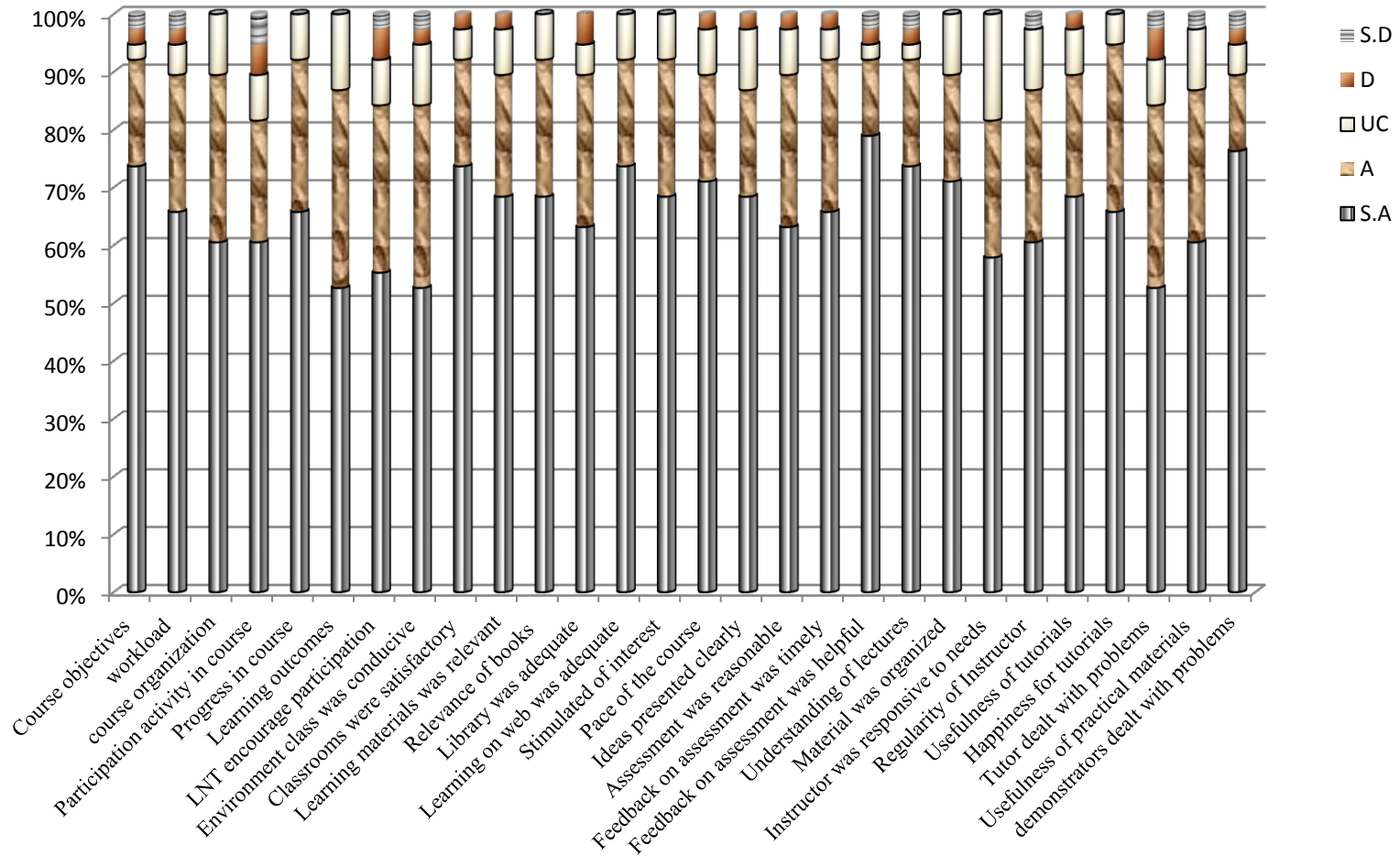
Department of Pathobiology



Course Evaluation PARA-202 (Teacher 1)

60% and 43% students strongly agreed and agreed respectively that the instructor stimulated the interest of students and 55% and 43% strongly agreed and agreed respectively that course workload was manageable.

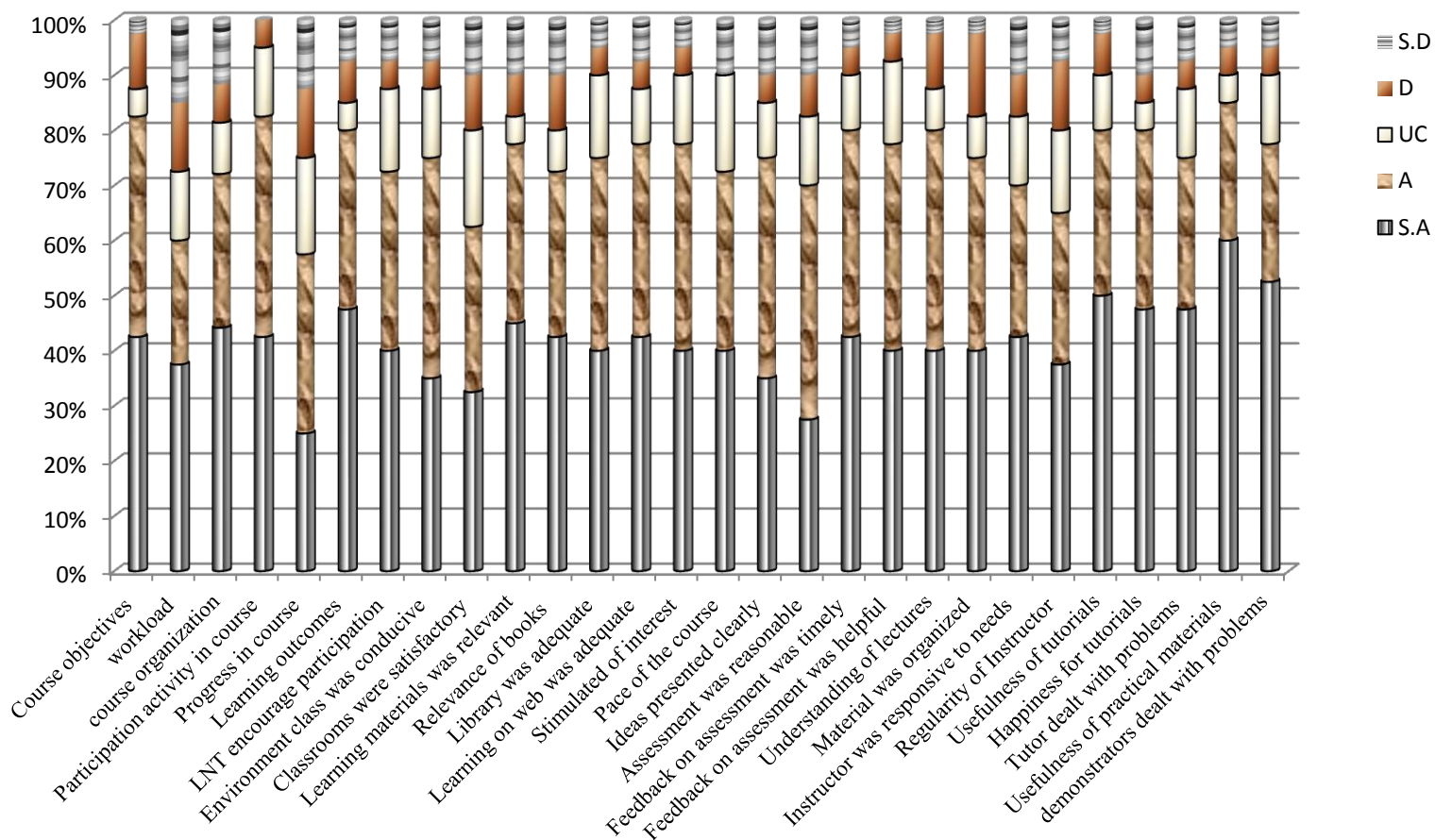
Department of Pathobiology



Course Evaluation PATHO-401

Overall the course evaluation is excellent as indicated that more than 50% of the students strongly agreed with all of the evaluation criteria.

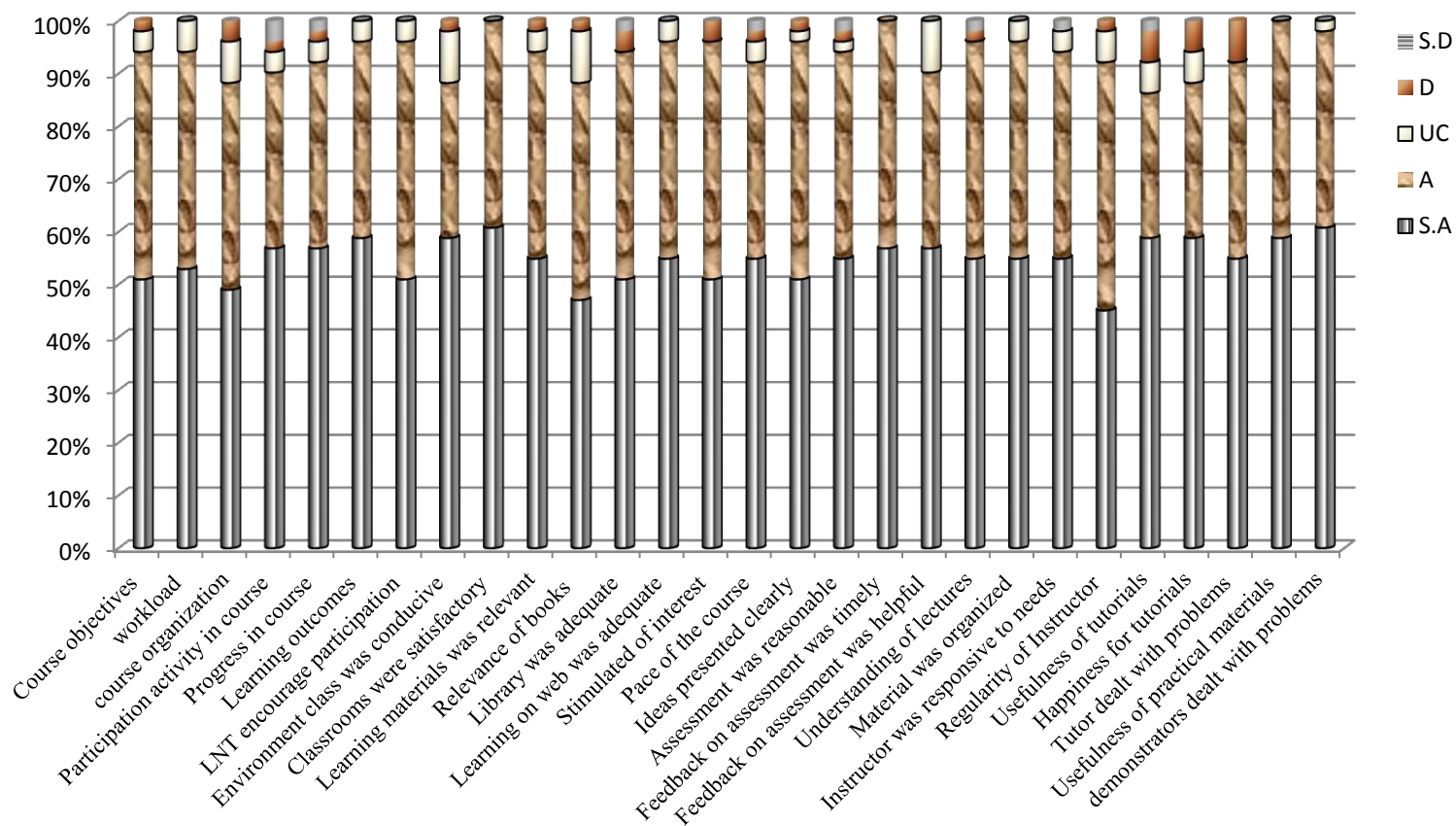
Department of Pathobiology



Course Evaluation PARA-201(Teacher-3)

30% and 31% students strongly agreed and agreed respectively that class room were satisfactory. About 36% of the students strongly agreed that the instructor was regular in the classes.

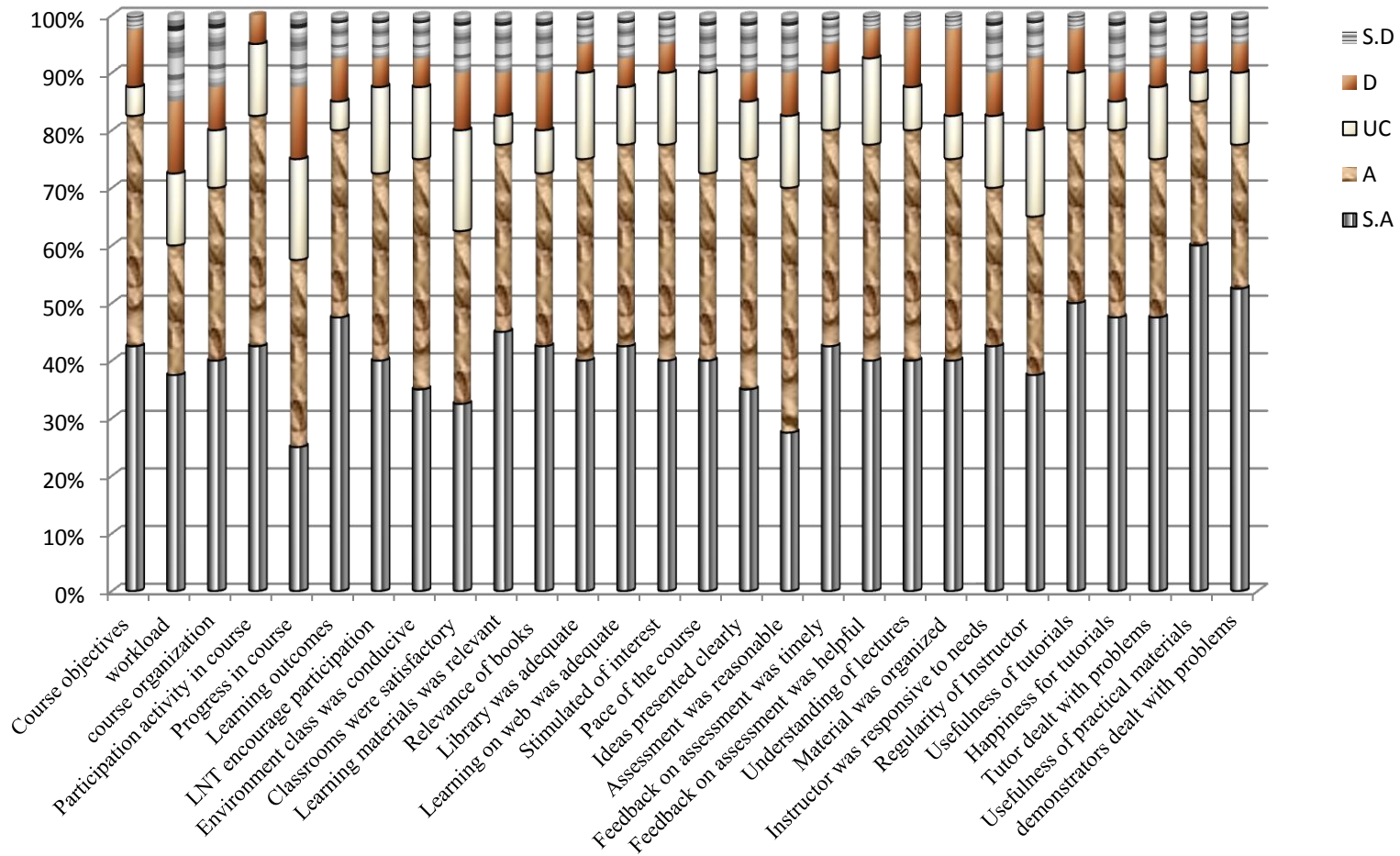
Department of Pathobiology



Course Evaluation PARA-301

More than 40% of the students strogly agreed with respect to all paramters of course evalaution. Overall upto 90% agreed about good performance in the course.

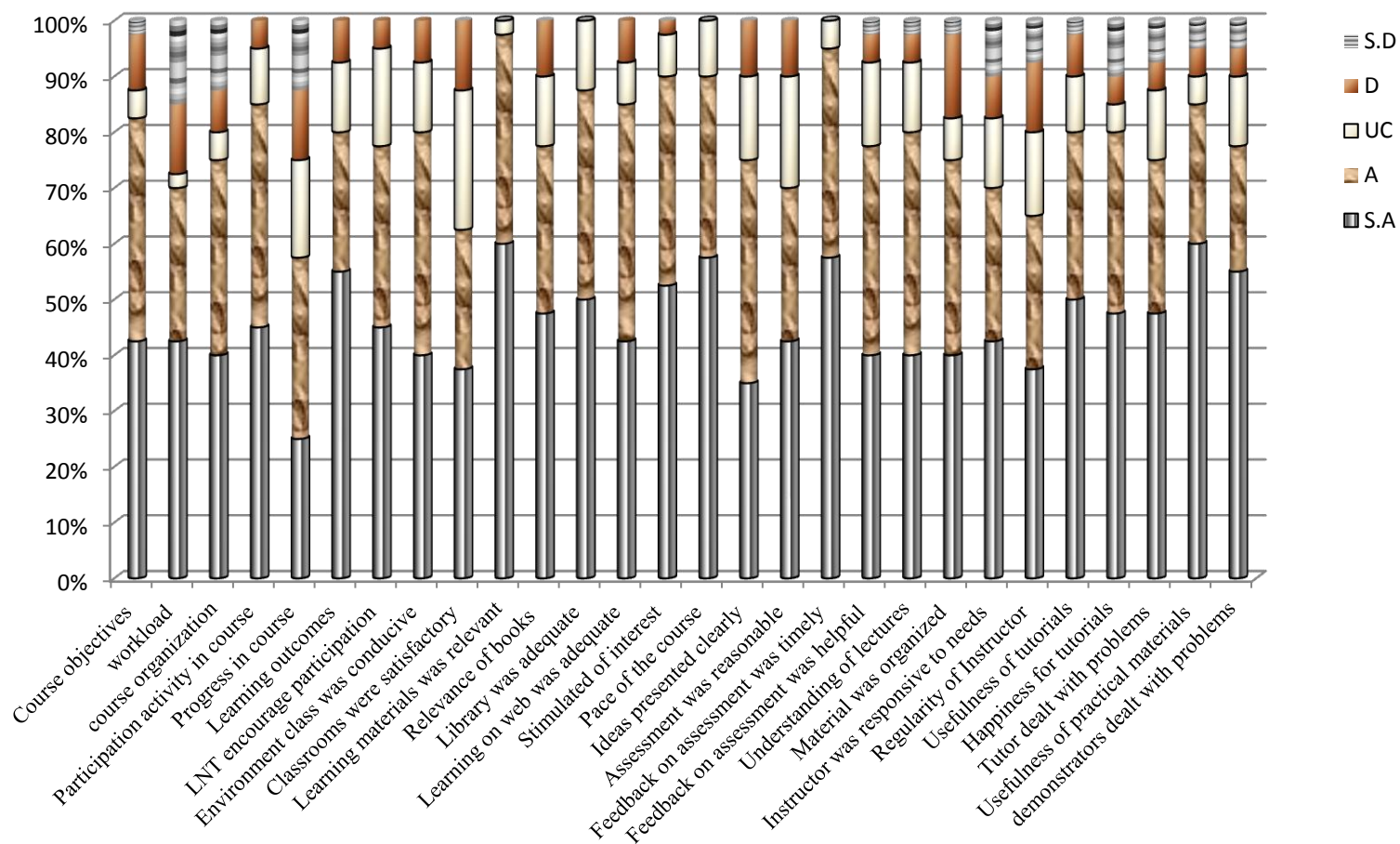
Department of Pathobiology



Course Evaluation PATHO-201 (Teacher -2)

43% and 35% students strongly agreed and agreed respectively that the material were relevant to the course and 39 % students strongly agreed for understanding of the lectures

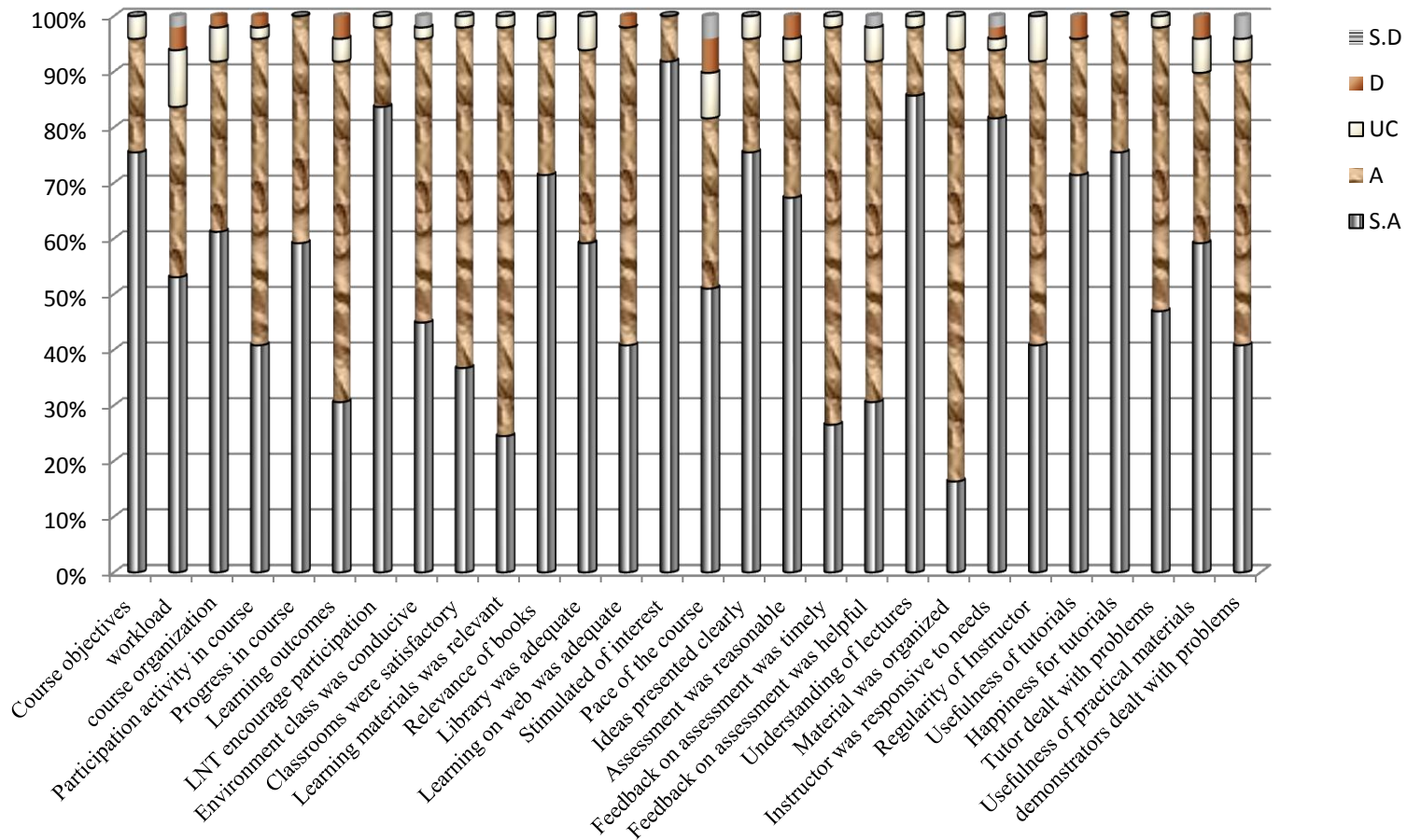
Department of Pathobiology



Evaluation PATHO-202 (Teacher-3)

39 %and 28% students strongly agreed and agreed respectively that material was organised and 35% students strongly agreed that the class rooms were satisfactory.

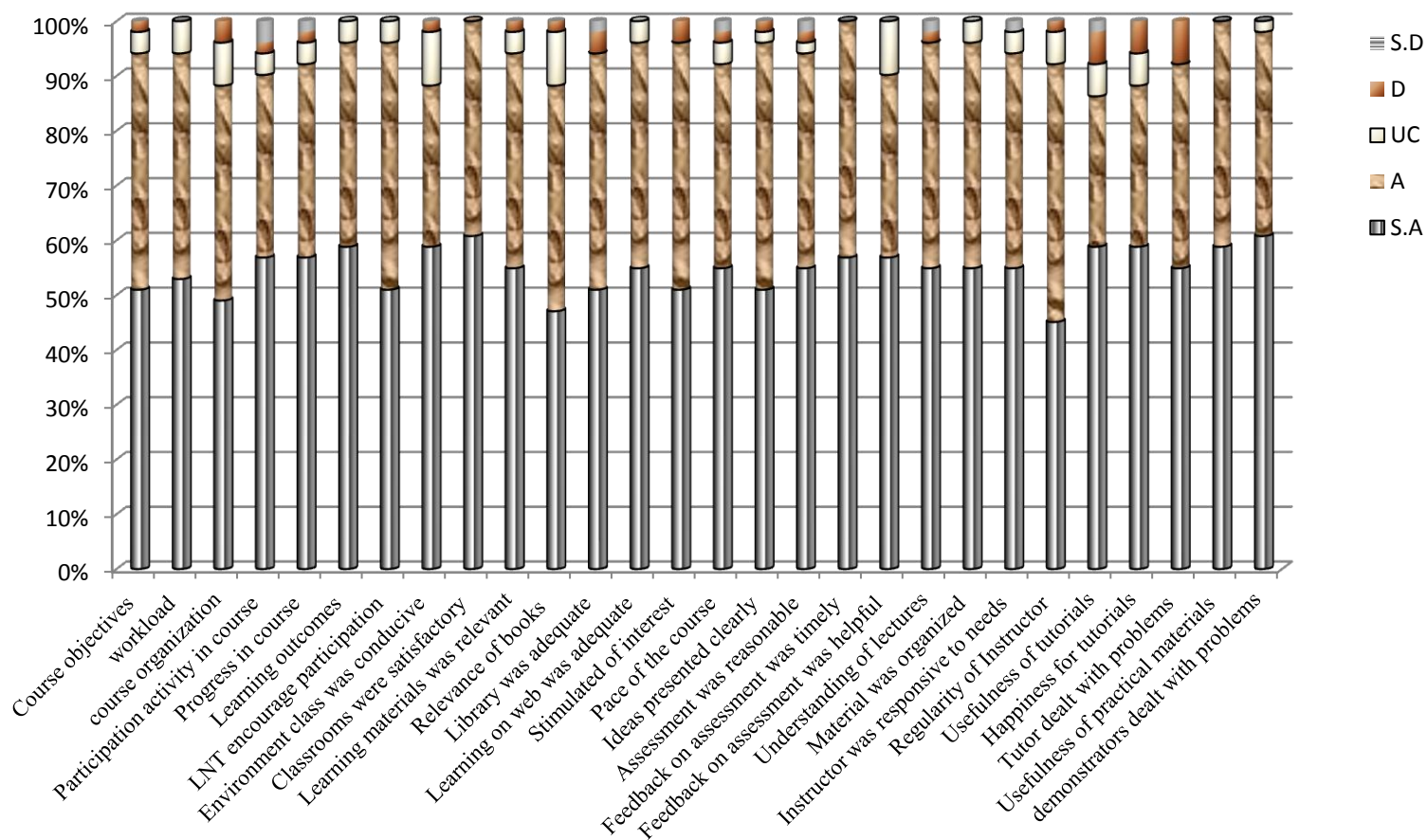
Department of Pathobiology



Course Evaluation PATHO-403 (Teacher-4)

90% and 10 % students strongly agreed and agreed respectively that the instructor stimulated the interest of students. Some of the students have reservation that learning material was neither relevant, nor organized

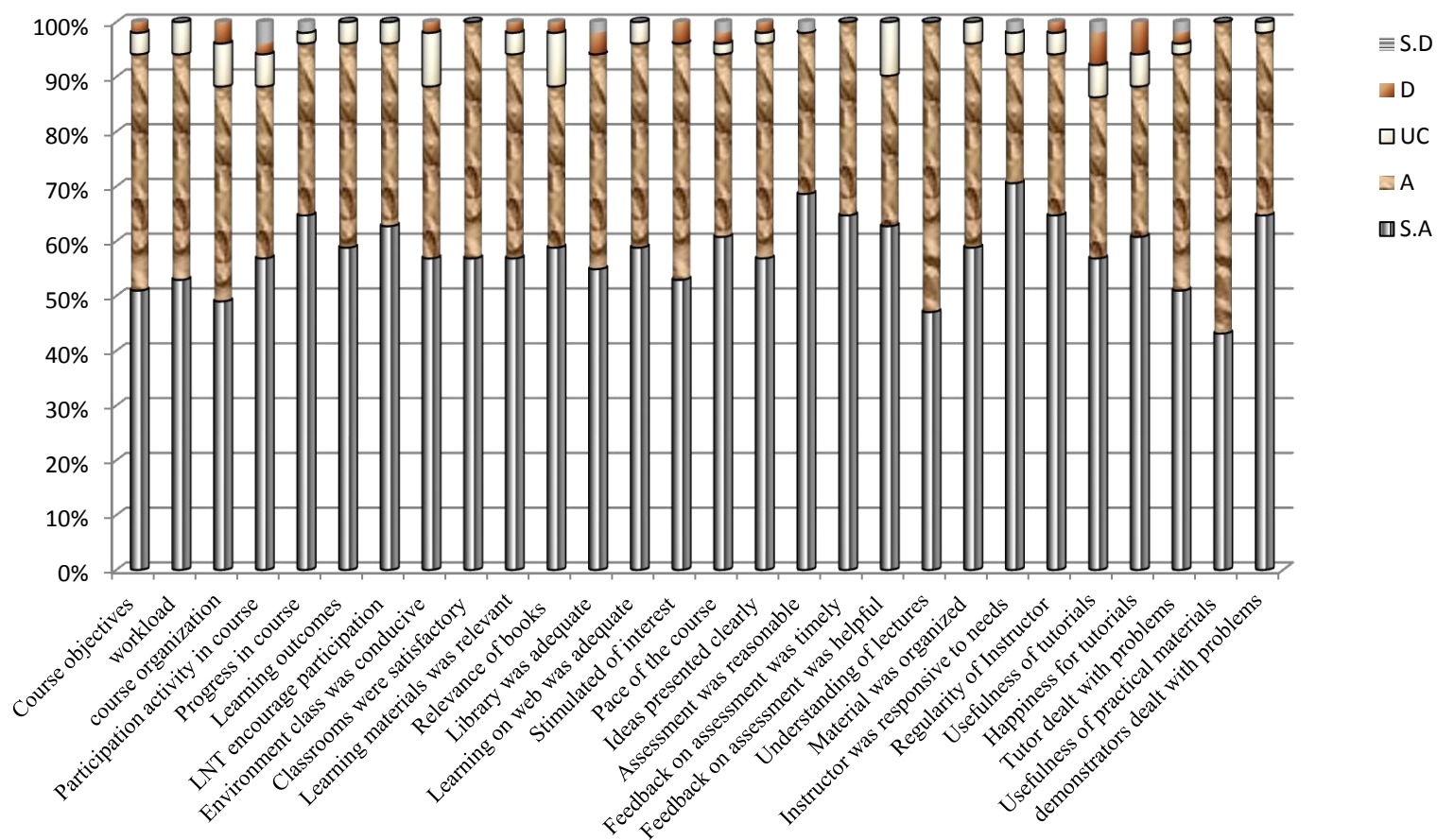
Department of Pathobiology



Course Evaluation MICRO-102 (Teacher-5)

59% and 38% students strongly agreed and agreed respectively that the instructor dealt with students problem and 59% students strongly agreed that the class room were satisfactory.

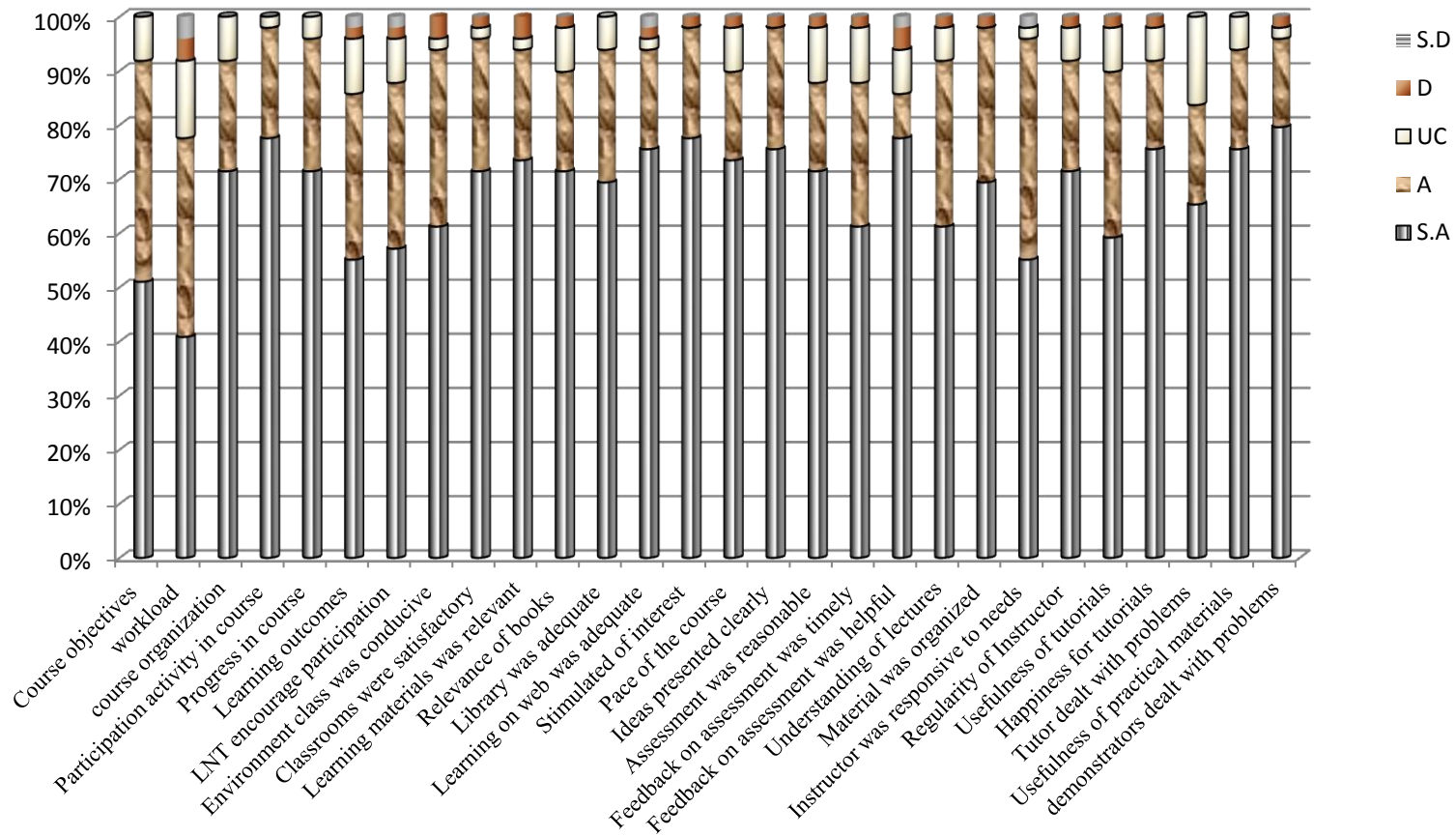
Department of Pathobiology



Course Evaluation MICRO-202(Teacher-4)

The overall environment in the class was conducive to learning. The course objectives were clear and course work was manageable. 58% students strongly agreed that the tutor dealt effectively with their problems.

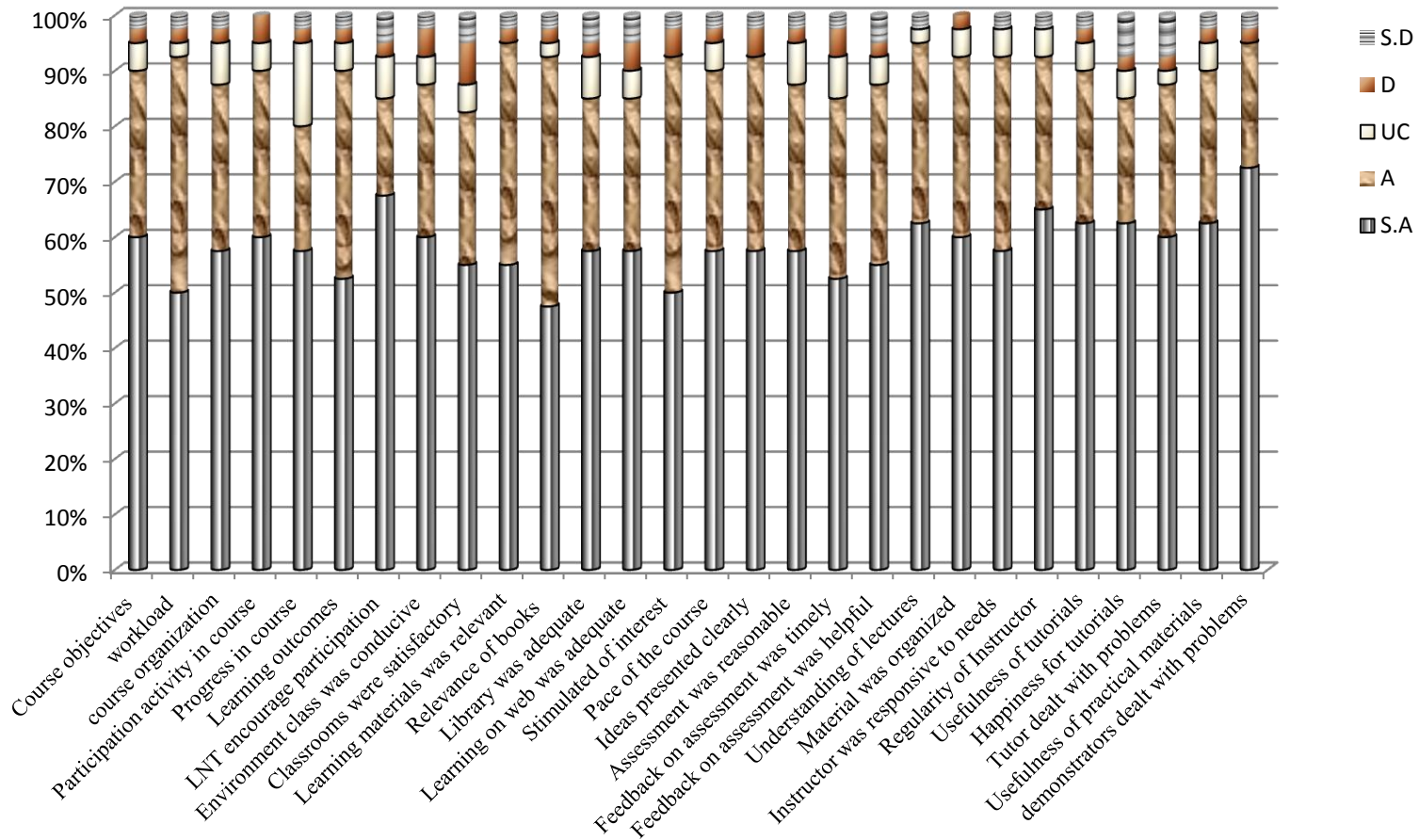
Department of Pathobiology



Course Evaluation MICRO-401 (Teacher-5)

The majority of students ranging from 40-50%% disclosed that the course objectives were clear, course work was manageable and the course was well organized. About 68% students strongly affirmed that they made progress

Department of Pathobiology

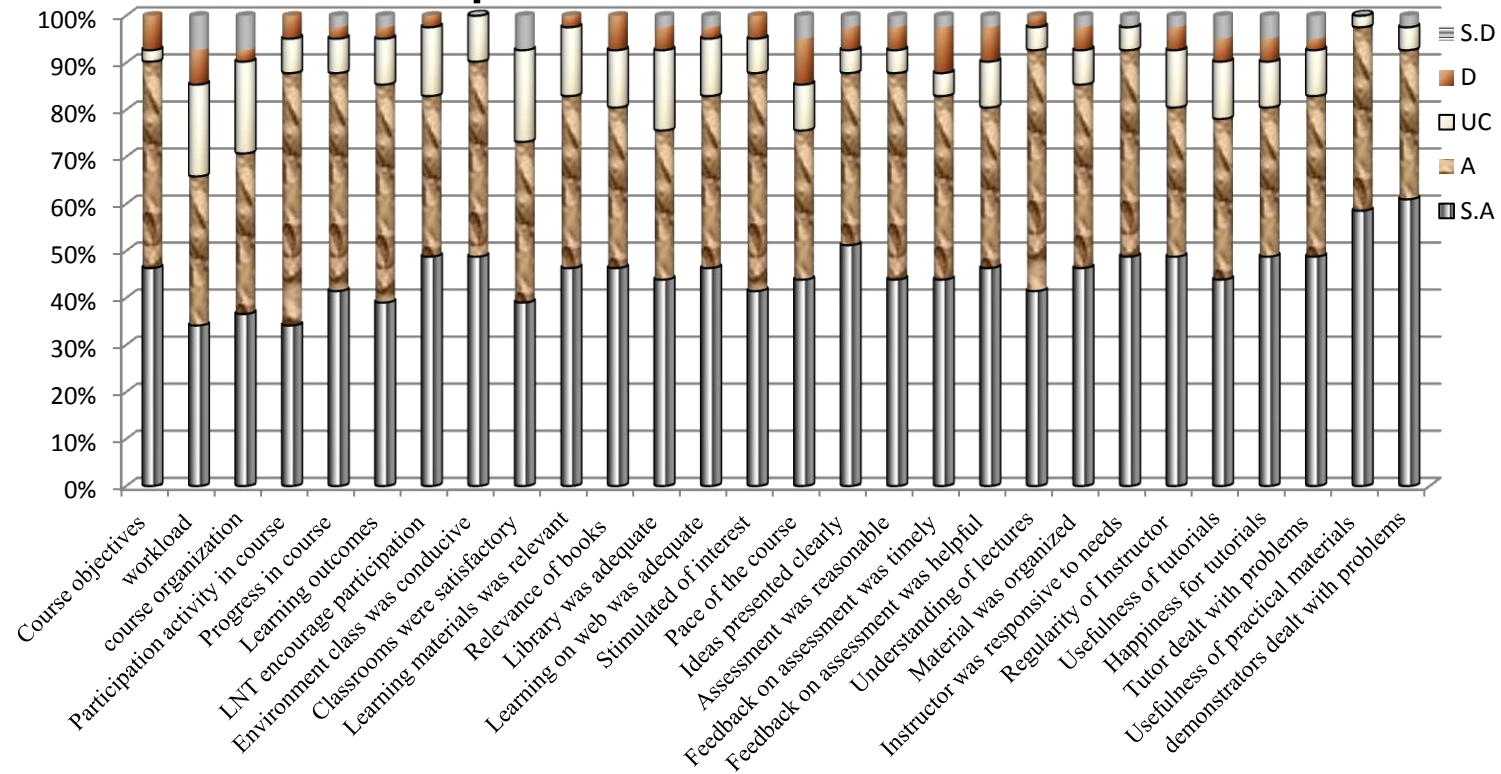


Course Evaluation MICRO-301 (Teacher-5)

About 59% students strongly agreed that the course objectives were clear. Some students mentioned that they are not satisfied with the condition of lecturer rooms.

Course Evaluation

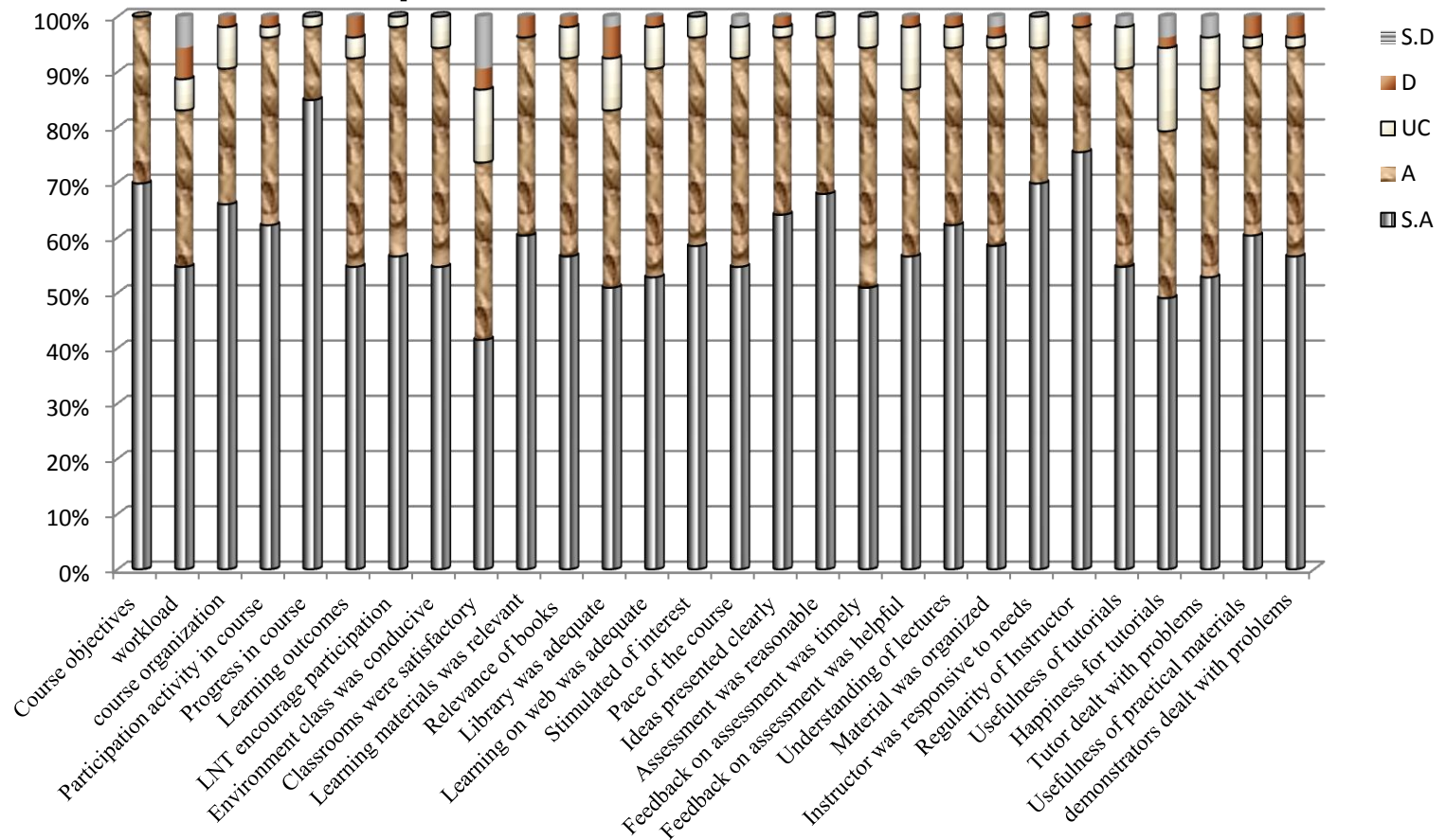
Department of Clinical Studies



Course OBGY 402 (Teacher 1)

42 and 42% students strongly agreed and agreed respectively that participation in course activity and 60% and 38% strongly agreed and agreed respectively that teacher regular.

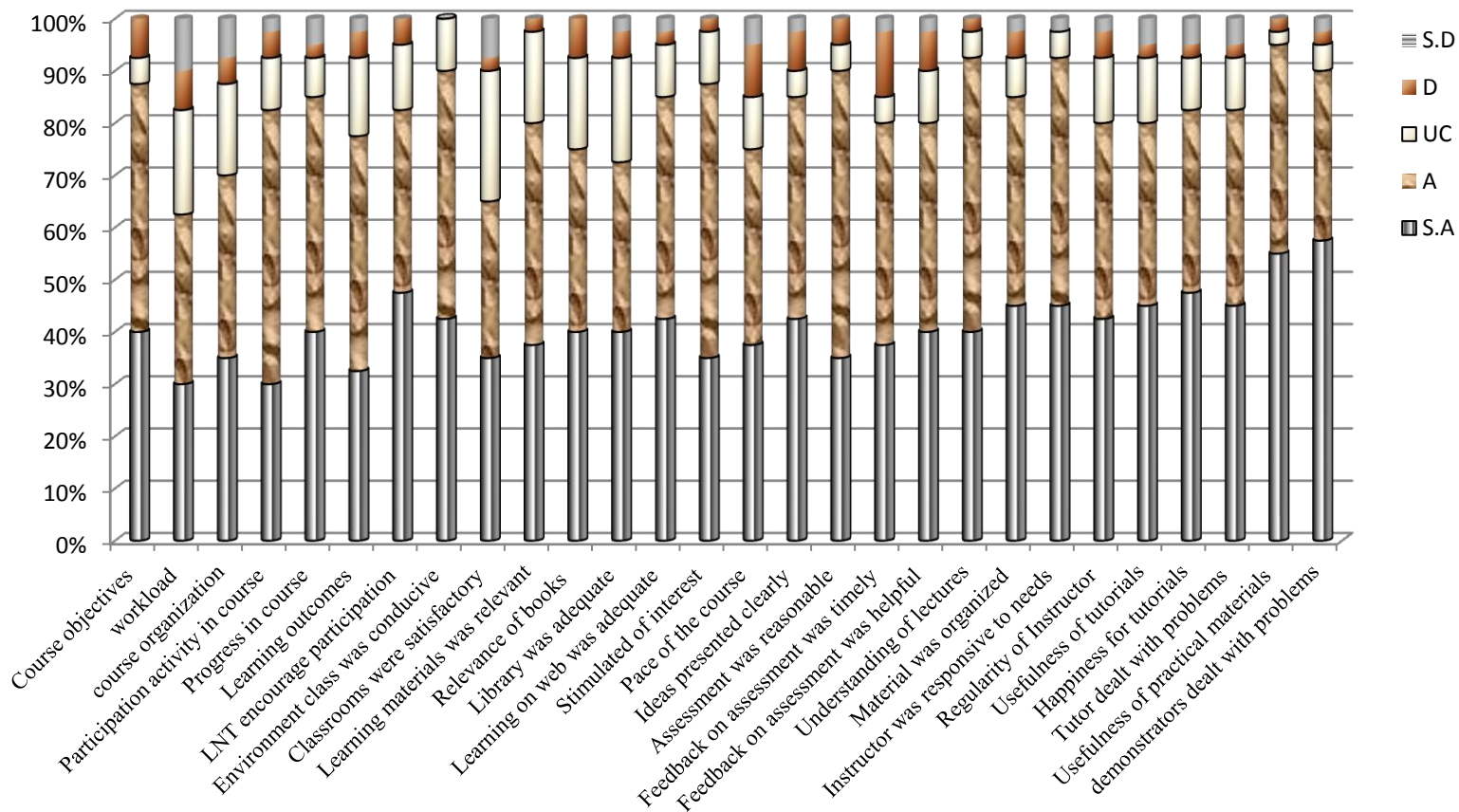
Department of Clinical Studies



Course MED 302 (Teacher 2)

80% and 14% students strongly agreed and agreed respectively progress in course and 65% and 70% strongly agreed and agreed respectively that agreed that course work were manageable.

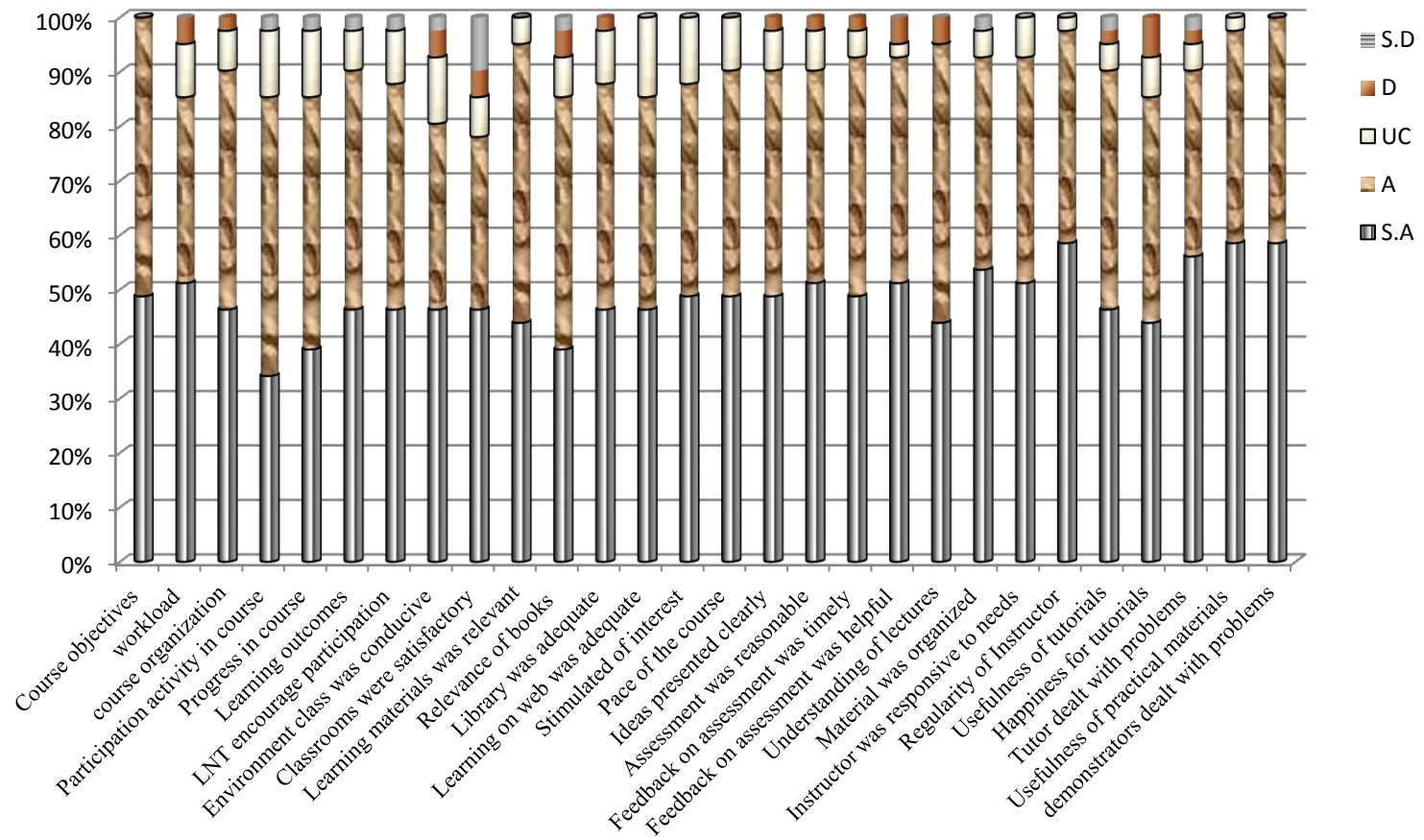
Department of Clinical Studies



Course SURG 402 (Teacher 3)

50% and 40% students strongly agreed and agreed respectively and course practical material is usefulness and 37% and 42% strongly agreed and agreed respectively that agreed that course progress.

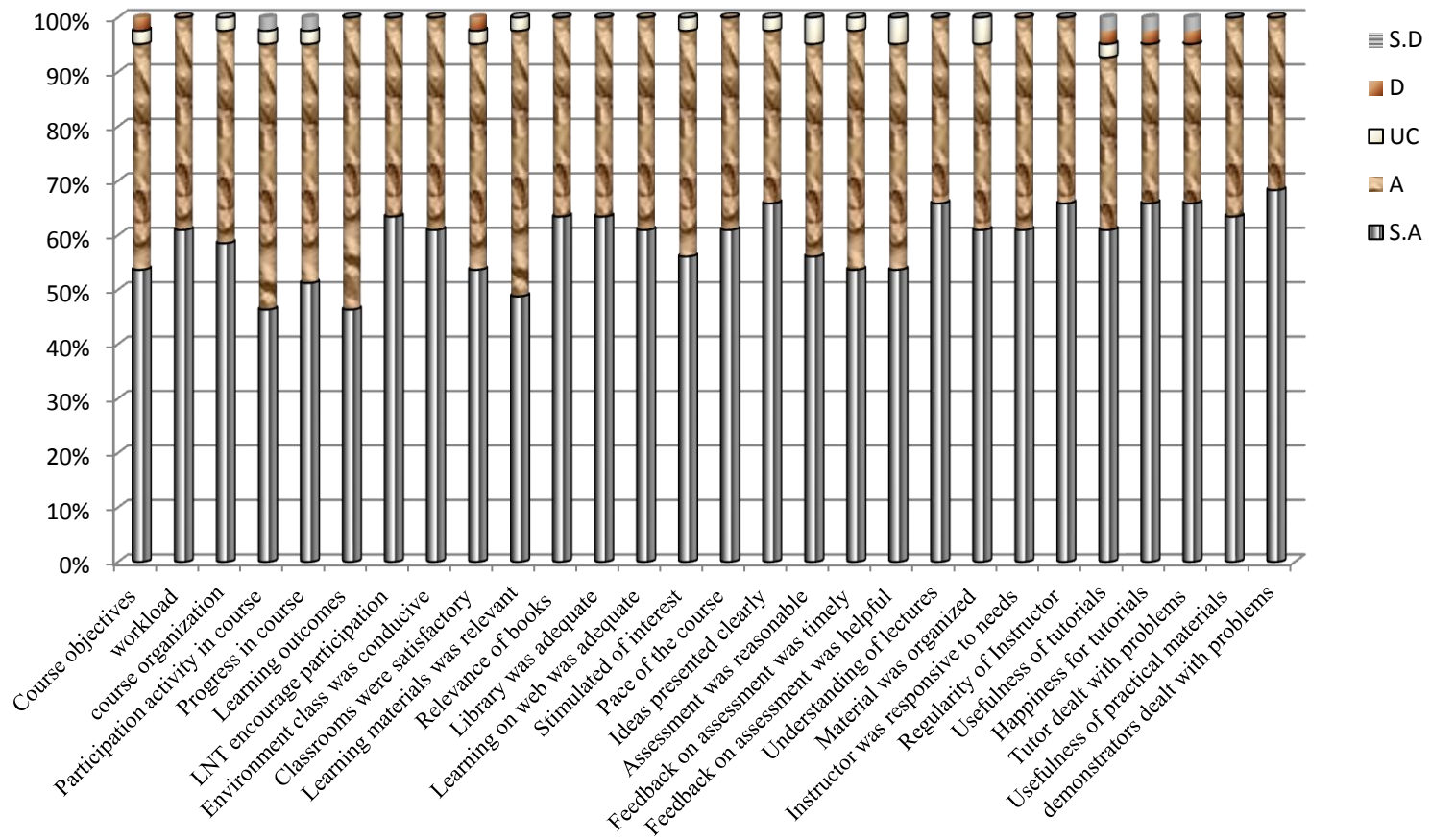
Department of Clinical Studies



Course MED-402 (Teacher 4)

58% and 38% students strongly agreed and agreed respectively that instructor show regularity and 50% and 40% strongly agreed and agreed respectively that agreed that course material was organized.

Department of Clinical Studies



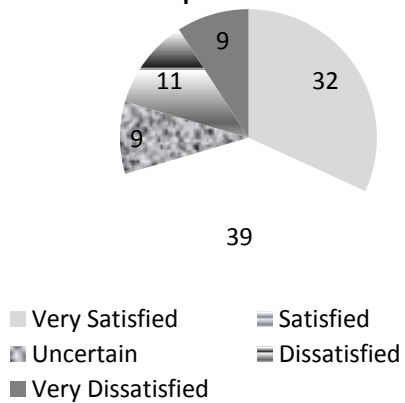
Course OBGY 404 (Teacher 5)

65% and 35% students strongly agreed and agreed respectively with class demonstration and 58% and 36% strongly agreed and agreed respectively that agreed that course material is useful.

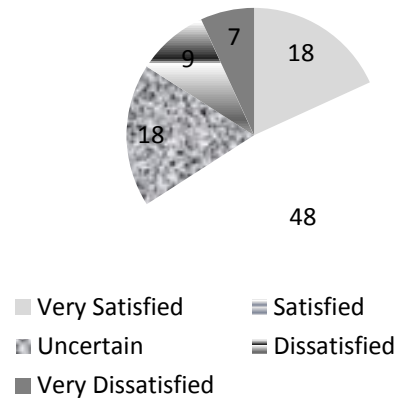
Survey of Graduating Students, Alumni Survey and Employer Survey

Since the first batch of Doctor of Veterinary Medicine graduated in July 2011, therefore, only one survey of graduating students is possible. The results of graduating students are summarized and given in subsequent figures. The employer and alumni survey is not possible at present as majority of the students enrolled in post-graduate programs.

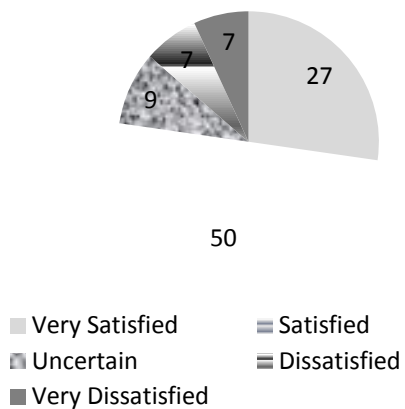
1. The work in the program is too heavy and induces a lot of pressure



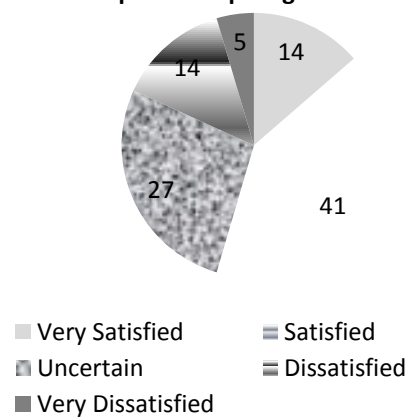
2. The program is effective in enhancing team-working abilities



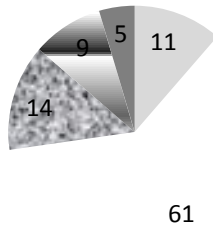
3. The program administration is effective in supporting learning



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

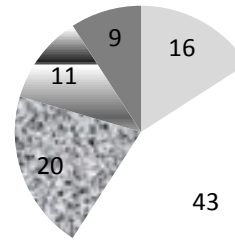


5.The program is effective in developing independent thinking



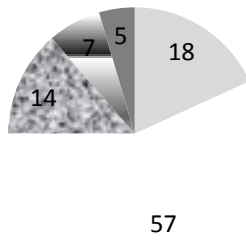
Very Satisfied Satisfied
 Uncertain Dissatisfied
 Very Dissatisfied

6.The program is effective in developing written communication skills



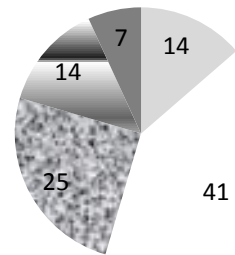
Very Satisfied Satisfied
 Uncertain Dissatisfied
 Very Dissatisfied

7.The program is effective in developing planning abilities



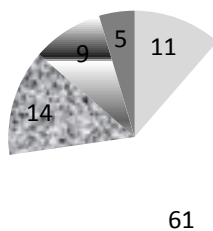
Very Satisfied Satisfied
 Uncertain Dissatisfied
 Very Dissatisfied

8.The objectives of the program have been fully achieved



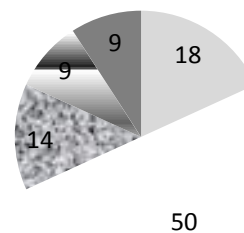
Very Satisfied Satisfied
 Uncertain Dissatisfied
 Very Dissatisfied

9.Whether the contents of curriculum are advanced and meet program objectives



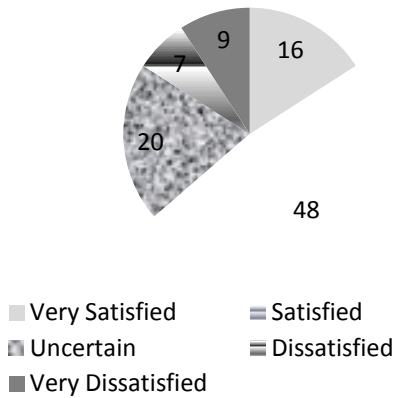
Very Satisfied Satisfied
 Uncertain Dissatisfied
 Very Dissatisfied

10.faculty was able to meet the program objectives

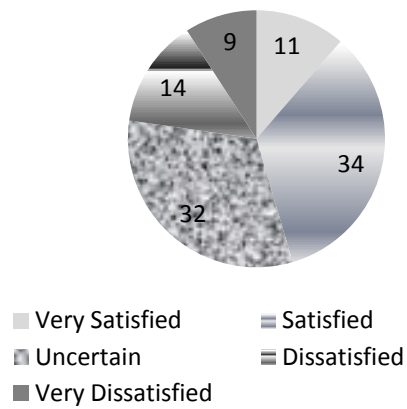


Very Satisfied Satisfied
 Uncertain Dissatisfied
 Very Dissatisfied

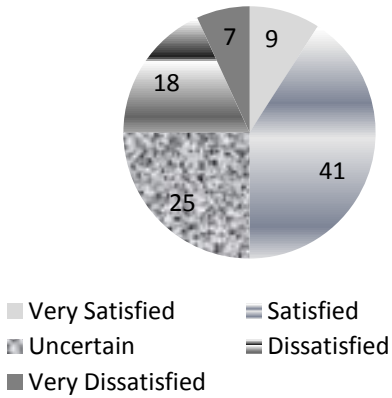
11.Environment was conducive for lerning



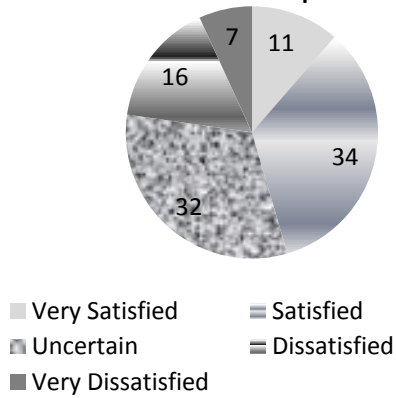
12.Whether the infrastructure of the depatment was good



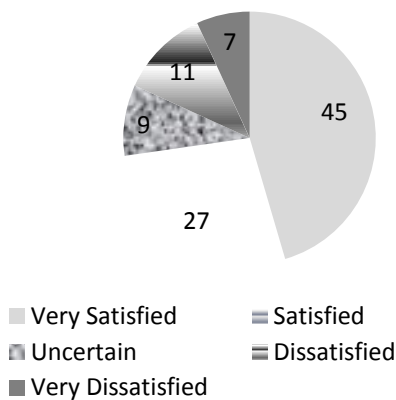
13.Whether the program was comprised of Co-curricular and extra-curricular activities



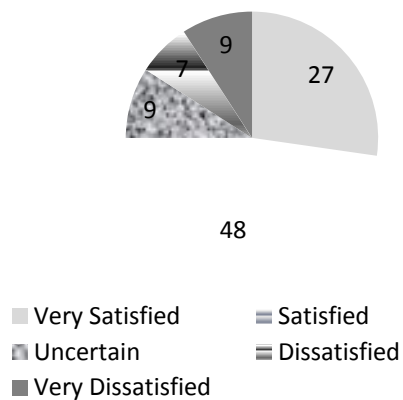
14. Whether scholarships/grants were available to students in case of hardship



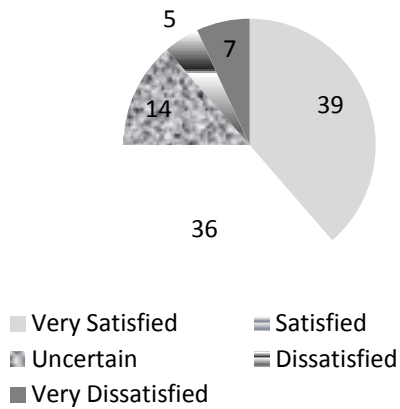
15.1. Intern. Experience: Ability to work In teams



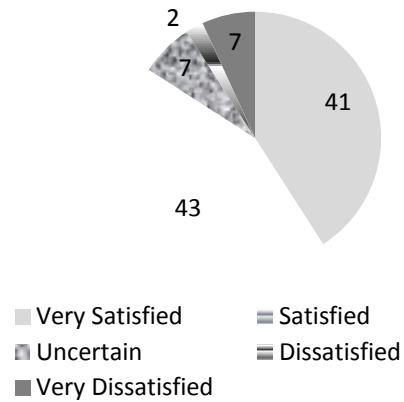
15.2. Intern. Experience: Independent thinking



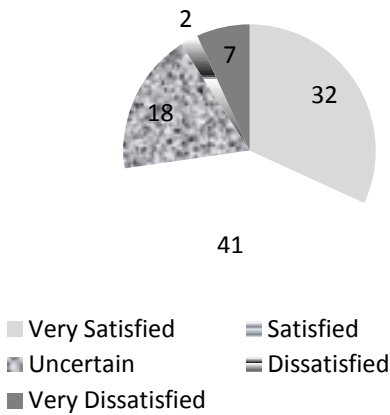
15.3. Intern. Experience: Appreciation of ethical values



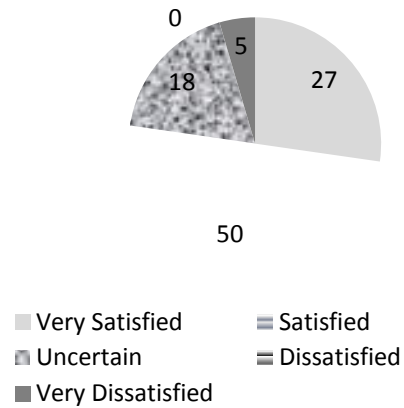
15.4. Intern. Experience: Professional development



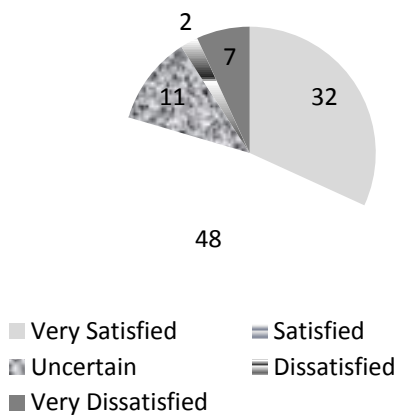
15.5. Intern. Experience: Times management skill



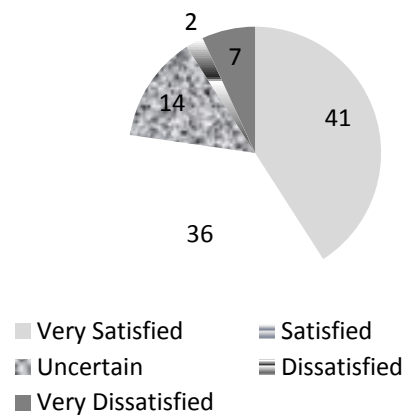
15.6. Intern. Experience: Judgment



15.7. Intern. Experience: Discipline



15.8. Intern. Experience: The link between theory and practice



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

Strength of the Program

The main strength of the program is the availability of all expertise in animal production and health with full acquaintance of their respective subjects, having vast knowledge of animal production systems. Out of the twenty eight faculty members, fifteen of them are holding Ph.D. degree from national and international universities. The teaching faculty at different departments is expert in their respective fields. Their work has been published in national and international journals. They have also executed research projects independently. The faculty also trained manpower through NRSP and NAVTECK short courses. The Faculty of Veterinary and Animal Sciences is in developing phase. At present, laboratory equipments most essentially required are available with the faculty. In addition to this appreciable quantities of chemicals and glassware have also been procured for laboratory work.

Weaknesses Identified in the Program

Advanced teaching and research is being handicapped due to lack of some important laboratory equipment, physical infrastructure including spacious labs, class rooms and animal farm facilities. There is also a need for short term foreign training to young faculty members. The students' survey indicates that there is a lot of room for improving communication skills and focusing on the practical aspects of all courses offered in the faculty. This is the first assessment report and the FV&AS is looking forward to see the implementation of the measures.

Major future development plans:

- Post-graduate degree program in all disciplines of the faculty.
- To start problem oriented research on specific and serious problems in the animal production and health.
- To provide the consultancy services to the livestock and poultry farmers.
- To establish different labs for the diagnosis of animal diseases.

FACULTY COURSE REVIEW REPORT

Faculty course review report was filled by each course teacher at the end of course. The results are summarized in following table.

Course number	Curriculum (Comments)	Assessment (Comments)	Enhancement (Comments)	Outline Changes
AN-102	Needs to increase working place in Lab	Satisfied	Not proposed earlier	No
AN-201	Contents are fine	Satisfied	Not proposed	No
AN-202	Course is well designed	NA	Building will resolve issues	NIL
AN-301	Course is well designed	Ok	Computer lab facility requiued	NIL
ABG-102	Contents need revision	Assessment is effective	NA	Readjustment needed with ABG202
ABG-201	Fine	Assessment is effective	Computer lab facility requiued	-
ABG-202	Contents need revision	Objectives attained	NA	Readjustment needed with ABG102
LM-101, LM-402	Contents are good	Good	Animal Farm facility required	Nil
LM-301	Minor revision is needed	Lab facility needed	Not proposed	No
LM-302	OK	OK	Not proposed	Satisfied
LM-304	More farm Visit required	Ok	Not proposed	Satisfied
LM-401	Ok	Effective	NA	NA
PS-202	Ok	Satisfied	On campus Poultry Farm is requied	No
PS-302	Ok	Ok	On campus Poultry Farm is requied	No
PS-501	Ok	Satisfied	On campus Poultry Farm is requied	No
ANAT-101	Well designed	Good	Present method is good	No
ANAT-102	No change	Satisfied	Fine	No
ANAT-103	Well designed	Good	Present method is good	No
ANAT-104	No change	Satisfied	Fine	No
PHYS-101, 102	Well designed	Good	Present method is good	No
PHYS-201	Changes are needed	Good	Present method is good	No
PHRAM-202, 301, 302	Minor changes are needed in all courses	Ok	Ok	No change
MED-302, 304	No change	Satisfied	Fine	No
MED-401, 402	No change	Satisfied	Fine	No
MED-403	Well designed	Good	Present method is good	No

MED-404	Minor revision is needed	Ok	Not proposed	No
MED-501, 503, 505	Contents are well	More time allocation in time table required	-	-
SURG-302	No	-	Ok	Ok
SURG-401, 403	Ok	Effective	Not proposed	No
SURG-402	Good	Effective	Not proposed	NA
SURG-404, 501	Contents are well	More time allocation in time table required	Ok	Ok
OBGY-202	Slaughter house visit must be included	Ok	Fine	-
OBGY-401	Slaughter house visit must be included	Ok	Fine	-
OBGY-403	Fine	Satisfied	Ok	-
OBGY-402	Good	Satisfied	-	No
OBGY-404	Slaughter house visit must be included	Satisfied	-	No
OBGY-501	Slaughter house visit must be included	Need some changes	Ok	No

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

- The Faculty of Veterinary and Animal Sciences offered courses for DVM degree program.

The quantitative assessment of the faculty is summarized in following table.

Quantitative Assessment of the Faculty

2010				2011				2012			
Student enrolled	Student faculty ratio	Average graduating point	Attrition rate	Student enrolled	Student faculty ratio	Average graduating point	Attrition rate	Student enrolled	Student faculty ratio	Average graduating point	Attrition rate
250	13:1	-	-	250	12.5:1	87.5%	12.5%	300	12:1	88.9%	11.1%

Present performance measures for research activities			
Faculty	Journal Publications (National & International)	Conference Publications (Proceedings Abstract)	Projects
Prof. Dr.Arshad Iqbal	7	7	1 Submitted as Co PI
Prof. Dr. Nemat Ullah	12	2	In progress
Dr. Tanveer Ahmad	4	3	1 (Completed as Co PI)
Dr. Muhammad Arfan Yousaf	10	2	-

Dr. Mohamamd Farooq Iqbal	4	0	2 (Completed) 1 (In progress)
Dr. Nasir Mukhtar	10	-	1 (Submitted)
Dr. Mansoor Abdullah	8	-	1 (Submitted)
Dr. M. Moaen ud Din	1	2	3 (Submitted)
Dr. Muhammad Yaqoob	4	0	1(submitted as PI)
Dr. Muhammad Fiaz	3	1	1 (In progress)
Dr. Imtiaz Ahmad Khan	5	-	
Dr. Murtaz ul Hassan	4	-	
Dr. Riaz Hussain	5	2	2(submitted as a PI) 2(submitted as a Co PI)
Dr. Arif Zafar	3	2	-
Mr. Saif-Ur-Rehman	1	-	-
Mr. Zaib-Ur-Rehman	1	-	-
Mr. Sajid umer	1	-	-
Kashif Ishaq	2	1	1 Submitted
Hafiz Muhamamd Waheed	1	0	-
Mr. Zeeshan Akbar	-	-	-
Mr. Mujeeb-Ur-Rehman	-	-	-
Mr. Asif Riaz	2	-	-
Mr. Fahad Raza	2	-	-
Ms. Sumaira	-	-	-

Present performance measures for community services		
Short course	Seminar	Workshops
5	1	-

Criterion 2: Curriculum Design and Organization

Criterion 2: Curriculum Design and Organization

Degree title: Doctor of Veterinary Medicine (DVM)

All the courses for degree program were developed by a curriculum committee of Pakistan Veterinary and Medical Council (PVMC). The committee consists of experts and learned professors, subject-matter specialists from other universities and research organization from Pakistan. Curriculum for the DVM is revised/updated through different bodies, when needed. At department level, Board of Studies, which is comprised of senior faculty members, is responsible for updating the curriculum. This body is authorised to formulate syllabus and course contents. The Chairman of the Department in this regard acts as a Convener. The courses are then sent to the Board of Faculty for approval. The Dean of the Faculty, being Convener of this body, conduct meeting. As per university rules, courses after the approval from the Faculty Board, are placed before the University Academic Council for final approval.

Criteria for DVM Admission

F.Sc. (Pre-medical) with 45% marks.

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. The semester is of 16-18 weeks.

Degree Plan

The Doctor of Veterinary Medicine (DVM) degree programs is organized by the five departments of FV&AS.

Minimum Academic Requirements

A person must holding intermediate science certificate (F.Sc.-Pre-Medical) or an equivalent certificate from any recognized institute with at least second division or overall 45 % marks. The candidates domiciled in the barani areas of Punjab are eligible for admission on district quota basis (fifty seats). However, candidates from all over the Punjab province are also eligible for 15 seats on open merit basis. The entire admission for DVM degree program is strictly based on the marks obtained in F.Sc. (Pre-medical).

Degree Requirements:

As a whole, a student has to study 213 credit hours. The final semester includes internship of 15 credit hours. Students for internship are placed in research institutes, animal farms, feed mills etc., to learn techniques practically. Degree is awarded after completing the required number of credit hours (courses) followed by internship report and its presentation. Minimum Grade Point Average for obtaining the degree is 2.50. To remain on the roll of the university a student shall be required to maintain the following minimum GPA/CGPA in each semester

Semester	CGPA
First	0.75
Second	1.00
Third	1.25
Fourth	1.50
Fifth	1.75
Sixth	2.00
Seven	2.00
Eight	2.25
Nine	2.25
Tenth	2.50

Examination & Weightage:**Theory**

In theory paper, student's evaluation is done by mid-term examination, assignments/quizzes and final examination. Both the mid-term and final examinations are compulsory. A student, who miss the mid-term examination, is not allowed a make-up examination and is awarded zero marks in that examination. In case a student does not appear in the final examination of a course, he shall be deemed to have failed in that course. In theory, weightage to each component of examination is as prescribed here under:

Mid Examination 30%, Assignments 10%, Final Examination 60%

Practical

For practical examination (if applicable) 100% weightage is given to practical final examination

Eligibility for Examination:

A student is eligible to appear in the examination provided he/she has attended at least 75% classes in theory and practical, separately. The minimum pass marks for each course are 40% for undergraduate.

Scheme of studies and Course contents of DVM courses

The following is the list of courses offered to DVM students.

1. Courses offered to DVM students**Animal Nutrition**

Course No.	Course Title	Semester	Credit hours
AN-102	Principles of Animal Nutrition	2 nd	3(2-2)
AN-201	Animal Feeds and Fodders	3 rd	3(2-2)
AN-202	Nutrient Requirements of Livestock and Poultry	4 th	3(2-2)
AN-301	Feed Evaluation, Formulation and Processing Technology	5 th	3(2-2)

Animal Breeding and Genetics

ABG-102	Introduction to Animal breeding and Genetics	1 st	4(3-2)
ABG-201	Principles of Genetics and Population Genetics	3 rd	4(3-2)
ABG-202	Animal Breeding Plans and Policies	4 th	3(2-2)

Livestock Management

LM-101	Livestock Housing and Management	1 st	3(2-2)
LM-301	Cattle and Buffalo Production	5 th	3(2-2)
LM-302	Sheep and Goat Production	6 th	3(2-2)
LM-304	Dairy Products & Processing Technology	6 th	3(2-2)
LM-401	Equine and Camel Production	7 th	2(1-2)
LM-402	Livestock Farms Operations	8 th	5(1-8)

Poultry Science

PS-202	Poultry Housing and Management	4 th	2(1-2)
PS-302	Avian Production and Management	6 th	3(2-2)
PS-501	Poultry Farms Operations	9 th	5(1-8)

Veterinary Anatomy

ANAT-101	General and Systemic Anatomy	1 st	4(1-6)
ANAT-102	Comparative Anatomy	2 nd	4(1-6)

Veterinary Histology

ANAT-103	General Veterinary Histology & Embryology	1 st	3(1-4)
ANAT-104	Systemic Veterinary Histology	2 nd	3(1-4)

Veterinary Physiology

PHYS-101	Cardiovascular, Respiratory and Renal Physiology	1 st	3(2-2)
PHYS-102	Physiology of Digestion & Lactation	2 nd	3(2-2)
PHYS-201	Endocrinology and Neuromuscular Physiology	3 rd	3(1-4)

Veterinary Pharmacology

PHARM-202	General Veterinary Pharmacology and Pharmaceutics	3 rd	3(2-2)
PHARM-301	Systemic Veterinary Pharmacology and Therapeutics	5 th	3(2-2)
PHARM-302	Veterinary Toxicology & Chemotherapy	6 th	2(1-2)

Veterinary Medicine

MED-302	General Medicine	6th	3 (2-2)
MED-304	Pet, Lab and Zoo Animals Welfare and Management	6th	3 (2-2)
MED-401	Systemic Medicine-I	7th	4 (4-0)
MED-403	Medicine Clinic-I	7th	4 (4-0)
MED-402	Systematic Medicine-II	8th	3 (3-0)
MED-404	Medicine Clinic-II	8th	3 (0-6)
MED-501	Veterinary Epidemiology and Public Health	9th	4 (2-4)
MED-503	Technical Report Writing & Presentation	9th	1 (1-0)
MED-505	Medicine Clinic-III	9th	3 (0-6)

Veterinary Surgery and Radiology

SURG-302	General Surgery	6th	3 (2-2)
SURG-401	Regional Surgery	7th	3 (1-4)
SURG-403	Surgery Clinic-I	7th	2 (0-4)
SURG-402	Radiology, Shoeing and Soundness	8th	2 (1-2)
SURG-404	Surgery Clinic-II	8th	3 (0-6)
SURG-501	Surgery Clinic-III	9th	3 (0-6)

Veterinary Obstetrics and Gyneacology

OBGY-202	Physiology of Reproduction	4th	3 (2-2)
OBGY-401	Reproductive Biotechnology	7th	2 (1-2)
OBGY-403	Reproduction Clinic-I	7th	2 (0-4)
OBGY-402	Obstetrics and Genital Diseases	8th	4 (2-4)
OBGY-404	Reproduction Clinic-II	8th	3 (0-6)
OBGY-501	Reproduction Clinic-III	9th	3 (0-6)

Veterinary Pathology

PATH-201	General Pathology	3rd	4(3-2)
PATH-202	Systemic Pathology	4th	4(3-2)
PATH-401	Clinical Pathology	7th	2(0-4)
PATH-403	Meat Inspection	7th	2(1-2)
PATH-501	Poultry Pathology	9th	3(2-2)
PATH-503	Livestock Health hazard Management	9th	1(1-0)

Veterinary Microbiology

MICRO-201	General Microbiology and Immunology	3rd	4(3-2)
MICRO-202	Bacteriology and Mycology	4th	3(2-2)
MICRO-301	General and Systematic Virology	5th	3(2-2)
MICRO-401	Milk and Milk Products Inspection	7th	2(1-2)

Veterinary Parasitology

PARA-201	General Parasitology and Protozoology	3rd	3(2-2)
PARA-202	Helminthology	4th	4(3-2)
PARA-301	Veterinary Entomology	5th	3(2-2)

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

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

Courses versus program objectives

Courses	Program Objectives		
	1	2	3
LM-101, ANAT-101, ANAT-102, PHYS-101, PHYS-102, PHARM-202, PHARM-301, PHARM-302, PATH-201, MICRO-201, PARA-201,	+++	++	++
LM-301, LM-302, LM-401, PHYS-102, LM-304, PS-202, PARA-202, MICRO-202, PARA-301, MED-403, MED-304	+++	+++	+++
SURG-302, OBGY-202, OBGY-401,	++++	++	++
LM-402, ANAT-103, SURG-501, SURG-504, PARA-301	++++	+++	++++
AN-102, AN 201, PS-501, OBGY-404, OBGY-501, MICRO-301, MICRO-401	++	++++	++++
AN-202, AN-301, ANAT-104, MED-404, PATH-501, PATH-503	+	+++	++++
ABG-201, ABG-202, MED-302, MED-503, MED-505, PATH-403	++	+++	++++

+ = Relevant, ++ = Relevant & satisfactory, +++ = Very relevant & Very satisfactory, ++++ = Highly relevant & Highly satisfactory, NA= Not applicable

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

Elements	Courses
Theoretical background	AN-102, AN-201, ABG-102, ABG-201, LM-101, ANAT-101, PATH-201, MICRO-201, PARA-201, ANAT-102, PHYS-101, PHYS-201, PHARM-202, SURG-302, OBGY-202, OBGY-401, PHARM-301, PHARM-302, PARA-202, MICRO-202, PARA-301
Problem analysis	AN-202, AN-301, ABG-201, ABG-202, LM-304, , PS-501, OBGY-404, OBGY-501, ANAT-101, ANAT-102, PHYS-101, PHYS-201, PHARM-202, PHARM-301, PHARM-302, PS-501, OBGY-404, OBGY-501, PATH-202, PATH-401, MICRO-401,
Solution design	AN-202, AN-301, ABG-202, LM-301, MED-302, MED-503, MED-505, , PS-501, OBGY-404, OBGY-501, MED-302, MED-503, MED-505

Standard 2-3: The curriculum must satisfy the core requirements for the program, as specified by the respective accreditation body.

The FV&AS is following the curriculum and course contents as approved by the Pakistan Veterinary and Medical Council, which is the sole accreditation body for DVM degree programs.

Standard 2-4: The curriculum must satisfy the major requirements for the program as specified by HEC, the respective accreditation body / councils.

The curriculum also satisfy well the general and professional as well as other discipline requirements for the programme according to the demands and requirements set by HEC.

Standard 2-5: The curriculum must satisfy general education, arts, and professional and other discipline requirements for the program, as specified by the respective accreditation body/council.

The courses offered by the departments at FV&AS are the core courses for the degree of DVM. These courses also satisfied the general requirements for gaining knowledge and skills in the field of livestock production and management.

Standard 2-6: Information technology component of the curriculum must be integrated throughout the program.

The course contents of AN-201, AN-202, AN-301, LM-301, LM-402, ABG-201 and ABG-202, PS-501, PHYS-201 contain information technology components. The AN courses involve the use of different feed formulation software for least cost feed formulation and feasibility report

preparation for feed mill and computerized feed milling. The use of statistical and animal modeling packages is the important component of ABG courses.

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

Assignments are given to students on specific titles (part of the course) which are presented orally and are submitted as written report, to increase their oral and written communication skills.

CRITERION 3: LABORATORIES AND COMPUTING FACILITIES

CRITERION 3: LABORATORIES AND COMPUTING FACILITIES

The information about the laboratories at FV&AS is as under.

Location	Room size (ft x ft)	Used as lab for practicals for
Laboratory # 1 Histology, IVF Laboratory, Semen laboratory, A.I section	35×20 sq. ft	OBGY-202, OBGY-401, OBGY-402, OBGY-403, OBGY-404, OBGY-501
Laboratory # 2 Animal Nutrition, Dairy Laboratory and Animal Breeding & Genetics Laboratory	35×20 sq. ft	AN-102, AN-201, AN-202, AN-301, ABG-201, ABG-202, LM-101, LM-301, LM-302,
Laboratory # 3 Operation Theatre/Clinical Diagnostic Laboratory/Epidemiology laboratory	30×22 sq. ft	SURG-401, SURG-402, SURG-404, SURG-403, SURG-501
Laboratory # 4 Gross Anatomy	50×30 sq. ft	ANAT101, ANAT102
Laboratory # 5 Parasitology and Pathology Laboratory	50×30 sq. ft	PATH-102, PATH-202, PARA-202, PARA-301
Laboratory # 6 Physiology and Pharmacology Laboratory	50×30 sq. ft	PHYS-101, PHYS-102, PHARM-201
Laboratory # 7 Microbiology Laboratory	50×30 sq. ft	MICRO-201, MICRO-202, MICRO-301
Pet Clinic/Veterinary Animal Teaching Hospital Reception, Animal holding, Examination area, Pharmacy, Isolation unit	15×15 sq. ft 15×20 sq. ft 15×20 sq. ft	MED-401, MED-402, MED-403, MED-404, MED-501
RawatTeaching/Veterinary Hospital Reception, Animal holding, Examination area, Pharmacy		MED-401, MED-402, MED-403, MED-404, MED-501, SURG-401, SURG-402, SURG-404, SURG-403, SURG-501, OBGY-202, OBGY-401, OBGY-402, OBGY-403, OBGY-404, OBGY-501

- **Location and Area:** Faculty of Veterinary and Animal Sciences, Across Main Campus (University Institute of Biochemistry and Biotechnology), PMAS-AAUR.
- **Objectives:** Laboratories are used for practical exercises and demonstrations to graduate students in their introductory and major courses.

- **Adequacy for instruction:** These laboratories are being used by undergraduate students. These laboratories are not sufficient to fulfill all courses requirements. These laboratories are independent one and therefore separate labs are required for each discipline of DVM. However, they are spacious and adequate for practical work when class size is around 30 students. The laboratories have standard requirements in view of equipment, available resources and expansion program. However, latest apparatus for different sort of analyses like blood, feed analysis, milk analysis, postmortem facilities are present in the concerned laboratories.
- **Courses taught:** Indicated in the above table.
- **Software available:** Feed formulation software like UFFF, UFDA and statistical packages like SPSS and Minitab are available.
- **Major apparatus and equipment:**

S.No	Department	Equipment Model/Make	Specification	No.	Used in practicals of courses
1.	Histology	Binocular Microscope	Olympus CS21FS1	20	ANAT-103, 104
2.		Cryostat (microtome)	Starlet - 2212	1	ANAT-103, 104
3.		Tissue Grinder set	Model Wheaton, USA	1	ANAT-103, 104
4.		Specimen slides	For Histology	40	ANAT-103, 104
5.		Projection microscope (with camera, projector & screen)	Meiji Model MX4000	1	ANAT-103, 104
6.		Stage and ocular micrometers	Japan	2	ANAT-103, 104
7.		Balance Electronic Digital Top loading 220	BL-220 H Shimaduz	1	ANAT-103, 104
8.		Rotary Microtome TECS Embedding Console System	Tissue-TEK Rotary	1	ANAT-103, 104
9.		Auto Staining unit	Tissue-TEK	1	ANAT-103, 104
10.		Refrigerator	Waves (double door)	1	ANAT-103, 104
11.		Slides Boxes Wooden	For 100 slides	10	ANAT-103, 104
12.		Dissection set	Standard	2	ANAT-103, 104
13.		Dissection microscopes	CZM 6 Labomed, USA	2	ANAT-103, 104
14.		Computer P-IV, Laser Jet Printer	Intel original 3.06 GHz P-4	1	For document preparation, data analysis
15.		Overhead Projector	Two 350Watt Halogen lamps	2	ANAT-103, 104
16.	Gross Anatomy	Deep Freezers	Waves	1	ANAT-101, ANAT-103
17.		Dissection set	Standard, Local	15	ANAT-101, ANAT-103
18.		Pan Balance	Model SC-4020	1	ANAT-101, ANAT-103
19.		Overhead Projector	Two 350 Watt	1	ANAT-101, ANAT-

S.No	Department	Equipment Model/Make	Specification	No.	Used in practicals of courses
			Halogen lamps		103
20.		Dissecting Table	6' x 3'	5	ANAT-101, ANAT-103
21.		Skeleton of Goat	Disarticulated	5	ANAT-101, ANAT-103
22.		Skeleton of Goat	Articulated	1	ANAT-101, ANAT-103
23.		Skeleton of Dog	Articulated	1	ANAT-101, ANAT-103
24.		Skeleton of Ox	Disarticulated	1	ANAT-101, ANAT-103
25.		Skeleton of Ox	Articulated	1	ANAT-101, ANAT-103
26.		Skeleton of Horse	Disarticulated	1	ANAT-101, ANAT-103
27.		Skeleton of Horse	Articulated	1	ANAT-101, ANAT-103
28.		Plastic Drum	50 L	5	ANAT-101, ANAT-103
29.		Artery Forceps	Medium	3	ANAT-101, ANAT-103
30.		Artery Forceps	Small	3	ANAT-101, ANAT-103
31.		Plain Forceps	9'	4	ANAT-101, ANAT-103
32.		Saw (For cutting bones)	8'	1	ANAT-101, ANAT-103
33.		Saw (For cutting bones)	2'	1	ANAT-101, ANAT-103
34.		Rib Cutter	Standard Size	2	ANAT-101, ANAT-103
35.		Sheerer	Large Sized	1	ANAT-101, ANAT-103
36.	Physiology	Stethoscope	Standard, Germany	5	PHYS-101, 102
37.		Verinier Callipers	Manual	3	PHYS-101, 102
38.		Sonicator	E-60H Germany		PHYS-101, 102
39.		Stage and ocular micrometers	Japan	10	PHYS-101, 102
40.		Analytical Balance	Sartorius, CP 224S		PHYS-101, 102
41.		Hemoglobin Meter	HG202 Apel Japan	3	PHYS-101, 102
42.		Hemoglobin Meter (sahlis) and Haemocytometers	Model 32430, Germany	5	PHYS-101, 102
43.		CO2 gas cylinder	Standard	1	PHYS-101, 102
44.		Olympus Binocular Microscope	CS21FS1	5	PHYS-101, 102
45.		Binocular Microscopes	E100, Nikon	5	PHYS-101, 102
46.		Digital Kymograph & Electrocardiogram	T-425-2120	1	PHYS-101, 102
47.		Refrigerators	Waves (double door)	1	PHYS-101, 102
48.		Slides Boxes Wooden	For 100 slides	5	PHYS-101, 102
49.		Dissection set	Standard	2	PHYS-101, 102
50.		Electronic Balance	Sartorius CP 324S	1	PHYS-101, 102
51.		Ultra- Violet Lamp	LF-206LS	1	PHYS-101, 102
52.		Vacuum pump with filtering unit built	Complete Set	1	PHYS-101, 102
53.		Mini-gel Electrophoresis	CAT 1011000	1	PHYS-101, 102
54.		Digital Cell Counter	DBC-8E	1	PHYS-101, 102
55.		BP Apparatus	K303T Japan	5	PHYS-101, 102

S.No	Department	Equipment Model/Make	Specification	No.	Used in practicals of courses
56.		Regodigit oven	s Model ML-865 Type 219	1	
57.		Oven universal Memmert digital	Memmert Germany	1	PHAR-201, 301
58.		Eppendorf pipette	S#408.0579	1	PHAR-201, 301
59.		Tissue homogenizer	Model HG-15A	1	PHAR-201, 301
60.		Distill water distiller	Serial no PBI 59789	1	PHAR-201, 301
61.		Centrifuge (clinical type)	Labofuge-200	1	PHAR-201, 301
62.		CO ₂ incubator	Sanyo model # MCO-15AC	1	PHAR-201, 301
63.		pH meter	Model pH-2002 Korea	1	PHAR-201, 301
64.		Vortex mixture	Model # VM-10 Germany	1	PHAR-201, 301
65.		Computer P-IV, Laser Jet Printer	Intel original 3.06 GHz P-4	1	PHAR-201, 301
66.		Desiccators with pump	30 cm dia	2	PHAR-201, 301
67.	Microbiology	Autoclave (Horizontal)	Model ASB260T	1	MICRO-201, 202
68.		Binocular Light Microscope	E-100, Nikon	5	MICRO-201, 202
69.		BOD Incubator	Lovibond AP-210904	1	MICRO-201, 202
70.		Centrifuge (Clinical)	Labofuge-200 4000RPM	1	MICRO-201, 202
71.		Electronic Balance	Model CP 32 4S Sartorius	1	MICRO-201, 202
72.		Instrument Sterilizer	IS-825C, Local	1	MICRO-201, 202
73.		Overhead Projector	Two 350 Watt Halogen lamps	1	MICRO-201, 202
74.		Projection microscope (with camera, projector & screen)	MX-4000 Meiji	1	MICRO-201, 202
75.		Slides Boxes Wooden	For 100 slides	10	MICRO-201, 202
76.		Autoclave (Vertical/digital)	Model WAC-60 Germany	1	MICRO-201, 202
77.		Tissue Homogenizer	Model HG-15A	1	MICRO-201, 202
78.		Ultra- Violet Lamp	Model LF-206LS	3	MICRO-201, 202
79.		CO ₂ Incubator	MCO-15 AC	1	MICRO-201, 202
80.		Ependorf research pipette	100-1000 µl & 10-100 µl	2	MICRO-201, 202
81.		Water purifier	Model:TKA-6L Germany	1	MICRO-202
82.		Oven	Memmert, Model UNB-400 Germany	1	MICRO-201, 202
83.	Parasitology	Binocular Microscope	Model CS21FS1 Olympus	5	PARA-201, 202

S.No	Department	Equipment Model/Make	Specification	No.	Used in practicals of courses
84.		Binocular microscopes	Nikon E-100	10	PARA-201, 202
85.		Deep Freezer	Waves	1	PARA-201, 202
86.		Slides Boxes Wooden	For 100 slides	5	PARA-201, 202
87.		Mono Pan Balance		1	PARA-201, 202
88.		Centrifuge Clinical	EBA-20 Hettich Germany	1	PARA-201, 202
89.		Computer P-IV	Pentium dual core E 222002.20 GHZ	1	PARA-201, 202
90.		Over head projector		1	PARA-201, 202
91.	Pathology	Post-mortem Tables	6 ftX3 ft	3	PATH-201, 202
92.		Stage and ocular micrometers	Japan	4	PATH-201, 202
93.		Refrigerator	Waves (double door)	1	PATH-201, 202
94.		Post mortem kits	Medium	4	PATH-201, 202
95.		Ultra- Violet Lamp	Model LF-206LS	2	PATH-201, 202
96.		Slides Boxes Wooden	For 100 slides	24	PATH-201, 202
97.		Computer P-IV, Laser Jet Printer	Intel original 3.06 GHz P-4	1	PATH-201, 202
98.		Oven	Memmert, Model UNB-400 Germany	1	PATH-201, 202
99.		Binocular microscopes	Nikon E-100	10	PATH-201, 202
100.		Centrifuge Clinical	EBA-20 Hettich Germany	1	PATH-201, 202
101.		Electronic Balance	0.01 g to 3200 g	1	PATH-201, 202
102.		Hemoglobin meter digital	Model HG-202	1	PATH-201, 202
103.		Incubator CO2	Model MCO-15 AC	1	PATH-201, 202
104.		Centrifuge Refrigerated		1	PATH-201, 202
105.		pH meter	Model pH-2002	1	PATH-201, 202
106.		Water Bath	Model WNB 10	1	PATH-201, 202
107.		Incubator	Model INB- 400	1	PATH-201, 202
108.	Theriogenology	Autoclave	WITEG, Germany	2	OBGY-201, 401, 403
109.		CO2 Incubator (Complete)	MCO-15AcC, Sanyo, Japan	02	OBGY-201, 401, 403
110.		Deep Freezers	Waves	01	OBGY-201, 401, 403, 501
111.		Dissection microscopes	CZM 6 Labomed, USA	3	OBGY-201, 401, 403, 501
112.		Binocular light microscopes	E-100, Nikon	10	OBGY-201, 401, 403, 501
113.		Electric Stimulator/Ejaculator For bull & sheep	Model H29 AA USA	2	OBGY-201, 401, 403, 501
114.		Embryo tome set	Local	2	OBGY-402, 404, 501
115.		Embryo transfer set	Local		OBGY-402
116.		Cervical opener	Local	2	OBGY-402
117.		Artificial vagina	For sheep	2	OBGY-201, 401, 403
118.		AI gun	For cow/buffalo	6	OBGY-201, 401, 403
119.		AI steel rods	Local, for cow/buffalo	6	OBGY-201, 401, 403
120.		Laminar Flow Cabinet Digital Control Panel Monitors	ESCO Streamline, Singapore	1	OBGY-201, 401, 403
121.		Liquid Nitrogen Containers	IMV, France	02	OBGY-201, 401, 403
122.		Overhead Projector	Two 350 Watt	1	OBGY-201, 401, 403

S.No	Department	Equipment Model/Make	Specification	No.	Used in practicals of courses
			Halogen Lamps		
123.		Obstetrical sets	Local	4	OBGY-402
124.		Phantom Box	6 ftx2.5 ft	1	OBGY-402
125.		Projection microscope, with digital camera, projector & screen)	Meiji MX 4000	1	OBGY-201, 401, 403
126.		Slides Boxes Wooden	For 100 slides	5	OBGY-201, 401, 403
127.		Shaking water bath	WITEG, Germany	1	OBGY-201, 401, 403
128.		Stabilizers	Local	01	OBGY-201, 401, 403
129.		Slide Warmer		02	OBGY-201, 401, 403
130.		Surgical trays	Local	06	OBGY-201, 401, 403
131.		Vortex mixture	WITEG, Germany	1	OBGY-201, 401, 403
132.		Water Bath Digital	Memmert, WNB-10, Germany	1	OBGY-201, 401, 403
133.		Semen quality analyzer	SQA-UB, Europe	1	OBGY-201, 401, 403, 501
134.		pH meter	Istek, Inc. Korea	1	OBGY-201, 401, 403
135.		Analytical weighing balance	Sartorius, Germany	1	OBGY-201, 401, 403, 501
136.		Portable Ultrasound machine with 3 probes	Aloka-500 Japan	1	OBGY-401, 403, 501
137.		Florescent Microscope	CETI, Japan	1	OBGY-201, 401, 403, 501
138.	Veterinary Medicine	BD Syringe	Local	1	MED-302, 402, 404, 401, 403, 501
139.		Bench wooden	Local	4	
140.		Office Chairs	Local	8	
141.		Revolving chairs	Local	1	
142.		Deep Freezers	Waves	1	MED-302, MED-402
143.		Drip stand	Local	1	MED-302, 402, 404, 401, 403, 501
144.		Drencher semi automatic	Local	1	MED-302, 402, 404, 401, 403, 501
145.		Drenching bamboo	Local	1	MED-302, 402, 404, 401, 403, 501
146.		Equine mouth gauge	Local	1	MED-404, 403, 501
147.		Drencher manual	Local	1	MED-302, 402, 404, 401, 403, 501
148.		Enema pump	Local	1	MED-404, 403, 501
149.		ELISA Complete set with Test Reader	EL-401, Biotek, USA	1	MED-302, 402, 404, 401, 403,
150.		IV stand	Local	2	MED-404, 403, 501
151.		Magnifier	Imported	1	MED-404, 403, 501
152.		Ophthalmoscope	Riester Germany	1	MED-404, 403, 501
153.		Otoscope	Imported	1	MED-404, 403, 501
154.		Pop shearer	Local	1	MED-404, 403, 501
155.	Veterinary Surgery	Trocar and canola	Local	10	MED-404, 403, 501
156.		Stomach tube	Local	5	MED-404, 403, 501
157.		Probang tube	Local	5	MED-404, 403, 501
158.		Teat opener	Local	4	MED-404, 403, 501
159.		Bone Chisel	Local	2	SURG-403, 404, 501
160.		Bone hammer	Local	2	SURG-403, 404, 501
161.		Brun oval bone curette	Local	2	SURG-403, 404, 501
162.		Bone rongeurs	Local	1	SURG-403, 404, 501
163.		Bone clamps	Local	2	SURG-403, 404, 501
164.		Electric absorb phlegm	Local	1	SURG-403, 404, 501

S.No	Department	Equipment Model/Make	Specification	No.	Used in practicals of courses
165.		Electric drill machine	Imported	1	SURG-403, 404, 501
166.		Elegator Forceps	Local	2	SURG-403, 404, 501
167.		Electric cautery	Local	1	SURG-403, 404, 501
168.		Intestinal forceps	Local	24	SURG-403, 404, 501
169.		Haemostatic forceps	Local	84	SURG-403, 404, 501
170.		Hand chuck	Local	2	SURG-403, 404, 501
171.		Groove director	Local	3	SURG-403, 404, 501
172.		Docking knife	Local	1	SURG-403, 404, 501
173.		Light for OT	Local	5	SURG-403, 404, 501
174.		Needle holders	Local	24	SURG-403, 402, 404, 501
175.		Manual drill machine	Germany	1	SURG-403, 404, 501
176.		Muscle retractor (self)	Local	3	SURG-403, 404, 501
177.		Muscle retractor (manual)	Local	3	SURG-403, 404, 501
178.		Pin cutter	Local	1	SURG-403, 404, 501
179.		Surgical light	Local	1	SURG-403, 402, 404, 501
180.	Breeding and Genetics	Binocular microscopes	E-100, Nikon	10	ABG-201
181.		Computer P-IV, Laser Jet Printer	Intel original 3.06 GHz P-4	1	Data analysis
182.	Livestock Management	Laser Jet Printer	HP-1020	1	
183.		Analytical Balance	Model CP 224S Sartorius	1	LM-101
184.		Gerber Machine	Local & Imported	2	LM-301
185.		Lactometer	Local	6	LM-304
186.		Burettes	Local	1	LM-301
187.	Animal Nutrition	Electric Grinder and Blender	Model 276-P Maulinex	1	AN-102, 201, 202, AN-301
188.		Desiccators with pump	(glass) (30 cm dia)	1	AN-102, 201, 202, AN-301
189.		Water purifier with U V Lamp	Model Germany	1	AN-102, 201, 202, AN-301
190.		Refrigerators	Waves (double door)	1	AN-102, 201, 202, AN-301
191.		Projection microscope, with camera, projector & screen)	Model MX 4000 Meiji	1	AN-201, 202, AN-301
192.		Water Bath Digital	Memmert, WNB-10	1	AN-201, 202, AN-301
193.		Macro Kjeldahl's Apparatus	1 set, Germany	1	Used for AN-102, AN-201
194.		Soxhlet Apparatus	1 set, Germany	1	
195.		Analytical Balance	Model CP 224S Sartorius	3	AN-102, 201, 202, AN-301, LM-101
196.		Water Distillatory Apparatus	1M-100 Imeco	1	AN-102, 201, 202, AN-301
197.		High speed centrifuge 20000 rpm	Model K220R Centurion	2	PS-703, AN-102, 201, AN-202, AN-301
198.		Mortar and Pestle	6 inches, (local)	4	AN-102, 201, 202
199.		Muffle Furnace	D-550, NEYTECH, USA	2	AN-102, 202
200.		Spectrophotometer	PG Instruments, UK.	1	AN-301
201.		Flame Photometer	Model-360, Sherwood Sci. England	1	AN-102, AN-202
202.		Magnetic Stirrer	HI 190 M, USA	1	AN-102

S.No	Department	Equipment Model/Make	Specification	No.	Used in practicals of courses
203.		Vortex Mixer	Witeg, Germany	1	AN-301
204.		pH meter (Desktop)	Crison (pH-25)	1	AN-102, 201, LM-301
205.		pH meter (Portable)	ISTEK, PH-200 L, Korea	1	AN-102, 201, 202, 301
206.		Weighing balance Large	Local	1	AN-202, LM-101
207.		Electronic Balance	Sartorius Model CP32 4S	2	AN-102, 201, 202, 301
208.	Poultry Science	Egg Candlar	Local make	3	PS-202,
209.		Egg Incubator	Local make	1	PS-202,
210.		Computer P-IV, Laser Jet Printer	Intel original 3.06 GHz P-4	1	For documentation
211.		PH Meter		1	For Experimentation

- **Safety Regulations:** Safety measures are not available against fire (Extinguishers), injuries (First Aid Kit), minor hazards and accidents. However, a Medical Dispensary is available for such incidents at the university main campus.

Standard-3.1: Laboratory manuals/documentation/instructions for experiments must be available and easily accessible to faculty and students.

Laboratory manuals for blood chemistry, animal feeds & fodder and milk quality analysis etc., are available.

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

At present seven laboratory attendants and six laboratory assistants are available to maintain laboratory, equipment, glassware and chemicals.

Standard 3-3: The university computing infrastructure and facilities must be adequate to support program's objectives.

Computing facilities support is not available all the time to all faculty members and graduate students at the departmental level. However, computers with internet facilities are available to all faculty members and postgraduate students in the main library of the university.

CRITERION 4: STUDENT SUPPORT AND ADVISING

CRITERION 4: STUDENT SUPPORT AND ADVISING

The university organizes support programs for students and provide information regarding admission, scholarship schemes etc. Director Students Affairs also arranges various cultural activities and solve the students' problems. However, there is no parent's association at university level. The Students Resource Center also advises students about future planning and job placement.

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

- Courses are taught as per criteria of HEC & PVMC.
- At undergraduate level subjects/courses are offered as per scheme of study provided by the HEC and approved by University Academic Council.
- Elective courses are also offered as per policy of HEC and the University.
- Other departments offered courses according to the DVM scheme of studies.

Standard-4.2: Courses in the major area of study must be structured to ensure effective interaction between students, faculty and teaching assistants.

Courses are structured and decided in the departmental and then in faculty board of studies meetings. To ensure effective interaction between students and faculty, at the time of course formulation both theoretical and practical aspects are focused. Students are welcomed to ask question in class and even after the class. Theoretical problems are explained and assignments are also given to the students, whereas practicals are carried out in the laboratory with the involvement of instructor directly.

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 usually informed about the program requirement through the office of the head of the department. However, advising and counselling is also available through the personal communication of the teachers with the students.

- In addition, students can also contact with the relevant teachers whenever they face any problem. In case of some problem Director Students Affairs, appointed by the university, helps the students. Tutorial System in all departments has also been introduced. Two periods on Thursday are reserved for students for extracurricular activities. However, there is no such counselling cell in the department.
- Students can interact with the teachers/scientist in universities or research organization whenever they needed and there is an open option for the students to get the membership in the professional societies.
- Students Recourse Centre has been established for exploring job opportunities for the university graduates.

CRITERION 5: PROCESS CONTROL

CRITERION 5: PROCESS CONTROL

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

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

- **The admission criteria for DVM degree program** is well established and approved by the University Academic Council and Syndicate. An admission advertisement is published in the national newspapers by the Registrar Office.
- The age limit for undergraduate admission for a student is 23 years on 1st October of the year of admission. The final merit for admission is determined on the basis of marks obtained in F.Sc. (Pre-medical) examinations.

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.

- The student name, after completion of the admission process, is forwarded to the Registrar Office for proper registration and the registration number is issued to the student.
- Students are evaluated through Mid, Final and Practical examinations and through assignments and surprise quizzes.
- Registration is done for one time for each degree but evaluation is done through the result of each semester. Only those students, who fulfill the criteria, as notified by the Controllers of Examinations of the University, are promoted to the next semester.

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.

Recruitment policy followed by the University is recommended by the HEC. Faculty recruitment for all posts is done as per rule:

- Vacant and newly created positions are advertised in the national newspapers, applications are received by the Registrar office, and call letters are issued to the short-listed candidates on the basis of experience, qualification, publications and other qualities/activities as determined 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.
- Standards set by HEC are followed.
- At present, no procedure exists for retaining highly qualified faculty members. However, the revised pay scales structure is quite attractive.
- HEC also supports appointment of highly qualified members as foreign faculty Professors, National Professors and deputed them in concerned 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.

- Departments periodically review the curriculum depending upon new innovations and technology advancement as well as industry demands.
- Students usually buy cheap Asian editions of technology books. These books are also available in the University library, where documentation, copying and internet facilities are available.
- Photocopy material (book chapters, recent research papers) are also given to the students. Most of the lectures are supplemented by multimedia presentations.
- All efforts are made that the courses and knowledge imparted meet the objectives and outcome. The progress is regularly reviewed in the staff meetings and through university quality control cell.

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

- The controller of examinations announces the dates of commencement of examination. After each semester, the controller office notifies the results of the students. The evaluation procedure consists of quizzes, mid, final and practical examinations, assignments and reports, oral and technical presentations. The minimum pass marks for each course is 40% in theory and practical separately.
- In theory, weightage to each component of examination is as prescribed here under:

Mid Examination	30%
Assignments	10%
Final Examination	60%

- Grade points are as follows

Marks obtained	Grade	Grade point	Remarks
80-100 %	A	4	Excellent
65-79 %	B	3	Good
50-64 %	C	2	Satisfactory
40-49 %	D	1	Pass
Below 40 %	F	0	Fail

- Gold medals are awarded to the students who secure highest marks. Degrees are awarded to the students in the annual convocation.

CRITERION 6: FACULTY

CRITERION 6: FACULTY

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

The full time faculty distribution by program areas is given in the Table 3. The faculty resume are attached as Annexure-I.

Table No. 3. Faculty distribution by program areas

Program area of specialization	Courses in the area and average number of sections per year	Number of faculty members in each area	Number of faculty with Ph.D. degree
Livestock Production and Management			
Animal Nutrition	4 Courses, (2 Sections)	02	02
Livestock Management	6 Courses, (2 Sections)	03	02
Animal Breeding and Genetics	2 Courses, (2 Sections)	02	01
Poultry Sciences			
Poultry Science	4 Courses, (2 sections)	02	01
Clinical sciences			
Veterinary Obstetrics and Gynecology	6 Courses, (2 Sections)	01	-----
Veterinary Medicine	6 Courses, (2 Sections)	03	03
Veterinary Surgery and Radiology	6 Courses (2 Sections)	01	---
Veterinary Biomedical Sciences			
Anatomy & Histology	4 Courses, (2 Sections)	03	01
Pharmacology	2 Courses, (2 Sections)	01	-----
Physiology	2 Courses (2 Sections)	02	01
Veterinary Pathobiology			
Veterinary Pathology	6 Courses, (2 Sections)	02	01
Veterinary Microbiology	4 Courses, (2 Sections)	02	01
Veterinary Parasitology	3 Courses, (2 Sections)	02	02

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

- Professional training and availability of adequate research and academic facilities are provided to the faculty members according to the available resources.
- Incentives in the form of allowances to theses supervisors have been implemented to promote high standard research.
- Effective programs for faculty development (Ph.D. scholarships and Short term training program) have been introduced.

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

The details of faculty members are as under:

Table No. 4 Faculty Members in Each Department

Sr. No.	Name	Designation
Department of Livestock Production & Management		
1	Dr. Arshad Iqbal	Professor
2	Dr. Tanveer Ahmad	Associate Professor
3	Dr. Farooq Iqbal	Assistant Profesor
4	Dr. Muhammad Moaeen-ud-Din	Assistant Profesor
5	Dr. Muhammad Fiaz	Assistant Profesor
6	Mr. Kashif Ishaq	Lecturer
7	Hafiz Muhammad Waheed	Lecturer
Department of Poultry Science		
1	Dr. Nasir Mukhtar	Assistant Professor
2	Dr. Asghar Ali Mian	Consultant
3	Mr. Zaib ur Rehman	Lecturer
Department of Bio Medical Sciences		
1	Dr. Mansur Abdullah	Assistant Professor
2	Dr. Riaz Hussain Pasha	Assistant Professor
3	Ms Sumaira Hassan	Lecturer
4	Mr. Mujeeb ur Rehman	Lecturer
5	Mr. Asif Riaz	Lecturer
6	Mr. Zeeshan Akbar	Lecturer
Department of Pathobiology		
1	Dr. Muhammad Ali Abdullah Shah	Associate Professor
2	Dr. Imtiaz Ahmed	Assistant Professor
3	Dr. Murtaz ul Hassan	Assistant Professor
4	Mr. Sajid Umar	Lecturer
5	Dr.Saif ur Rehman	Lecturer
Department of Clinical Studies		
1	Dr. Nemat ullah	Professor
2	Dr. Arfan Yousaf	Associate Professor
3	Dr. Muhammad Arif Zafar	Assistant Professor
4	Dr. Muhammad Yaqoob	Assistant Professor (TTS)
5	Dr. Zahid Naseer	Lecturer

- Motivation and appreciation by the senior faculty members provides enthusiasm to the young faculty members.

Faculty survey: The results of faculty survey are mentioned in Tables 5 a &b, 6, 7, 8 & 9.

Factors for motivation and satisfaction for faculty were facilitation, cooperation and compensation by colleagues; independence for office duties and research work; job security and pay package. Faculty members suggested conducive environment with respect to space, animal farm facilities for practical, initiation of post-graduate and provision of equipments to improve

motivation and job satisfaction. Most of the faculty members were satisfied in term of research, teaching, interaction with students salary and compensation package.

Survey of graduating students: Not applicable

Table No. 5 (a). Results of Faculty Survey

S #	Parameter	Dr. Muhammad Fiaz	Dr. Kashif Ishaq	H. Muhamamd Waheed
1	Your mix of research, teaching and community service	B	D	B
2	The intellectual stimulation of your work	B	B	B
3	Type of teaching/research you currently do.	B	B	B
4	Your interaction with students	A	B	A
5	Cooperation you received from colleagues	A	B	B
6	The mentoring available to you	B	B	B
7	Administrative support from the department	B	B	B
8	Providing clarity about the faculty promotion process	B	B	B
9	Your prospects for advancement and progress through ranks	B	B	A
10	Salary and compensation packages	B	B	B
11	Job security and stability at the department	B	B	B
12	Amount of time you have for yourself and family	C	B	B
13	The overall climate at the department	B	B	B
14	Whether the department is utilizing your experience and knowledge	A	B	B
15	What are the best programs/ factor currently available in your department that enhances your motivation and job satisfaction?	---	Job Security and pay package	--
16	Suggest programs/factors that could improves your motivation and job satisfaction	Provision of Govt. residence, Dairy farm facilities. Initiation of training courses for farmers.	Opportunity for higher education to faculty. Residence facilities at campus, animal farms and lab facilities	Facilities for practical work

Table No. 5 (b). Results of Faculty Survey

S #	Parameter	Prof. Dr. Arshad Iqbal	Dr. Tanveer Ahmad	Dr M Farooq Iqbal	Dr M. Moaen ud Din
1	Your mix of research, teaching and community service	B	B	B	C
2	The intellectual stimulation of your work	B	B	B	D
3	Type of teaching/research you currently do.	B	B	B	C
4	Your interaction with students	A	A	A	B

5	Cooperation you received from colleagues	A	A	B	C
6	The mentoring available to you	B	B	B	C
7	Administrative support from the department	B	B	B	C
8	Providing clarity about the faculty promotion process	A	B	C	B
9	Your prospects for advancement and progress through ranks	A	B	C	C
10	Salary and compensation packages	A	B	C	B
11	Job security and stability at the department	A	B	C	B
12	Amount of time you have for yourself and family	B	C	B	D
13	The overall climate at the department	A	B	B	C
14	Whether the department is utilizing your experience and knowledge	A	B	B	D
15	What are the best programs/ factor currently available in your department that enhances your motivation and job satisfaction?	Facilitation in various matters. Every possible compensation from colleagues.	Independency in working for office duties and research work.	Faculty cooperation.	Research work required more equipment.
16	Suggest programs/factors that could improves your motivation and job satisfaction	Conducive environment with respect to space is required.	Animal farm facilities are required.	Facilities for practical work	Initiation of post graduate and research project. Equipment are lacking

Table No. 6. Results of Faculty Survey

S #	Parameter	Dr. Nasir Mukhtar	Dr. Asghar Ali Mian	Mr. Zaib ur Rehman
1	Your mix of research, teaching and community service	B	B	B
2	The intellectual stimulation of your work	B	B	B
3	Type of teaching/research you currently do.	B	B	B
4	Your interaction with students	A	A	A
5	Cooperation you received from colleagues	B	A	B
6	The mentoring available to you	B	B	B
7	Administrative support from the department	B	B	B
8	Providing clarity about the faculty promotion process	C	B	B
9	Your prospects for advancement and progress through ranks	C	B	A
10	Salary and compensation packages	C	B	B
11	Job security and stability at the department	C	B	B
12	Amount of time you have for yourself and family	B	C	B
13	The overall climate at the department	B	B	B
14	Whether the department is utilizing your experience and knowledge	B	B	B
15	What are the best programs/ factor currently available in your department that enhances your motivation and job satisfaction?	Facilitation in various matters and compensation from colleagues.	Independency in research work.	Faculty cooperation.
16	Suggest programs/factors that could improves your motivation and job satisfaction	Conducive environment	Poultry farm facilities are required.	Facilities for practical work

Table No. 7. Results of Faculty Survey

S #	Parameter	Dr. Mansur Abdullah	Ms Sumaira Hassan	Mr. Mujeeb ur Rehman	Mr. Asif Riaz	Mr. Zeeshan Akbar	Dr. Riaz Hussain Pasha
1	Your mix of research, teaching and community service	B	B	B	B	B	B
2	The intellectual stimulation of your work	B	B	B	C	C	B
3	Type of teaching/research you currently do.	B	B	B	B	B	B
4	Your interaction with students	A	A	A	A	A	A
5	Cooperation you received from colleagues	B	B	B	B	B	B
6	The mentoring available to you	B	B	B	B	B	B
7	Administrative support from the department	B	B	B	B	B	B
8	Providing clarity about the faculty promotion process	C	B	B	B	B	C
9	Your prospects for advancement and progress through ranks	C	A	A	B	B	C
10	Salary and compensation packages	C	B	B	B	B	C
11	Job security and stability at the department	C	B	B	B	B	C
12	Amount of time you have for yourself and family	B	B	B	C	C	B
13	The overall climate at the department	B	B	B	B	B	B
14	Whether the department is utilizing your experience and knowledge	B	B	B	B	B	B
15	What are the best programs/ factor currently available in your department that enhances your motivation and job satisfaction?	Facilitation in various matters	Independen cy in working for office	Cooperation	Research work required more equipment.	Faculty cooperation .	Research work required more equipment.
16	Suggest programs/factors that could improves your motivation and job satisfaction	--	Lab animal facilities are required.	Facilities for practical work	Initiation of post graduate and research project	Facilities for practical work	Initiation of post graduate and research project

Table No. 8. Results of Faculty Survey

S #	Parameter	Dr. Muhammad Ali Abdullah Shah	Dr. Imtiaz Ahmed	Dr. Murtaz ul Hassan	Mr. Sajid Umar	Dr.Saif ur Rehman
1	Your mix of research, teaching and community service	B	B	C	B	A
2	The intellectual stimulation of your work	B	B	B	C	B
3	Type of teaching/research you currently do.	B	B	C	B	B
4	Your interaction with students	A	A	A	A	A
5	Cooperation you received from colleagues	B	B	B	B	B
6	The mentoring available to you	B	A	B	C	B
7	Administrative support from the department	A	A	B	A	A
8	Providing clarity about the faculty promotion process	C	B	C	B	A
9	Your prospects for advancement and progress through ranks	C	B	B	C	B
10	Salary and compensation packages	C	B	C	C	B
11	Job security and stability at the department	C	B	B	C	B
12	Amount of time you have for yourself and family	B	B	B	A	B
13	The overall climate at the department	A	A	B	A	A
14	Whether the department is utilizing your experience and knowledge	B	A	B	A	A
15	What are the best programs/ factor currently available in your department that enhances your motivation and job satisfaction?	Facilitation in various matters	Independency in research work	Faculty cooperation.	Research work required more equipment.	Faculty cooperation.
16	Suggest programs/factors that could improves your motivation and job satisfaction	Conducive environment with respect to space is required.	--	Facilities for practical work	Equipment are lacking	Facilities for practical work

Table No. 9. Results of Faculty Survey

S #	Parameter	Dr. Nemat ullah	Dr. Arfan Yousaf	Dr. Muhammad Arif Zafar	Dr. Muhammad Yaqoob	Dr. Zahid Naseer
1	Your mix of research, teaching and community service	B	B	B	B	B
2	The intellectual stimulation of your work	A	B	B	B	B
3	Type of teaching/research you currently do.	A	B	B	B	B
4	Your interaction with students	A	A	A	A	A
5	Cooperation you received from colleagues	B	B	B	B	B
6	The mentoring available to you	B	B	B	B	C
7	Administrative support from the department	A	A	A	A	A
8	Providing clarity about the faculty promotion process	A	B	C	B	B
9	Your prospects for advancement and progress through ranks	A	B	B	B	B
10	Salary and compensation packages	A	B	B	B	B
11	Job security and stability at the department	A	B	B	B	C
12	Amount of time you have for yourself and family	B	B	B	B	C
13	The overall climate at the department	A	A	B	A	A
14	Whether the department is utilizing your experience and knowledge	A	B	B	B	B
15	What are the best programs/ factor currently available in your department that enhances your motivation and job satisfaction?	Facilitation in various matters	Independency in working	Faculty cooperation	Research required work more equipment	Faculty cooperation
16	Suggest programs/factors that could improves your motivation and job satisfaction	Conducive environment with respect to space is required.	--	Facilities for practical work	Initiation of post graduate	Facilities for practical

CRITERION 7: INSTITUTIONAL FACILITIES

CRITERION 7: INSTITUTIONAL FACILITIES

According to this criterion, the institution must have the infrastructure to support new trends in learning such as e-learning including digital publications, journals etc.

- The library must possess an up-to-date technical collection relevant to the program and must be adequately staffed with professional personnel. Insufficient library's technical collection of books.
- Class rooms must be adequately equipped and offices must be adequate to enable faculty to carry out their responsibilities.

Standard wise description of this criterion is given as under

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

The faculty and students have access to E-library through university internet facility which is very helpful for the high quality education and producing research of international standard. However following shortcomings/problems are of concern:

- Only five PCs are available in the FV&AS for office documentation and faculty use.

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.

Faculty of Veterinary and Animal Sciences (FV&AS) has its own library with appreciable number of books related to Veterinary Sciences. The University Central Library has also sufficient number of veterinary text books. The following is the description of library facilities.

Library At FV&AS

- **Is there a separate building for library?** No
- **Name of Teacher dealing with library:** Sumaira Hassan, (M. Phil)
- **Total number of professional books:** >1050
- **Number of other related books:** >50
- **Number of Scientific/Research journal:** Nil (Only Soft Copies on request of Poultry Sci., Brit. Poultry Sci., World Poultry Sci. Journal)

- **Other available instructional materials:** Teaching and Learning CDS. Abstracts (CAB 1972-2008)
- **Internet facilities:** Yes/HEC Library available resources
- **Annual budget (2010-12) allocation allocated for purchase of books and Journals:**Rs., 3.0 million

University Central Library

- **Is there a separate building for library?** Yes
- **Name of Librarian with qualification:** Shahid Mehmood, (MLISc)
- **Details of Available Physical Facilities (with sitting capacity in different arrangements):** 300 Seating Capacity
- **Total number of professional books:** More than 2500 (Veterinary)
- **Number of other related books:** More than 2000
- **Number of Scientific/Research journal:** 200
- **List of recent incoming Scientific/Research periodicals (attach a separate sheet please):** 23 Titles (including research reports and proceedings)
- **Other available instructional materials:** 15
- **Internet facilities:** Yes/HEC Library available resources
- **Annual budget (2010-12) allocation allocated for purchase of books and Journals:**As such there is no separate allocation for veterinary books. However, more than Rs. 1.0 million was spent for the purchase of books related to the fields of veterinary sciences.

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

- Currently there are three main class rooms for teaching DVM courses. However, after the construction of new building more class rooms and faculty offices will be available.
- Three multimedia and laptops are available for the lecture halls/laboratories.

CRITERION 8: INSTITUTIONAL SUPPORT

CRITERION 8: INSTITUTIONAL SUPPORT

The university administration has been struggling hard to strengthen and upgrade all the departments and establishing new faculties and Institutes. The university is also trying to attract highly qualified faculty.

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 the budget requirements of the faculty are met through the HEC approved PC-1. There is an allocation of budget for the purchase of laboratory equipments and chemicals & glassware in the PC-1.
- Likewise, under faculty development program, abroad faculty trainings are also available.

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

The intake of DVM students is once in a year. A detail of the students input during the past years is given below.

Discipline	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
DVM	50	52	55	55	61	65

The faculty is in the developing phase, therefore M.Sc./M.Phil, and Ph.D student's enrolment in different discipline is nil as these program will be initiated after the completion of the FV&AS building. However, the faculty yet offers undergraduate courses only and about 236 students were taught during the year 2010-12.

The faculty- graduate ratio is 1: 13

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

There is an allocation of budget for the purchase of laboratory equipments and chemicals & glassware.

SUMMARY AND CONCLUSIONS

SUMMARY AND CONCLUSIONS

SUMMARY

The faculty has engaged 28 faculty members, including 2 Professor, 3 Associate Professor, 12 Assistant Professor and 11 Lecturers. Department also has the praise of more than 30 international and national publications since its establishment. The 8 faculty members of different departments are HEC recognized supervisors. The FV&AS members have completed 4 university funded research projects and two HEC funded research project up till now since the establishment of the faculty in 2006.

Present assessment report is for the year Fall 2010 to Spring 2012 and includes; Program Mission, Objectives, Outcomes, Curriculum Design and Organization. Information about laboratories, computing facilities, student support and guidance is revealed in detail. Process control, capacity of faculty members, institutional facilities and support information is also cited in the document.

Graphical representation of different assessment performance is also referred. Teacher's performance quality bar ranged from 3.444 to 4.567 during the year 2010-12. Faculty survey revealed an overall level of satisfaction; however, they feel less buoyant with the condition of the class rooms.

The FV&AS at present is engaged in undergraduate courses of DVM. Curriculum design, development and organization are based upon well defined and approved criteria. Pre-requisites are fully observed, examinations are conducted as perschedules and academic schemes are fully prepared in advance. The number of courses, alongwith their titles and credit hours for each semester, course contents for degree program is fully planned. Their efficacy was measured through different standards and it was found to range between satisfactory to highly satisfactory.

The facilities and shortcomings in the laboratory are discussed. It was concluded that proper laboratory and computer facilities are needed to further strengthen the discipline on scientificlines. Proper steps are taken to guide the students for programme requirements, communication, meetings, tutorial system, tours, students-teacher interaction etc. They are well informed of relevant scientific societies, job opportunities and other such activities. Some improvements have been suggested.

As regards the process control covering admission, registration, recruiting policy, courses and delivery of material, academic requirements, performance and grading, university as well as Higher Education Commission have set forth proper rules, which are properly followed. Faculty survey results were satisfactory.

Institutional facilities were measured through Criterion 3; infrastructure, library, class room and faculty offices and in each case, shortcomings and limitation are highlighted. Institutional facilities need to be strengthened. Accordingly, institutional support will greatly promote and strengthen academic, research, management and leadership capabilities.

In conclusion, performance of the department may be further improved by considering the following points.

- Class rooms need improvement to make conducive environment for student's learning. Proper lighting, cooling facility during severe summer, aeration, provision of multimedia and sound systems can improve quality of learning.
- Independent laboratory for each discipline is required with necessary equipments.
- There is dire need for refresher courses for the newly appointed teachers pertaining to teaching methodology, education psychology, research and developments and evaluation of students. The HEC may be requested to arrange such trainings.
- There is need to improve level of cooperation among the faculty members and students for better output.
- There is also need to improve mix of research and teaching proportion to produce professionally sound graduates.
- At present there are no arrangements for professional and behavioral training of the supporting staff. Such trainings will improve their abilities for enhancing the quality of research and teaching.
- The survey has also pointed out shortage of personal computers. Improvement in this area will also boost the level of research and teaching.
- The survey results have also revealed that faculty members are also in need of professional foreign trainings which will enable them to carry out research on new aspects of animal production.

Prepared by: Members of Program Self Assessment Teams at FV&AS

Dr. Tanveer Ahmad	(Coordinator)	_____
Dr. Riaz Hussain	(Member)	_____
Dr. Muhammad Yaqoob	(Member)	_____
Mr. Zaib-Ur-Rehman	(Member)	_____

ANNEXURES

Faculty Resume

Name	Professor Dr Arshad Iqbal (Late)
Personal	Chairman, Deptt: Livestock Production & Management, PMAS Arid Agriculture University, Rawalpindi. Ph Office: 051-920080, 9290115 Cell # 0321-5852493
Experience	03 January, 2012... Professor Livestock Management, PMAS Arid Agriculture University, Rawalpindi About 25 years
Honors and Awards	Star Award ARTA International Award, USA
Memberships	ISOCARD (International Society of Camelid Research and Development) Member Seminar/Synopsis Committee, Faculty of Animal Husbandry, University of Agriculture, Faisalabad. Member Academic Council, PMAS Arid Agriculture University, Rawalpindi Member Advanced Studies and Research Board, PMAS Arid Agriculture University, Rawalpindi
Graduate Students	As Member Supervisory Committee 1. Inherited performance and genetic evaluation of Sahiwal cattle in Pakistan (M. Khalid Bashir--2006). 2. Interherd performance and genetic evaluation of Sahiwal cattle in Pakistan (Zia-ur-Rehman-2006). 3. Genetic evaluation of Beetal goats for performance traits in Pakistan (Afzal Ali--2006). 4. Characterization of Sahiwal cattle for linear type traits (Musarrat Abbas Khan, 2008). 5. Effect of <i>Phonixdactylifera</i>, <i>Gossypim hirsutum</i> and <i>Linum usitatissimum</i> on some reproductive parameters in female mice (S.M. Rehan Dilshad, 2009). 6. Portrayal of camelids in pastoral economy of north-eastern herders of Balochistan (Abdul Raziq, 2009). M.Sc(Hons) Livestock Management As Major Supervisor 1. Livestock production profile in tehsil Rawalakot District Poonch (AK). (M. Shakeel Khan, 1996). 2. Effect of feeding supplemental fat on the production performance of Sahiwal cows (Jamil Akbar, 2003). 3. Prospects and limitations of raising dairy animals in Gujranwala district (M. Arif, 2009). 4. Assessment of equine welfare around Faisalabad city (Asif Hameed, 2009). As Member Supervisory Committee 1. Livestock production profile as affected by different managerial practices of various social groups in Babozai tehsil of District Swat (NWFP). (Akbar Ali, 2001). 2. The impact of dairy herd size on milk production cost, marketing and farm income in peri-urban areas of Faisalabad (Ibrahim M. Adam, 2002). 3. Management profile and contribution of livestock in poverty alleviation and nutritional improvement in peri-urban areas of Faisalabad (Samrina Akhter, 2005). 4. Factors contributing kid mortality in goats (Hafiz M. Ahsan, 2009). As Member Supervisory Committee

	1. A comparative study of reactive and vat dyed twill fabrics for their colour fastness properties and cost of production (Afshan Nigah, 1997). 2. Comparative evaluation of commercially available homeopathic preparation and an allopathic preparation for the treatment of Bubaline mastitis (Ihsan Rahim Akbar), 2000) 3. Determination of chemical composition, amino acid profile and in vitro protein degradability of feed ingredients (Shazia Noreen, 2001). 4. Comparative aspects of prevalence of mastitis in buffaloes and crossbred cows and antibiotic susceptibility profile of isolates (Alamzeb Khan, 2002). 5. Phylogenetic relationship among some horse breeds of Pakistan using DNA finger printing technology (Faizul Hassan, 2004). 6. Genetic control of persistency of lactation in Sahiwal cattle (Ali Zurwan, 2000). 7. Comparative therapeutic efficacy of Levamisole, vitamin E and Amoxicillin against sub-clinical mastitis in dairy buffaloes (M.Umer, 2009). 8. Effect of sodium bicarbonate as a performance modifier in male buffalo calves raised at farmers level (M.Shakeel Amjad).
Service Activity	Advisory services to the farmers and students on various aspects of livestock production
Brief Statement of Research Interests	Camel and Small Ruminant Production, Animal welfare
Publications	Articles published by refereed journal • Iqbal, A., J.Akbar, M.Abdullah and M.Sarwar. 2012. Feeding and economic aspect of supplemental fat in Sahiwal cows. J. Anim. Plant Sci. 22(Suppl-2):55-58. • Dilshad, S.M.R., N.U.Rehman, N.Ahmad and A.Iqbal. 2010. Documentation of ethnoveterinary practices for mastitis in dairy animals in Pakistan. Pak. Vet. J. 30(3):167-171. • Iqbal, A. B.B.Khan and M.Riaz. 2009. The water buffalo: Socio-economic and welfare aspects. Pak. J. Zoo. No.9:503-509. • Khan, B.B. and A.Iqbal. 2009. The water buffalo: An underutilized source of milk and meat. Pak. J. Zoo. No.9:517-522. • Yousaf, A., U.Farooq, T.Ahmad, A.Iqbal and Z.Rahman. 2009. Comparative efficacy of Levamisole Hcl, vitamin E and Amoxicillin in the treatment of sub clinical Bubaline. Pak J. Zoo. No.9:819-822. • Shahzad, M.A. M.Sarwar, M.Nisa, A.Iqbal and M.Riaz. 2009. Feed consumption and weight gain of growing buffalo calves as influenced by feeding fermentable energy source in corncobs based diet. Pak J. Zoo. No.9:707-709. • Bashir, M.K., M.S.Khan, S.A.Bhatti and A.Iqbal. 2009. Effect of inbreeding on first lactational performance traits of Nili-Ravi buffaloes in Pakistan. Pak. J. Zoo. No.9:73-77. • Akhtar, S., M.Younas, A.Iqbal and M.Z.Alam. 2008. Management profile and contribution of livestock in poverty alleviation and nutritional improvement in peri-urban areas of Faisalabad. Pak. J. Agric. Sci. 45 (2):381-385. • Younas, M., M.Bilal, M.E.Babar, M.Yaqoob and A.Iqbal. 2008. Reproductive profile of Holstein kept in Balochistan province of Pakistan-II. Pak. J. Agric. Sci. 45 (2):280-287. • Khan, M.A., M.S.Khan and A.Iqbal. 2008. Genetic and phenotypic correlations among linear traits in Sahiwal cows. Pak. J. Agric. Sci. 45 (2):268-274 • Aden, I.M., S.H.Raza, A.Iqbal, Bakht B.Khan and M.Sarwar. 2008. Impact of dairy herd size on milk production cost, marketing and farm income in peri-urban areas of Faisalabad. Pak. J. Agric. Sci. 45 (2):206-208.

	• Tariq, M., M.I.Mustafa, A.Iqbal and H.Nawaz.2008.Milk marketing and value chain constraints. Pak.J.Agric.Sci.45 (2):195-200. • Iqbal, A., Bakht B.Khan, M.Tariq and M.A.Mirza.2008.Goat-A potential dairy animal: Present and future prospects.Pak.J.Agric.Sci.45 (2):227-230. • Din, M.M., N.Ahmad, A.Iqbal and M.Abdullah.2006.Evaluation of different formulas for weight estimation in Beetal,Teddi and crossbred(Beetal x Teddi) goats.J.Anim.Plant Sci.16(3-4):7-74. • Akbar.I.R, A. Shakoor, A.Iqbal, S.U. Rahman, Q. Azeez and U. Waheed.2005.Evaluation of • commercial homoeopathic and allopathic preparations for their effect on somatic cell counts and milk composition of Nili-Ravi buffaloes. International J .Agric.Bio.Vol.7 (1): 94-96. • Noreen,S.,J.I.Sultan,A.Iqbal and F. Ahmad. 2002. Proximate composition, amino acid profile, protein solubility test and in vitro organic matter degradability of various feed ingredients. J.Animal and Plant Sci.Vol. 12 (4): 130-134. • Khan, B.B and A.Iqbal.2001. Production and composition of camel milk-A Review. Pak. J. Agri.Sci. Vol. 38 (3-4): 63-68. • Iqbal .A and B. B Khan. 2001. Feeding behaviour of camel. A Review. Pak. J. Agri.Sci Vol. 38 (3-4): 58-63 • Iqbal, A., B.B Khan, M. Younas, R.A Gill and A.W. Jasra.2001. Comparative growth performance of camel calves kept under farm/farmer's conditions. Pak. J. Agri.Sci. Vol. 38 (1-2): 16-18. • Iqbal,A.,and R.A.Gill.2000.Studies on some of the productive, reproductive and behavioural aspects of camel in Pakistan. Pak. J. Agri.Sci. Vol. 37 (3-4): 200. • Iqbal, A., M. S.Khan, M. Abdullah and S.H. Raza.2000.A study of some factors contributing to agricultural production in rural Azad Jammu and Kashmir.J.Animal and Plant Sci. Vol. 10 (3): 34-36. • Ashiq,M., A.R. Abid, A. Iqbal and M. Anwar.2000.A study of broiler litter as protein supplement for fattening Salt range lambs. J. Anim. Health and Prod. Vol. 20 (1-2): 28-30. • Khan,M.S.,A.Iqbal,M.Abdullah and Gulraiz Ahmad.1999.Livestock production profile in tehsil, Rawalakot, district Poonch, Azad Jammu and Kashmir. J.Animal and Plant Sci. Vol.9 (1-2): 15-16. • Bilal, M.Q., S.H. Raza, M. Lateef and A. Iqbal.1997.Study on the cruelty in farm animals in Faisalabad city. J.Animal and Plant Sci.Vol. 7 (3-4): 65-66. • Khan,B.B., M. Lateef, M. Qamar Bilal, A.Iqbal and S.H.Raza. 1996. A study of some of the activity patterns of (<i>Camelus dromedarius</i>) maintained in Thal area of Punjab, Pakistan. Pak.J. Agri.Sci. Vol.33:69-72. • Ismail,M.,M.Tufail,A.Iqbal, M. Anwar and M. Abdullah. 1996. Comparative feeding of maize and sorghum fodders for dry buffalo-heifers.J.Animal and Plant Sci. Vol. 6 (3-1): 93-95. • Gill,A.A.,M.Riaz,R.AGill,S.H.Hanjra and A.Iqbal.1995. Effect of mandatory feeding of atriplex on crude fibre utilization and blood biochemistry of Teddy goats. Pak. J. Agri.Sci. Vol. 32 (2-3): 198-200. • Ahmad,N., M. Tufail, A.Iqbal and M.Abdullah. 1995. Comparative study on the effect of feeding Ipil Ipil (<i>Leucaena leucocephala</i>) and berseem (<i>Trifolium alexandrium</i>). J.Animal and Plant Sci. Vol. 5 (1-2): 15-17. • Akhtar,M.J.,M.Yaqoob,A. Iqbal, M.I Mustafa, M. Anwar and G. Mohyuddin. 1994. A study on hematological picture of Sahiwal and crossbred calves as
--	---

	affected by different housing conditions. Sarhad. J.Agric.Vol. X (1):27-30. • Gill,A.A., M.Riaz,S.H.Hanjra, R.AGill and A.Iqbal. 1994. Haematological picture of Teddy goats as affected by atriplex feeding. Pak. J. Agri. Vol. 31 (4): 314-316. • Jan,A.U., S.H. Hanjra, A. Iqbal, M. Anwar and R.A Gill. 1995. Production and utilization of milk in and around Bannu city. Sarhad J. Agri. Vol. XI (3): 269-272. • Shah, M.A., A. R. Barque,A.Iqbal and M.Athar. 1993. Preparation of buffalo dung wastelage and its utilization as protein source for sheep. Pak. J. Sci.Ind.Res.Vol.36 (10): 440-442. • Khan,B.B., M. Anwar, M. Q. Bilal and A. Iqbal. 1993. Animal welfare.I. Types and extent of cruelties commonly inflicted on farm animals. Pak. J. Agri Sci. Vol. 30 (3): 264-266. • Bilal,M.Q., B.B Khan, M. Lateef, A. Iqbal, M. Yaqoob and M.E. Babar.1993. Extent of and preference for animals slaughtered of skins/hides. Pak. J. Agri Sci. Vol. 30 (1): 13-16. • Khan,B.B., M. Qamar Bilal, S.H Hanjra, A.R.Barque, A. Iqbal and M. Yaqoob. 1992. I. Extent of and preference for animals.Pak.J.Agric.Sci.Vol.29 (3):218-222. • Anwar, M., B.B.Khan, R.A.Gill,M.A.Khan and A. Iqbal. 1991. Effect of silage feeding on milk production and composition in Nili-Ravi buffaloes. Pak. J. Agri Sci. Vol. 28 (1): 13-15. • M. S.Qureshi, Basharat Ahmad, M. A.Anjum, S. Hassan Raza and A. Iqbal. 1990. Use of daincha seeds in broiler rations. Sarhad J. Agri. Vol.6 (1): 9-11. • Karim,A., M. Tufail, S. Hayat, S.H Raza and A. Iqbal. 1990. Trends in milk production and consumption in and around Dera Ismail Khan.Gomal Univ. J. Res. Vol. 10 (2): 97-101. • Ahmad,F, S.H. Hanjra, S.H. Raza, A.Iqbal and K.Z. Gondal.1990. Milk yield and composition as affected by different levels of concentrates. Pak. Vet. J. Vol. 10 (3):138-140. • International • Raziq,A.,K.Verrier,M.Younas,S.Khan,A.Iqbal and M.S.Khan.2011.Milk composition in the Kohi camel of mountainous Balochistan, Pakistan.J.Camel Sci.4:49-62. • Cheema, U.B., M.Younas, J.I.Sultan, A.Iqbal, M.Tariq and A.Waheed.2011.Antimicroboal peptides: An alternative of antibiotics in ruminants.Adv.Agric.Biotech.2:15-21. • Raziq,A.,K.Verrier,M.Younas,S.Khan,A.Iqbal and M.S.Khan.2011.Milk composition in the Kohi camel of mountainous Balochistan, Pakistan.J.Camel Sci.4:49-62. Contribution to edited volumes 1. Contributed a chapter on "Handling and restraint of farm animals" in a book titled "ANIMAL HUSBANDRY", 1994. National Book Foundation, Islamabad. 2. Contributed a chapter "Achievements of research in the field of camelids" in WAAP Book the Year-2006.Wageningen Academic Publishers. Papers published in refereed conference proceedings • Raza, S.H, M. Riaz and A. Iqbal. 2006. Milk productivity: A Changing Scenario for Future Investment. Proceedings International Conference on Productivity and Growth in Agriculture: Strategies and Interventions (6-7 December) held at University of Agriculture, Faisalabad.
--	--

	• Younas, M: A. Iqbal, M. E Babar and M. Yaqoob. 2003. Salient findings of graduate research on goat breeding and management at University of Agriculture, Faisalabad. Proceedings International Seminar on goat production in SAARC countries (22-24 April) held at PARC, Islamabad. • Iqbal, A. Socio-economic perspective of camel in Pakistan. Full length paper accepted for International Interdisciplinary Workshop on Camels in Asia and North Africa, held in Vienna, Austria (5-7 October, 2010). In press. • Iqbal, A., and B.B.Khan. Camel culture in Pakistan. Full length paper accepted for SOAS Camel Conference, London, UK (24-25 May, 2011). In press. • Wynn, P.C., H. Warriach, A. Morgan, D.M. McGill, S. Hanif, M. Sarwar, A. Iqbal, P.A. Sheehy and R.D. Bush. 2008. Perinatal nutrition of the calf and its consequences for life long productivity. Paper presented/ Appeared as full length paper. Proceedings International Symposium on Recent Advances in Animal Nutrition held at International Convention Centre, Hanoi, Vietnam (Sep 23, 2008). • Wynn, P.C., A. Iqbal, L. Riley, Z. Muhammad, P.A. Williamson, H. Raadsma, K.R. Nicholas and P.A. Sheehy. 2006. Exploiting mammalian lactational strategies to boost commercial milk production. Full length paper published in the Proceedings of the 12th AAAP Animal Science Congress (September, 18-22, 2006) Bexco, Busan, Korea. • McGill, D., K. Fullard, P. Celi, P. Thompson, E. Hall, A. Iqbal, Wynn, P.C and H.W. Raadsma. 2006. Lactation curve characteristics and persistency of lactation in dairy ewes milked once a day: Preliminary observations. Paper presented at Annual Meeting of Australian Society of Animal Production. Papers or Extended Abstracts: Not Applicable Articles published in popular press English 1. Vitamin deficiencies in poultry feeds. "The Farm Scientists", Dec. 1990. 2. Importance of colostrum in calf production. Progressive Farming Vol. 1. Jan-Feb. 1991, PARC, Islamabad. 3. Criteria for acceptable milk for human consumption. Progressive Farming Vol. 1. Jan, 1991, PARC, Islamabad. 4. PC. A giant step towards modernization (Part I). Pak Livestock and Poultry Journal No. 7, January 1991: 1-3. 5. PC. A giant step towards modernization (Part II). Pak Livestock and Poultry Journal. Feb-July, 1991: 8-13. 6. Housing of dairy cattle under warm weather conditions. Agro Vet. News (AVN) Dec. 1991. x 7. Plant toxins and their effects on livestock. Agro. Vet. News (AVN) Dec. 1991. 8. Fodder reservation techniques. Agro. Vet. News (AVN) April, 1992. 9. Metabolic disorders in pre and post parturient ruminants. Agro Vet. News (AVN) April, 1992. 10. Hay and Straw, their preparation and importance as dry roughages. Progressive Farming Vol. 12, No. 3, May-June, 1992, PARC, Islamabad. 11. Calf nutrition: A practical approach. Progressive Farming, Vol. 12, No. 3 May-June, 1992, PARC, Islamabad. URDU 1. Use of urea in animal feed. "Nidai Kissan" July, 1989. 2. Disease prevention in animal through better management "Zari Digest" 24(1), 1990. 3. Livestock Industry: Problems and their possible solutions. Zari Digest 24(3):1990.
--	--

	4. Few important principles for raising male birds. Pak. Poultry Vol. 6(11):1990. 5. Cheese making "Zari Digest" 24(4):1991. 6. Artificial insemination in poultry. "Zari Digest" 23(2):1992. 7. Disease prevention in poultry. "Zari Digest" 23(2):1992. 8. Mastitis and its prevention. "Zari Digest" 27(3):1993. 9. Dairy Farming: Need of the time. "Zari Digest" 26(4):1993. 10. Supply of quality and cheap meat. "Zari Digest" 26(4):1993. 11. Importance of minerals in dairy calf nutrition. "Zari Digest" 29(1):1995. 12. Role of animal protein in human life. "Zari Digest", March-June, 1996. 13. Nitrate poisoning, its effect and its management in animals. "Zari Digest" June 1997. 14. Sheep and goat production (Bheren aur Bakrian palna) Special publication "Zari Digest", 1999. 15. Animal Husbandry (Amouri Haivanat) Special publication "Zari Digest" 1999. 16. High producing dairy animals management: Modern challenges. (Kissan Time: 58-60.Sep.2008). 17. Protection measures from detrimental effects of radioactivity from agricultural view point.Zari Digest (June-Sep, 2008). 18. Milk born diseases (Zari Digest, 2009). 19. Production and management of camels using modern husbandry practices (Zari Digest-2010, Special Issue-UAF). 20. Animal Welfare: An important but neglected aspect of lactating animals (Zari Digest Golden Jubilee No.2011). 21. Camel—A Unique Animal of Desert (Kissan World—January, 2011). 22. Behaviour of milch animals-A profitable perspective.Zari Digest, April.2011.
	Articles appearing in house organs: Not Applicable Research reports submitted to sponsors: Not Applicable Articles published in non-refereed journals: Not Applicable
	Manuscripts submitted for publication <i>Prospects and limitaions of dairying in Gujranwala district (Punjab—Pakistan).</i> Muhammad Arif, Arshad Iqbal, Muhammad Younas, Bakht Baidar Khan, Muhammad Sarwar and Sohail Ahmad (Accepted for publication.Journal of Animal and Plant Sciences).
Research Grants and Contracts	1. A study on the effect of castration on the weight gain and carcass yield of castrated lambs (Rs.122000/-, 1994, Promotion of Research, UAF). 2. Weight gain in Beetal goats under two different feeding systems (Rs.70, 000/- , 2003-04, Promotion of Research, University of Agriculture, Faisalabad). 3. Economical beef production from buffalo and cattle calves kept under two different managerial systems (Rs.28800/-, 1995, Promotion of Research, University of Agriculture, Faisalabad). 4. The prospects of use of camel as beef animal (Rs.66000/- , 2003, Promotion of Research, University of Agriculture, Faisalabad).
Selected Professional Presentations	1. Dairying in Pakistan (13 April, 2006, Faculty of Veterinary Science, The University of Sydney, Australia). 2. The Camel-A unique but neglected animal species (27 April, 2006, Faculty of Veterinary Science, The University of Sydney, Australia). 3. Dairy Farming-Issues and Problems. College of Agriculture, Sargodha (GC University) during a training workshop organized by ASF. 4. Camel Production Management---Outreach Activity (14-15 September, 2011) held at Camel Breeding and Research Station, Rakh Mahni, District Bhakkar (Punjab-Pakistan).

Name	Dr. Tanveer Ahmad			
Personal	Associate Professor, Animal Nutrition Faculty of Veterinary and Animal Sciences, PMAS- Arid Agriculture University, Rawalpindi. +92-333-5103351 tanveer.ahmad@uaar.edu.pk			
Experience	Date	Title	Institution	
	1.	Sept-1998 to 02-Feb-1999	Veterinary Officer, Govt. Livestock Experiment Station, Chak Katora, Hasilpur, Distt. Bahawalpur, under the Directorate of Livestock Farms, Punjab, Lahore.	
	2.	December, 1999-to date, Worked on different position at PMAS-Arid Agriculture University, Rawalpindi.		
	•	Lecturer (Animal Sciences): From 11-12-1999 to 22-9-2006.		
	•	Assistant Professor (Animal Sciences): From 23-9-2006 to 28-8-2011.		
	•	Associate Professor (Animal Nutrition): From 29-8-2011 to to-date.		
Honor and Awards	• STAR LAUREATE Award 2003 by South Asian Publications. • STAR MAN Award 2003 by South Asian Publications. • Awarded Indigenous Ph.D. Scholarship (2003) by Higher Education Commission of Pakistan. • Approved Ph.D. supervisor by Higher Education Commission, Pakistan. • Awarded Foreign Post-Doc Fellowship for year 2006-07 by Higher Education Commission of Pakistan. (One year post doc training from 15-02-2007 to 14-02-2007)			
Memberships	Pakistan Veterinary Medical Council			
Graduate Students	Sr.No.	Students name	Year	Degree
Postdoc,				
Undergraduate	As supervisor			
Students	1	Masood Anwar	2004	M.Sc.(Hons) Poultry
Honour Students (co-supervisor)		Zuberi (01-arid-1604).		Husbandry
	As member			
	1	Khushbakht Yasmeen (00-arid-1032)	2002	M.Sc. (Zoology)
	2	Imran Shahzad Mirza (00-arid-949)	2003	M.Sc. Biochemistry
	3	M. Zahid Naseem (01-arid-1606)	2003	M.Sc. (Hons) Poultry Husbandry
	4	Syed Mudassir Abbas (01-arid-1555)	2003	M.Sc. (Zoology)
	5	Raazia Riaz (97-arid-131)	2003	M.Sc. (Hons) Agricultural Economic
	6	M. Shahbaz Anjum (01-arid-1605)	2004	M.Sc. (Hons) Poultry Husbandry
	7	Fareeha Mushtaq (02-arid-328)	2004	M.Sc. (Zoology)
	8	Tehseen Khalid (02-arid-336),	2004	M.Sc. (Zoology)
	9	Hafsa Afzal (03-arid 765)	2005	M.Sc. (Zoology)

	10	Farheen Tasneem Ahmed (03-arid-754)	2005	M.Sc. (Zoology)
	11	Javed iqbal (06-arid-264)	2008	M.Sc. (Hons) Poultry Sciences
	12	Asif Zahoor (06-arid-267)	2008	M.Sc. (Hons) Poult Sciences
	13	Umar Nasir (06-arid-268)	2008	M.Sc. (Hons) Poult Sciences
	14	Majid Noor (06-arid-265)	2008	M.Sc. (Hons) Poult Sciences
	15	Durr-e-Shahwar (05-arid-371)	2009	M.Phil (Wildlife Mng)
	16	Mehtabuddin (07-arid-301)	2009	M.Sc. (Hons) Poult Sciences
	17	Fahad Sheraz (08-arid-736)	2010	M.Sc. (Hons) Agronomy
	18	Malik Burhan Yousaf Latif (08-arid 780)	2010	M.Sc. (Hons) Poult Sciences
	19	Farhan Farooq (10-arid-915)	In prog.	M.Sc. (Hons) Poult Sciences
	20	Nafeesa Qudsia Hanif (98-arid-216)	2008	Ph.D. Biochemistry
	21	Tabinda Khawaja (07-arid-298)	In Prog.	Ph.D. Poultry Science
	22	Aqeel Ahmad	In Prog.	Ph.D. Poultry Science
	23	Hira Malik 10-arid-1277	In Progress 2012	M.Sc. Environ. Sciences
	24	Javed Iqbal (06-arid-264)	In progress 2012	Ph.D. Poultry Sciences
Service Activity	Teaching and research Teaching The main activities include teaching and research at graduate and post graduate level. The main courses offered includes: Animal Husbandry, Livestock Housing and Management, Principles of Animal Nutrition, Nutrient Requirements of Farm Animals and Poultry, Poultry and Ruminant Nutrition, and Feed Evaluation, Formulation and Processing Technology. Research Major area of research is poultry nutrition, with emphasis on enzyme production and application in poultry diets, heat stress amelioration through dietary electrolyte manipulation in broilers and amino acid metabolism, being studied in chickens using the Indicator Amino Acid Oxidation method. These three areas are of great concern in the present era as poultry industry is looking for alternatives to antibiotics, tropical regions are looking for ways to get maximum productivity during hot summer months, while rapid determination of amino acid requirements and bioavailability is required for fine tune feeding. 1. The arid and semi arid regions of the Pakistan are relying on small ruminants (SR) and camel production. Being animal nutritionist, the evaluation of feeding and management			

	systems of SR is underway to design future strategies for food safety and ensuring sustainable urban food supply through proper feeding and management of SR in the region. In addition camel nutrition is also under consideration. 2. Future research will continue in these areas, as well as developing a research program which is responsive to livestock and poultry industry concerns.
Brief statement of research interest	• Animal Nutrition (Enzyme Production and its application in poultry. Electrolytes feeding in broilers. Amino acid nutrition of broilers). • Animal Welfare (Feeding strategies for ameliorating the adverse effect of hot season) • Feeding systems (Evaluation of small ruminants feeding and management systems in semi-arid regions of Pakistan).
Publications Research Grants and Contracts.	3. Zahoor, A., A. A. Mian, T. Ahmad, S. Nadeem, A. Rehman and M. Akram. 2011. Effect of Intermittent Lighting on Different Production Traits of Japanese Quail. <i>In Proc. 3rd Intl. Conf. on Sustainable Animal Agriculture for Developing Countries</i>, held in Thailand (26-29 July 2011). Vol.III-Full Papers. Page 626-630. 4. Ahmad, T., T. Mushtaq, M. A. Khan, M. E. Babar, M. Yousaf, Zia-ul-Hassan and Z. Kamran. 2009. Influence of varying dietary electrolyte balance on broiler performance under tropical summer conditions. <i>Journal of Animal Physiology and Animal Nutrition</i>. 93:613-621. DOI: 10.1111/j.1439-0396.2008. 00840.x (1.171). 5. Mushtaq, T., M. Sarwar, G. Ahmad, M. A. Mirza, T. Ahmad, M. Athar, M. M. H. Mushtaq and U. Noreen. 2009. Influence of prepress solvent extracted cottonseed meal supplemented with ,digestibility ,ysine on performanceexogenous enzyme and digestible l carcass and immunity responses of broilers chickens .<i>Journal of Animal Physiology and Animal Nutrition</i>. 93:253-262 (1.171). DOI. 10.1111/j.1439-0396.2008.00813.x 6. Ahmad, T., T. Khalid, T. Mushtaq, M. A. Mirza, A. Nadeem, M. E. Babar and G. Ahmad. 2008. Effect of potassium chloride supplementation in drinking water on broiler performance under heat stress conditions. <i>Poultry Science</i> 87:1276-1280 (1.668). doi:10.3382/ps.2007-00299. 7. Hanif, N. Q., G.Muhammad, M. Siddique, A. Khanum, T. Ahmad, J. A. Gadahai and G. Kaukab. 2008. Clinico-pathomorphological, serum biochemical and histological studies in broilers fed ochratoxin A and a toxin deactivator (Mycofix® PlusMTV INSIDE). <i>British Poultry Science</i>. 49:632-642 (1.135). 8. Mushtaq, T., M. Aslam Mirza, M. Athar, D. M. Hooge, T. Ahmad, G. Ahmad, M. M. H. Mushtaq, and U. Noreen. 2007. Dietary Sodium and Chloride for twenty-nine to forty-two-day-old broiler chickens at constant electrolyte balance under subtropical summer Conditions. <i>J. Applied Poultry Research</i>. 16:161-170 (0.402). 9. Khan, M.A., M. Sarwar, T. Ahmad, S.A. Bhatti, M. Nisa, Wang-Shik Lee. 2007. Influence of organic acids or fermentable carbohydrates on feeding value of urea treated wheat straw for <i>Nili-Ravi</i> buffalo bulls fed ad libitum diets. <i>Italian J Anim. Sci</i>. 6 (Suppl. 2): 508-511. (0.132) 10. Ahmad, T. and M. Sarwar. 2006. Dietary electrolyte balance: implications in heat stressed broilers-A review. <i>World's Poultry Science Journal</i>. 62:638-653. DOI: 10.1079/WPS200611. (1.398) 11. Ahmad, T., Mahr-un-Nisa, Tariq Mushtaq, M. Aslam Mirza, D. M. Hooge and Muhammad Sarwar. 2006. Effect of different non-chloride sodium sources on the performance of heat stressed broiler chickens. <i>British Poultry Science</i>. 47:249-256 (1.135) 12. T. Mushtaq, M. Sarwar, H. Nawaz, M. Aslam Mirza and T. Ahmad. 2005. Effect and Interactions of Sodium and Chloride on Broiler Starter Performance (One-to-Twenty-eight days) under Subtropical Summer Condition. <i>Poultry Science</i>. 84:1716-1722. (1.747)

13. Ahmad, T., M. Sarwar, Mahr-un-Nisa, Ahsan-ul-Haq and Zia-ul-Hasan. 2005. Influence of varying sources of dietary electrolytes on the performance of broilers reared in a high temperature environment. *Animal Feed Science and Technology*. 120:277-298. (1.668)
14. Ahmad, T., Z. Aslam and S. Rasool. 2004. Reducing fiber content of sunflower oil meal through treatment of enzymes produced from *Arachnoitus sp.* *Animal Science Journal*. 75 (3): 231-235. (0.713)
15. Ahmad, T., S. Rasool, M. Sarwar, Ahsal-ul-Haq and Zia-ul-Hasan. 2000. Effect of microbial phytase produced from a fungus *Aspergillus niger* on bioavailability of phosphorus and calcium in broiler chickens. *Animal Feed Science and Technology*. 83:103-114. (1.882)
16. Ahmad, T., S.H. Raza, S. Rasool and A. Waheed. 2000. Technique for phytase enzyme production from *Aspergillus niger* and its efficacy for *in vitro* and *in vivo* dephosphorylation of corn and soybean meal. *Asian-Aus. J. Anim. Sci.*, 13(B):180-183. (0.857)
17. Rasool, S., S.H. Raza and T. Ahmad. 2000. Blood composition of sheep fed silage containing poultry litter. *Asian-Aus. J. Anim. Sci.*, 13:220. (0.857)
- Conf. Proceedings/Posters/Articles, etc.**
1. Zahoor, A., A. A. Mian, T. Ahmad, A. Rehman, S. Nadeem and M. Akram. 2011. Effect of Intermittent Lighting on Different Production Traits of Japanese Quail. *Presented in 3rd International Conference on Sustainable Animal Agriculture for Developing Countries held in Thailand (26-29 July 2011).*
2. Ahmad, T., M. Sarwar, Mahr-Un-Nisa, Ahsan-Ul-Haq, J. Ansari and Farooq Iqbal. 2010. Dietary electrolyte balance responses in broilers reared in moderately high environmental temperature and high humidity. *Advances in Animal Biosciences*. 1:418-419 doi:10.1017/S2040470010000452
3. Ahmad, T., Nemat Ullah, Kashif Ishaq, S. Anum Hadi and M. M. Fahd Qadir. 2010. Small ruminant feeding systems in semi-arid land of Punjab, Pakistan: status and prospectus for improvement. *Advances in Animal Biosciences*. 1:485-486 doi:10.1017/S2040470010001044
4. Ahmad, G., T. Mushtaq, M. A. Mirza, and T. Ahmad. 2007. Response of growing broilers to digestible lysine and metabolizable energy levels in heat stress. Oral presentation *In Proc. Joint annual meeting, Poult. Sci. Assoc. San Antonio, TX, USA. July 8-12, 2007. Poult. Sci. (Suppl 1; Abst 310)* 86: 219-220. (1.747)
5. Khan, M.A., M. Sarwar, T. Ahmad, S.A. Bhatti, M. Nisa, Wang-Shik Lee. 2007. Influence of organic acids or fermentable carbohydrates on feeding value of urea treated wheat straw for *Nili-Ravi* buffalo bulls fed ad libitum diets. *In: Proc. VIII World Buffalo congress, Caserta, Italy, October 19-22, 2007.*
6. Ahmad T., M. Sarwar, M. Nisa, M. A. Khan and Z. Hasan. 2006. Influence of varying dietary electrolyte balance (DEB) on performance of broilers during summer. *In Proc. 12th AAAP Congress (Page 213), held at BEXCO Busan, South Korea (September 18-22, 2006).*
7. Ahmad, T and M. Sarwar. 2005. Dietary electrolytes combat heat stress. *Feed Mix*. 13:15-17
8. Ahmad T, M. Sarwar, T. Mushtaq, M. A. Mirza and D. M. Hooge. 2005. Effect of different non-chloride sodium sources on the performance of heat stressed broiler chickens. *In: 4th All Africa Conference on Animal Agriculture and the 31st Annual Meeting of the Tanzania Society for Animal Production (TSAP). Arusha, Tanzania (September 20-24, 2005). Poster.*
9. Ahmad, T., S. Rasool, A. Waheed, Z. Idrees. 2000. Technique for phytase enzyme production from *Aspergillus niger* and its efficacy for dephosphorylation of corn and

	soybean meal. <i>In Proc. XXI WPC-2000</i> , 20-24 August 2000. Montreal, Canada. (Poster). 10. Rasool, S., S.H..Raza and T. Ahmad. 1999. Rumen metabolism of sheep fed silage containing poultry litter. <i>In Silage making in the tropics with particular emphasis on smallholders: Proceedings of the FAO Electronic Conference on Tropical Silage</i> , held from 1 Sept.- 15 Dec. 1999. Ed. L.'t Mannetje. Pp 99-102.				
	Research Grants				
	Project title	Rs. (Million)	Funding Agency	Duration (Years)	As PI/CoPI
	Improving Broiler Performance and Survival Rate at High Temperature by Altering Dietary Electrolyte Balance.	0.096	University of Arid Agriculture, Rawalpindi	1 Year	Principal investigator
	Evaluation of Small Ruminants Feeding and Management Systems around Rawalpindi and Islamabad.	0.058	PMAS- Arid Agric.,Univ., Rawalpindi	1Year	Principal investigator
	Influence of Naringenin on performance, meat quality and antioxidant status of broilers	0.498	Higher Education Commission, Pak.	09 Months	Co. P.I.
	Evaluation of growth and health promoting activities of formononetin as non-antibiotic feed additive in chickens	0.151	PMAS- Arid Agric.,Univ., Rawalpindi	1Year	Co. P.I.
	Immunological changes in laying hens during the induced molt period and its effect on subsequent performance and health	1.622	Pak. Sci. Foundation, Isb.	2 Years	Submitted as Co. P.I.
Other Research or Creative Accomplishments	• Nil				
Selected Professional Presentations	Ahmad, T. 2002. Production of crude phytase enzyme from <i>Aspergillus niger</i> , and in-vitro efficacy in dephosphorylation of maize and soyabean meal. <i>Proc. (Section: Anim. Sci.) 33rd All Pak. Sci. Conf.</i> held in 25th to 28th Dec., 2002, at Univ. Agric., Faisalabad, Pakistan. Ahmad, T and D. Korver. 2007. Determining Methionine Requirement of Broiler Chicks by Indicator Amino Acid Technique. Oral Presentation. PRC, Annual General Meeting. 5th June 2007. PRC, Univ. of Alberta, Edmonton, Canada. K. Ishaq, N. Ullah, T. Ahmad and M. Yaqoob. 2009. Incidence of Reproductive Disorders in Cattle and Buffalo around Islamabad and Rawalpindi. Poster In: 6th Asian Buffalo Congress, 27-30th October 2009. Held at Hotel Pearl Continental Lahore, Pakistan.				

Name	Dr. Muhammad Farooq Iqbal		
Personal	PMAS- Arid Agriculture University, Rawalpindi +0092-31288836 mfmalik@uaar.edu.pk		
Experience	Date, Aug, 2009--Present	Title, Assistant Professor, PMAS-	Institution. Arid Agriculture University, Rawalpindi
Honor and Awards	Overseas Scholarship from Higher Education Commission		
Memberships	PVMC		
Graduate Students Postdocs Undergraduate Students	List supervision of graduate students, postdocs and undergraduate honors theses showing:		
Honor Students	Years 2009-2011	Degree M.Sc (hons) PS	Name Raja Noman
Services Activity	Teaching and research Teaching AN-102 (Principles of Animal Nutrition) AN-201 (Animal Feeds and Fodders) AN-202 (Nutrient Requirements of Livestock and Poultry) AN-301 (Feed Evaluation, Formulation & Processing Technology) AS-401 (Animal Husbandry) PS-704 (Poultry Feeding) PS-707 (Poultry Health and Hygiene) Research PMAS-Arid Agriculture University, Rawalpindi funded Research Project titled “Evaluation of growth and health promoting activities of quercetin and formononetin as replacer of feed antibiotics” was completed in 2010. A project titled “Influence of Naringenin on performance, meat quality and antioxidant status of broilers” under the HEC scheme “was completed in 2011. A project titled ‘Physicochemical and hygienic quality of the raw milk and tetra pack milk available at various areas in Rawalpindi’ is in progress.		
Brief Statement of Research Interest	Animal Nutrition (Evaluation of Non-nutritive Feed Additives and their use as functional food ingredients, Modulation of feed additives bioavailability at the level of intestinal metabolism for better performance, Interaction of intestinal flora and that of the feed, Immunological aspects of animal nutrition) Molecular Nutrition (Nutrigenomics) Environmental protection (Feeding strategies for environmental protection)		
Publications	“in Press;” Nil Articles published by refereed journals. T. Ahmad, M. Sarwar, Mahr-Un-Nisa, Ahsan-Ul-Haq, J. Ansari and b 2010. Dietary electrolyte balance responses in broilers reared in moderately high environmental temperature and high humidity. Adv Anim Biosci. 1:418-419 M. M. Hashim, D. Mingsheng, M. F. Iqbal, L. Wang, C. Xiaohong. 2011. Ginger protease used as coagulant enhances the proteolysis and sensory quality of Peshawari cheese compared to calf rennet. Dairy Sci & Technol. 91: 431-440 M.M. Hashim, D. Mingsheng , M.F. Iqbal, C. Xiaohong . 2011. Ginger rhizome as a		

	potential source of milk coagulating cysteine protease. <i>Phytochemistry</i>. 72(6):458-64 Books. Khan, R.N.A., M. F. Iqbal, N. Mukhtar. 2011. <i>Formononetin and Broiler Performance</i>. 1st ed. Lambert Academic Publishing, Germany. Scholarly and /or creative activity published through a refereed electronic venue. Nil Contribution to edited volumes. Nil Papers published in refereed conference proceeding. Hashim, M. M., M. F. Iqbal, L. Wang, C. Xiaohong, D. Mingsheng. 2011. Impact of Processing Conditions on the Milk Clotting Activity of Crude Protease Extracted from Chinese Ginger. <i>IPCBEE</i>. 9: 327-331 Paper or extended abstracts published in conference proceeding. (refereed on the basis of abstract) Nil Articles published in popular press. Nil Articles appearing in in-house organs. Nil Research reports submitted to sponsors. 1: Evaluation of growth and health promoting activities of quercetin and formononetin as replacer of feed antibiotics” submitted to PMAS-Arid Agriculture University, Rawalpindi. 2: “Influence of Naringenin on performance, meat quality and antioxidant status of broilers” submitted to the HEC Articles published in non-refereed journals. Nil Manuscripts submitted for publication. (Include where and when submitted). Nil
Research Grants and Contracts.	Completed Project 1: Dec 2009-Dec 2010 Funding agency: PMAS-Arid Agriculture University, Rawalpindi Project title “Evaluation of growth and health promoting activities of quercetin and formononetin as replacer of feed antibiotics” Amount: Rs 138000/= Project 2: July 2010-June 2011 Funding agency: HEC Project title “Influence of Naringenin on performance, meat quality and antioxidant status of broilers” Amount: Rs 498000/= In Progress Funding agency: PMAS-Arid Agriculture University, Rawalpindi Project title “Physicochemical and hygienic quality of the raw milk and tetra pack milk available at various areas in Rawalpindi” Amount: Rs 105000/= In review Funding agency: PSF-NSLP Project title: “Documentation and screening of locally used herbal feed additives for quality milk production in dairy animals” Amount: Rs 3.06 million

Name	Dr. Muhammad Fiaz			
Personal	Assistant Professor, Department of Livestock Production and Management, Faculty of Veterinary & Animal Sciences, PMAS- Arid Agriculture University Rawalpindi. Cell No. 0300- 5252384 Email: drfiazlm@gmail.com : dr.fiaz@uaar.edu.pk			
Experience	Date: (From To)	Designation	Institute	
	17.01. 2012 to date	Assistant Professor	PMAS-Arid Agri Uni. Rawalpindi	
	25. 08. 2011 to 16-01-12	Research Officer	Barani Livestock Production Research Institute Kherimurat	
	3.08. 2011 to 24.08.2011	Assistant Research officer	Barani Livestock Production Research Institute Kherimurat	
	15.10. 10 to 2.8.11	Veterinary officer	Buffalo research Institute, Pattoki	
	15.10. 2006 to 14.10.10	HEC/PhD Scholar	University of Veterinary and Animal Sciences Lahore	
	Dec 2004 to 14.10. 2006	VO/Deputy Director (additional)	SPU Kherimurat	
	10.5.2001 to Nov 04	Veterinary officer	SPU Kherimurat	
	8.6.1998 to 9.5.2001	Veterinary officer	Livestock experiment Station Rakh Ghulaman District Bhakkar	
Jan 1997 to May 98	Inchraige poultry farm	SB poultry (Pvt.) Islamabad		
Honor and Awards	• Stood 3rd in B.Sc.(Hons.) Animal Husbandry degree exam during 1996 , Faculty of Animal Husbandry ,University of Agriculture, Faisalabad • Stood first in the discipline of Livestock Management M.Sc.(Hons.) Department of Agriculture Sciences Allama Iqbal Open University, Islamabad. • Indigenous HEC scholarship for PhD program at University of veterinary and Animal Sciences Lahore			
Memberships	Pakistan Veterinary Medical Council (Life time membership)			
Graduate Students Postdocs Undergraduate Students Honor Students	Year	Student Degree	Name	Students Institute
	2013	PhD Animal Nutrition	Saeed Ahmad	Uni. Veterinary Animal Sciences Lahore
	2013	M. Sc. (Hons) Livestock Management	Ijaz Ahmad	Allam Iqbal Open University Islamabad
Services Activity	List university and public services activities.			
Brief Statement of Research Interest	May be as brief as a sentence or contain additional details up to one page in length.			
Publications	Effect of different dietary energy levels on milk production in lactating Nili-Ravi buffalo	Journal of Animal & Plant Sciences	Full length paper 23(Sup 1): 13-16	2013

	Evaluating varying dietary energy levels for optimum growth and early puberty in Sahiwal heifers	Pakistan Journal of Zoology	Full length paper 44(3), pp. 625-634	2012					
	Effect of varying dietary energy levels during last trimester of pregnancy on subsequent first lactation performance in Sahiwal heifers	Tropical Animal Health and Production (Impact Factor journal)	Full length paper 44(5):975-81	2011					
	Better cattle feeding and food security	The Nation...daily news paper (Money plus magazine)	Monday 27.9.2010	2010					
	Feeding management for optimum growth and early puberty in Sahiwal heifers	Asian Australasian Animal Production annual meeting	Abstarct	2010					
	Evaluation of Semen Quality of Holstein Friesian and Jersey Bulls Maintained under Subtropical Environment	Pakistan veterinary Journal	Full length paper 30(2): 75-78	2010					
	Effect of varying dietary energy levels during last trimester of pregnancy on the performance of Sahiwal heifers.	International Animal Agriculture	Abstract Pp 859	2010					
	Comparative performance of Calves of Buffalo and different breeds of Cattle on feed lot fattening	Pakistan Journal of Zoology	Full length paper Pp 401-407	2009					
Research Grants and Contracts.	Entries should include: <table><tr><td>Date</td><td>Title</td><td>Agency/Organization</td><td>Total Awards</td><td>Amount</td></tr></table> Segment the list under following heading: - Completed - Funded and in progress - In review				Date	Title	Agency/Organization	Total Awards	Amount
Date	Title	Agency/Organization	Total Awards	Amount					
Other Research or Creative Accomplishments	List patents, software, new products developed, etc.								
Selected Professional Presentations									

Name	Dr. Muhammad Moaen-ud-Din																							
Personal	Deptt. of Livestock Production & Management, Faculty of Veterinary & Animal Science, PMAS-Arid Agriculture University, Rawalpindi, Shamsabad, Muree Road Rawalpindi (46300), E-mail address: drmoinawan@gmail.com , m.moaenuddin@aaur.edu.pk Cell No. : 0092-3438702053																							
Experience	List current appointment first, each entry as follows: <table><thead><tr><th><i>Date,</i></th><th><i>Title,</i></th><th><i>Institution.</i></th></tr></thead><tbody><tr><td>01-2012 to “to date”</td><td>Assistant Professor</td><td>PMAS-Arid Agriculture University, Rawalpindi</td></tr><tr><td>06-2011 to 12-2011</td><td>Post-doc</td><td>Southeast University, China</td></tr><tr><td>09-2009 to 07-2011</td><td>Post-doc</td><td>Nanjing Agricultural University, China</td></tr><tr><td>07-2008 to 10-2009</td><td>Assistant Professor</td><td>University of Veterinary & Animal Sciences, Lahore</td></tr><tr><td>04-2004 to 07-2008</td><td>Lecturer</td><td>University of Veterinary & Animal Sciences, Lahore</td></tr><tr><td>08-2002 to 06-2003</td><td>House Officer</td><td>Livestock & Dairy Development Department</td></tr></tbody></table>			<i>Date,</i>	<i>Title,</i>	<i>Institution.</i>	01-2012 to “to date”	Assistant Professor	PMAS-Arid Agriculture University, Rawalpindi	06-2011 to 12-2011	Post-doc	Southeast University, China	09-2009 to 07-2011	Post-doc	Nanjing Agricultural University, China	07-2008 to 10-2009	Assistant Professor	University of Veterinary & Animal Sciences, Lahore	04-2004 to 07-2008	Lecturer	University of Veterinary & Animal Sciences, Lahore	08-2002 to 06-2003	House Officer	Livestock & Dairy Development Department
<i>Date,</i>	<i>Title,</i>	<i>Institution.</i>																						
01-2012 to “to date”	Assistant Professor	PMAS-Arid Agriculture University, Rawalpindi																						
06-2011 to 12-2011	Post-doc	Southeast University, China																						
09-2009 to 07-2011	Post-doc	Nanjing Agricultural University, China																						
07-2008 to 10-2009	Assistant Professor	University of Veterinary & Animal Sciences, Lahore																						
04-2004 to 07-2008	Lecturer	University of Veterinary & Animal Sciences, Lahore																						
08-2002 to 06-2003	House Officer	Livestock & Dairy Development Department																						
Honor and Awards	1) HEC Approved Supervisor 2) HEC PhD Scholar 3) Merit Scholarship holder M.Sc. 4) Merit Scholarship holder B.Sc. 5) Merit Scholarship holder F.Sc.																							
Memberships	- American Dairy Science Association - Pakistan Veterinary Medical Council - Animal Genome Research Community - Reproductive Biology and Genetics Society, Singapore Animal Genome Research Community																							
Graduate Students Postdocs Undergraduate Students Honor Students	List supervision of graduate students, postdocs and undergraduate honors theses showing: <table><thead><tr><th>Years</th><th>Degree</th><th>Name</th></tr></thead><tbody><tr><td>NA</td><td>NA</td><td>NA</td></tr></tbody></table>			Years	Degree	Name	NA	NA	NA															
Years	Degree	Name																						
NA	NA	NA																						
Services Activity	NA																							
Brief Statement of Research Interest	- Molecular Genetic as Basis of Breeding and Selection - Genetic Markers and Selection - Regulation of Gene Functions and Epigenetic - RNA Biology - Computational Genomics and Bioinformatics - Evolutionary Genetics - Genetic Immunization and DNA Vaccination - In vitro Maturation (IVM) & In vitro Fertilization (IVF) {Reproductive Biotechnology and Developmental Biology}																							
Publications	M. Moaen-ud-Din, G. Bilal and M.S. Khan. 2013. Genomic Selection of Sahiwal Cattle: A Developing Country Perspective (Submitted in Journal of Animal Breeding & Genetics) Muhammad Moaen-ud-Din. 2013. Buffalo genome research: recent advances and future prospective (Submitted Large Animal Review)																							

M. Moaen-ud-Din, G. Bilal, and H. M. Waheed. 2013. Genomic Selection of Sahiwal Cattle: A Developing Country Perspective (Abstract Accepted in Journal of Dairy Science)

Nosheen Malik, **Muhammad Moaen-ud-Din** and Ruqian Zhao. 2013. Ontogeny of mRNA expression of somatostatin and its receptors in chicken embryos in association with methylation status of their promoters. J of Comparative Physiology & Biochemistry B (Accepted)

Masroor Ellahi Babar, **Muhammad Moaen-ud-Din**, Ahmed Ali, Nosheen Malik, Asif Nadeem and R. Jabeen. 2009. Potential and the Scope of Marker Assisted Selection for Buffalo in Pakistan. Pakistan J. Zool. Suppl. Ser., No.9, pp. 435-440.

Muhammad Moaen-ud-Din and Li Guo Yang. 2009. Evolutionary History of the Somatostatin and its Receptors in Mammals. Journal of Genetics, 88:41-53.

Muhammad Moaen-ud-Din, Nosheen Malik, Li Guo Yang, Ruqian Zhao, Masroor Ellahi Babar Nisar Ahmad, Muhammad Abdullah, and Ahmad Ali. 2009. Somatostatin Transfection Down-Regulates Hormone Secretion and Gene Expression Related to Growth and Fertility. Pakistan J. Zool. Suppl. Ser., No.9, pp. 0-0, 2009.

M. Moaen-ud-Din, Nosheen Malik, Ahmad Ali, Yang Li Guo and Masroor Ellahi Babar. 2009. Cortistatin vaccination – a solution to growth hormone deficiency. J of Medical Hypothesis.

Muhammad Moaen-ud-Din and Li Guo Yang. 2009. Can somatostatin alter fertility genes expression, oocytes maturation and embryo development? Journal of Animal Biotechnology. 20: 3, 144-150.

Li-Ying Geng, Ming Fang, Fei Jiang, **Muhammad Moaen-ud-Din**, Li-Guo Yang. 2008. Effect of overexpression of inhibin α (1-32) fragment on bovine granulosa cell proliferation, apoptosis, steroidogenesis, and development of co-cultured oocytes. Theriogenology. 70: 35-45.

Aixin Liang, Shaoxian Cao, Li Han, Yanfeng Yao, **M. Moaen-ud-Din**, Liguang Yang. 2008. Construction and evaluation of the eukaryotic expression plasmid encoding two copies of somatostatin gene fused with hepatitis B surface antigen gene S. Vaccine. 26: 2935-41.

Khairy MA Zoheir, Nermin El Halwany, Xiang Li, **Moaen-ud-Din** and Li-Guo Yang. 2008. Long term in vitro culture of bovine preantral follicles by using different culture media. Journal of Biological Sciences. 1-6.

M. Moaen-ud-Din, L.G. Yang, S.L. Chen, Z.R. Zhang, J.Z. Xiao, Q.Y. Wen and M. Dai. 2007. Reproductive Performance of Matou Goat under Sub-tropical monsoonal Climate of Central China. J Trop Anim Health & Prod. DOI 10.1007/s11250-007-9043-z

Yuan J F, **M. Moaen-ud-Din**, Gong Y Z, Peng X L, Yang L G, Feng Y P, Liu J, Hu B, Affara N A, Jafe O, and Zhang S J. 2007. Genetic Effects of the Mutations of Zona Pellucida Glycoprotein (ZP3) on Pig Reproduction. *Journal of Animal Breeding and Genetics*. 124:144-149.

J. F. Yuan, O. Jafer, N. A. Affara, Y. Z. Gong, Y. P. Feng, J. liu, **M. Moaen-ud-Din**, W. M. Li, and S. J. Zhang. 2007. Association of Four New SNPs in Follicle-stimulating Hormone Receptor (FSHR) and Zona Pellucida Glycoprotein (ZP3) with Reproductive Traits. Animal 1: 1249-1253 Cambridge University Press.

Zoheir Khairy M A, Xiang Li, **M Moaen-ud-Din**, Liu Yun, Yang Li-Guo. 2007. Isolation and cloning of cDNA for both IGF-1 R and FSHR genes from mature bovine oocytes of using a few numbers of cells. International Journal of Biotechnology & Biochemistry. 3,1.

Li Han, D.G. Mao, D.K. Zhang, A.X. Liang, M.Fang, **Muhammad Moaen-ud-Din**, L.G. Yang. 2007. Development and evaluation of a novel DNA vaccine expressing inhibin α (1–32) fragment for improving the fertility in rats and sheep. Animal

	Reproduction Science. 109: 251-265. Moaeen-ud-Din M and Babar M E 2006: Livestock farming in peri-urban areas of Faisalabad, Pakistan. Livestock Research for Rural Development. Volume 18, Article #12. Retrieved August 15, 2008, from http://www.cipav.org.co/lrrd/lrrd18/1/moae18012.htm M. Moaeen-ud-Din, N. Ahmad, A. Iqbal and M. Abdullah. 2006. Evaluation of different formulas for weight estimation in beetal, teddi and crossbred (beetal x teddi) goats. J. Anim. Pl. Sci. 16(3-4): Moaeen ud-Din, M., K.Z. Gondal and W. Akbar. 2004. Effect of Butter Milk (Lassi) feeding as milk replacer on health of Sahiwal calves. JAPS, 14(1-2): 29-31. Moaeen ud-Din, M., M. Younas and W. Akbar. 2004. Effect of Butter Milk (Lassi) feeding as milk replacer on growth performance of Sahiwal calves. JAPS, 14(1-2): 32-34. M. Moaeen-ud-Din, M. Abdullah, K. Javed, and N. Ahmad. 2004. Feeding Behavior of Camel under Stall Feeding. J. Anim. Pl. Sci. 14(3-4). 74-76.			
Research Grants and Contracts.	Entries should include:			
	Date	Title	Agency/ Organization	Total Awards Amount
	Completed			
	2005-08	Effect of Somatostatin on Hormone Secretion and Genes Expression Related to Growth and Fertility, Subsequent Embryo Development and its Phylogenetic History in Mammals	China Natural Science Foundation	1.0 M RMB
	2010-12	<i>In ovo</i> RNAi plasmid transfection of somatostatin in the Yellow Chicken and effect on growth performance and its mechanism	Jiangsu Province, post-doctoral research funding schemes	0.8 M RMB
	Funded and in progress			
	2013	Genetic identification of cattle breeds	NSLP-PSF	Rs. 4.534 Mill.
	2013	Collaborative Research for Genetic Conservation and Improvement of Pakistani Goats	USAID	Rs. 55.5 Million
	In review			
	2013	Appraisal of PCR paternity in pedigree control of dairy cattle	HEC	Rs. 8.707 Mill.
Other Research or Creative Accomplishments	NA			
Selected Professional Presentations	1) Moaeen-ud-Din, M. 2008. PHYLOGENETIC HISTORY OF SOMATOSTATIN IN MAMMALS. 9th Biennial Conference of the PSBMB Agriculture University, Rawalpindi, Pakistan. 2) Muhammad Moaeen-ud-Din. 2008. TRANSGENIC LIVESTOCK: PROBLEMS AND PROSPECTS. A work shop on Techniques in Transgenics the Science of Future. Department of Molecular Biology and Biotechnology, UVAS, Lahore 3) Nosheen Malik, Muhammad Moaeen-ud-Din and Ruqian Zhao. Ontogeny of mRNA expression of somatostatin and its receptors in chicken embryos in association with methylation status of their promoters. International conference on Applied Genetics and Biotechnology. December 8-9, 2011, University of Agriculture, Faisalabad.			

Name	Hafiz Muhammad Waheed
------	------------------------------

Personal	Present Address: Lecturer, Animal Breeding & Genetics Faculty of Veterinary & Animal Sciences PMAS-Arid Agriculture University Rawalpindi Permanent Address: P-483 Street No. 4 Islam Nagar Jail Road Faisalabad Cell No: 0345-7867392 E-Mail: hafizwaheed1610@gmail.com
Experience	Total Experience (6 Years and 7 Months) Date, February 7, 2008 to Date Title, Lecturer (Animal Breeding & Genetics) Institution. Faculty of Veterinary & Animal Sciences, PMAS-AAUR Date, November 24, 2006 to February 4, 2008 Title, Instructor, (Training & Coordination) Institution. Buffalo Research Institute Pattoki, L&DD, Govt. of Punjab
Honor and Awards	Nil
Memberships	Life-Time member of Pakistan Veterinary & Medical Council (PVMC)
Graduate Students Postdocs Undergraduate Students Honor Students	Nil
Services Activity	Teaching and Research
Brief Statement of Research Interest	Animal Breeding and Genetics in general and Molecular Genetics in particular to perform whole genome selection for traits of economic importance in farm animals
Publications	POSTGRADUATE RESEARCH: - Molecular Genetic Variations Among Some Punjab Sheep Breeds Using Random Amplified Polymorphic DNA (RAPD) Analysis. RESEARCH PAPER: - Hassan, M., M. N. Khan, M. Mushtaq, Z. Iqbal, A A. Farooq, M, S. Sajid and H. M. Waheed, 2007. Prevalence of Warble Fly Infestation in Buffalo in Chakwal, Punjab. Ital. J. Anim. Sci. vol.6, (Suppl.2), 942-944. REVIEW ARTICLE: - Hassan, M., M. N. Khan, M. Abubakar, H. M. Waheed, Z. Iqbal and M. Hussain, 2010. Bovine hypodermosis—a global aspect. Trop Anim Health Prod (2010) 42:1615–1625 CONFERENCE PAPERS: - Moaeen-ud-Din, M., Bilal, G., Waheed, H.M. 2013. Genomic Selection of Sahiwal Cattle: A Developing Country Perspective. Journal of Dairy Science (Accepted). http://m.jtmtg.org/PresDetail.aspx?view=sci&selectby=location&locpage=&locID=4767&sespage=1&sessionID=5808&prespage=1&presID=55941&prestyle=abs
Research Grants and Contracts.	Nil
Other Research or Creative Accomplishments	Nil
Selected Professional Presentations	Nil
Name	DR NASIR MUKHTAR

Personal	Assistant Professor, Department of Poultry Science Faculty of Veterinary and Animal Sciences PMAS Arid Agriculture University Rawalpindi									
Experience	List current appointment first, each entry as follows: Date, Title, Institution. 7-7-2010 Assistant Professor Department of Poultry Science, FV&AS PMAS-AAUR									
Honor and Awards	Nil									
Memberships	Pakistan Veterinary Medical Council Pakistan Society of Zoology									
Graduate Students Postdocs Undergraduate Students Honor Students	List supervision of graduate students, postdocs and undergraduate honors theses showing <table><tr><td>Years</td><td>Degree</td><td>Name</td></tr><tr><td>2011</td><td>DVM</td><td>11 Students</td></tr><tr><td>2011-2013</td><td>MSc (Hons)</td><td>04 Students</td></tr></table> Show other information as appropriate and list membership on graduate degree committees.	Years	Degree	Name	2011	DVM	11 Students	2011-2013	MSc (Hons)	04 Students
Years	Degree	Name								
2011	DVM	11 Students								
2011-2013	MSc (Hons)	04 Students								
Services Activity	List university and public services activities.									
Brief Statement of Research Interest	Understanding the relationship between Nutrition, Diseases, Mycotoxins, Genetic, gut health, Metabolic Biology, Bone Health and Neurobiology									
Publications	List publications in standard bibliographic format with earliest date first. ○ Manuscripts accepted for publication should be included under appropriate category as “in Press;” ○ Segment the list under following standard headings: ● Articles published by refereed journals. [1] Nasir Mukhtar., Khan, S. H. 2013. Hatchling length is a potential chick quality Parameter in meat type chickens. <i>World’s Poultry Science Journal (Cambridge)</i> In Press [2] Khan, S.H., Nasir Mukhtar. 2013. Dynamic role of cholecalciferol in commercial chicken performance. <i>World’s Poultry Science Journal (Cambridge)</i>,69(3),In press. [3] Nasir Mukhtar., Khan, S. H., Hadi, S.A., Khalid, M. F. 2013. Use of Mobile Phones and its Accessories at Poultry Farms- A Stern Breach in Biosecurity. <i>Reviews in Veterinary and Animal Sciences.</i> 1:1-6 [4] Khawaja, T., Khan, S. H., Nasir Mukhtar., Parveen A., Fareed, G. 2013. Production performance, egg quality and biochemical parameters of three way crossbred chickens with reciprocal F1 crossbred chickens in sub-tropical environment. <i>Italian Journal of Animal Science.</i> 12:e21, 127-132. [5] Khawaja, T., Khan, S. H., Nasir Mukhtar., Ullah, N., Perveen, A., 2013. Production performance, egg quality and biochemical parameters of Fayoumi, Rhode Island Red and their reciprocal crossbred Chickens. <i>Journal of Applied Animal Research (Taylor and Frances)</i> 41, 208-217. [6] Nasir Mukhtar., Khan, S. H. 2012. Comb- An important reliable visual ornamental trait for selection in <i>Gallus domesticus</i>: <i>World’s Poultry Science Journal (Cambridge)</i> 68(3)425-434. [7] Nasir Mukhtar., Khan, S. H., Khan, R. N. A. 2012. Structural profile and emerging constraints of developing poultry meat industry of Pakistan. <i>World’s Poultry Science Journal (Cambridge)</i> 68 (4) 749-757. [8] Mansur, A. S., Mirza, F. Q., Afzal, Farhan., Nasir Mukhtar. 2012. Effect of heat stress on cellular and humoral immunity and its cure with a-tocopherol in meat type birds. <i>Livestock Science (Elsevier)</i> 148, 181–188. [9] Khawaja, T., Khan, S. H., Nasir Mukhtar., Perveen, A. 2012 Comparative study of growth performance and hematological parameters of Fayoumi, Rhode Island Red and									

	their reciprocal crossbred chickens. <i>Italian Journal of Animal Sciences</i>, 11(e39), 211-216. [10] Khawaja, T., Khan, S. H., Nasir Mukhtar., Ahmad, T., Gaffar, A. 2012. Comparative study of growth performance, egg production, egg quality and haemato-biochemical parameters of Desi, Fayoumi and Rhode Island Red Chicken. <i>Journal of Applied Animal Research (Taylor and Frances)</i>, 40(4), 273-283. [11] Zakaria, M., Butt, H. T., Khalid, M. F., Nasir Mukhtar., Ifkhtiar, M. 2012. Impact of poultry extension services for rural women. <i>African Journal of Agricultural Research</i> 7, 1893-1900. [12] Hussain, M., Rehman, A., Khalid, M. F., Shahzad, M. A., Nasir Mukhtar. 2012. Broiler performance in response to phytase and supplemented phytase. <i>Iranian Journal of Animal Science</i> 2, 111-120. [13] Khan, S. H., Atif, M., Nasir Mukhtar., Rehman, A., Fareed, G. 2011. Effect of Supplementation of multi-enzyme and multi-Species probiotic on production performance, egg quality, cholesterol level and immune in laying hens. <i>Journal of Applied Animal Research (Taylor and Frances)</i>. 39(4): 386-398. [14] Saddiqi, H. A., Nisa, M., Nasir Mukhtar., Shahzad, M. A., Jabbar, A., Sarwar, M. 2011. Documentation of physiological parameters and blood profile of newly born Kajli lambs. <i>Asian Australian Journal of Animal Sciences</i> 24, 912-918. [15] Nasir Mukhtar., Sarwar, M., Nisa, M., Sheikh, M. A. 2010. Growth response of growing lambs fed on concentrate with or without Ionophores and Probiotics. <i>International Journal of Agriculture and Biology</i> 12, 98-101. [16] Sarwar, M., Nasir Mukhtar., Shehzad, M. A., Nisa, M. 2010. Traditional versus high input feeding system: Impact on nutrients intake, blood dynamics, hormonal profile, weight gain and economics in growing lambs. <i>Egyptian Journal of Sheep and Goat Science</i>. 5(1),127- 145 [17] Javed, M. T., Irfan, M., Nasir Mukhtar., Rehman, S., Hussain, R. 2009. An outbreak of enterotoxaemia at livestock farm during subtropical summers. <i>Acta Tropica (Elsevier)</i> 112, 225-227. (Impact Factor – 2.722) [18] Haq, A., Nasir Mukhtar., Rehman, S., Ramzan, M., Ahmed, S. 2002. Effect of parental comb size and body weight on subsequent performance in Lyallpur Silver black. <i>Journal of Life and Social Sciences</i> 1, 98-101. [19] Shakoor. H. I., Khan, M. L., Nasir, Z., Nasir Mukhtar., Rehman, M. S. 2002. Effect of feeding canola and soybean oils on serum lipid profile in commercial layers. <i>Pakistan Veterinary Journal</i> 22, 48-51. [20] Nadeem, M., Alam, M. Z., Rehman, M. S., Nasir Mukhtar., Ali, B. 2002. Effect of supplementation of fiber degrading enzymes in broiler ration having varying levels of canola meals on the performance of broilers. <i>Journal of Animal & Plant Sciences</i>, [21] Rehman, M. S., Haq, A., Nadeem, M., Nasir Mukhtar. 2002. Effect of varying levels of garlic powder (<i>Allium Sativaum</i>) on egg production, and blood constituents of white leghorn layers. <i>Journal of Animal & Plant Sciences</i>, 12, 23-25. • Books. 1. Nasir Mukhtar 2011. Avian Comb Size and Body Weight: Traits for Progeny Selection. VMD Germany, Published in USA 2. Khan, R.N.A., Iqbal, M. F., Nasir Mukhtar, 2011. <i>Formononetin and Broiler Performance</i>. 1st ed. Lambert Academic Publishing, Germany. Published in USA 3. Nasir Mukhtar, 2011. Broiling of Lambs: Under High Input Feeding, VMD Germany, Published in USA • Scholarly and /or creative activity published through a refereed electronic venue. • Contribution to edited volumes.
--	---

	• Papers published in refereed conference proceeding. 1. Nasir Mukhtar, F. Farooq, S. H. Khan, N. M. Ashraf, M. A. Sandhu, A. Rehman, M. A. Anjum, Zaib ur Rehman` 2013. Effect of dietary protease enzyme with varying amino acid levels on growth performance, serum blood chemistry, organ biometry and carcass characteristics in meat type broilers under hot semi arid environment. Submitted Manuscript for Oral Presentation in <i>International Conference on Animal Science & Veterinary Medicine on 16-17 December, Melbourne Australia.</i> 2. Nasir Mukhtar, M. Asif Shehzad, M. Nisa and M. Sarwar. 2010. Blood metabolites and hormonal response of growing lambs to intensifying crude protein with or without ionophores and Probiotics. (<i>Presented in International Conference on Agriculture and Animal Science. 26-28 February 2010- Singapore.</i>) 3. Muhammad Asif Shehzad, Nasir Mukhtar & Muhammad Sarwar.2010. Nutrition – acid base status – human health: A critical link for well being. (<i>Presented in: International Conference on Agriculture and food Engineering, Tokyo, Japan, May, 26-28, 2010</i>) 4. Muhammad Asif Shehzad, Nasir Mukhtar & Muhammad Sarwar. 2010. “Nutrient modeling to fabricate dairy milk constituent: Let milk serve more than a food item” (<i>Presented in: International Conference on Agriculture and Biological Engineering, Paris, France, July , 28-30, 2010</i>). 5. Shehzad, M. A., Nasir Mukhtar, Nisa, M. Sarwar, Saddique, H. A. Intensifying dietary crude protein with or without rumen modifiers:influence on nutrient consumption, blood chemistry and growth index of growing male goats (Abstarct). Egyptian journal of sheep and goat sciences, vol. 8 (1), p: 46, 2013 (<i>proceedings book of 4th international scientific conference on small ruminant development</i>) (3-7 Sept., 2012, Sharm el Shiekh) • Paper or extended abstracts published in conference proceeding. (refereed on the basis of abstract) Nasir Mukhtar, S. M. Abdullah and F. Farhan, 2013, Impact of hatchling length and sex on body weight, organ biometry and thyroid hormones in broilers chickens (Abstract). <i>VTRW/BSAS/WPSA Conference – Innovation from animal science – a necessity not an option</i>. Nottingham University, Jubilee Campus, UK, 16-17 April 2013 • Articles published in popular press. • Articles appearing in in-house organs. • Research reports submitted to sponsors. • Articles published in non-refereed journals. • Manuscripts submitted for publication. (Include where and when submitted).				
Research Grants and Contracts.	Entries should include: <table><tr><th>Date</th><th>Title</th><th>Agency/Organization</th><th>Total Awards Amount</th></tr></table> Segment the list under following heading: • Completed • Funded and in progress • In review	Date	Title	Agency/Organization	Total Awards Amount
Date	Title	Agency/Organization	Total Awards Amount		
Other Research or Creative Accomplishments	List patents, software, new products developed, etc.				
Selected Professional Presentations	Nil				
Name	Arfan Yousaf				

Personal	Department of Clinical Sciences, PMAS-University of Arid Agriculture Rawalpindi Cell# 03336504830
Experience	List current appointment first, each entry as follows: Date, Title, Institution. 1. March, 1999- Jan 2012 Lecturer Univ. of Agriculture Faisalabad 2. Jan 2012- to date Associate Professor PMAS UAAR
Honor and Awards	Merit Scholarship for Undergraduate and MSc(Hons) Post- Doctorate Fellowship from HEC
Memberships	Pakistan Veterinary Medical Council
Graduate Students Postdocs Undergraduate Students Honor Students	NA
Services Activity	NA
Brief Statement of Research Interest	I am working as Associate Professor and Chairman in the Department of Clinical Sciences, Faculty of Veterinary and Animal Sciences, Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi, Pakistan. Before joining the current university, I worked more than 13 years in the Department of Clinical Medicine and Surgery, University of Agriculture, Faisalabad, Pakistan. My research area is infectious diseases of animals especially bovine mastitis. I developed and evaluated vaccine against staphylococcal mastitis in cows and buffaloes as my doctoral research. I worked as Post-Doctoral Fellow for 10 months in Quality Milk Production Services (QMPS) Laboratory in Animal Health Diagnostic Laboratory, College of Veterinary Medicine, Cornell University, USA In addition to research I teach graduate and undergraduate courses and perform duties as clinician on outdoor Veterinary Teaching Hospital of the department
Publications	1. Malik, M. H., N. Malik, A. Chudary and A. Yousaf , 2003. Epidemiology and Diagnosis of Rinderpest: Pakistan and Global Eradication Programme. Int. J. Agri. Bio., 5(4): 650-654 2. Hussain, H. M., M. Athar, A. Yousaf , G. Muhammad, and M. Saqib, 2003. Catastrophic abdominal injury with evisceration of jejunum and ileum in draught donkey. Pak. Vet. J., 23(4): 207-208. 3. Hussain, A., A. Yousaf , and M. Athar, 2004. Effect of acute laminitis on hemogram and serum biochemistry in mules. Pak. Vet. J., 24(1):61-78. 4. Sharif A, T. Ahmad, M.Q. Bilal, A. Yousaf and G. Muhammad, 2007. Effect of severity of sub-clinical mastitis on somatic cell count and lactose contents of buffalo's milk. Pak. Vet. J., 27(3): 142-144 5. Sharif A, T. Ahmad, M.Q. Bilal, A. Yousaf , G. Muhammad, Sajjad-ur-Rahman and F.M. Pansota, 2007. Estimation of milk lactose and somatic cells for the diagnosis of sub-clinical mastitis in dairy buffaloes. Inter. J. Agri. Bio., 9(2): 267-270. 6. Mahfooz, A., M. Z. Masood, A. Yousaf , N. Akhtar and M.A. Zafar. 2008. Prevalence and anthelmintic efficacy of abamectin against gastrointestinal parasites in horses. Pak. Vet. J., 28(2): 76-78. 7. Yousaf, A. , G. Muhammad, Sajjad-ur-Rahman and M. Siddique. 2009. Effect of Montanide adjuvanted <i>Staphylococcus aureus</i> bacterin toxiod on prevalence and incidence of mastitis in cows. Pak.J.Agr.Sci, 46(2):119-123. 8. Zafar, M.A, G. Muhammad, M. Hussain, T. Ahmad, A. Yousaf and I.

	Sarfraz, 2009. Comparative efficacy of hypertonic saline and normal saline solutions in experimentally endotoxic shock in dogs. Pak. Vet. J., 29(3): 115-120. 9. Yousaf M. S., Z. U. Rahman, M. A. Sandhu, S. A. Bukhari and A. Yousaf. 2009. Comparison of the fast-induced and high dietary zinc-induced molting: Trace elements dynamic in serum and eggs at different production stages in hens (<i>Gallus domesticus</i>). J. Anim. Physio. Anim. Nutr.. 93: 35-43. 10. Khan, A., A. Yousaf, M.Z. Khan, M. Siddique, S.T. Gul and F. Mahmood. 2009. Cutaneous form of pox infection among captive peafowl (<i>Pavo cristatus</i>) Chicks. Avian Pathology, 38(1): 65-70. 11. Ahmad, T., M. M. Hussain, A. Yousaf, M. Z. Masood, and G. Muhammad, 2009. Effects of vitamin E, selenium and levamisole on immune response of broiler birds artificially infected with coccidiosis. Proc. 5th International Poultry Conference 10-13 March 2009. Taba – Egypt. Pp 1489-1399 12. Masood, M. Z., A. Yousaf, T. Ahmad, and G. Muhammad, 2009. Effect of ochratoxin a on liver enzymes and humoral response to hydropericardium syndrome vaccine in broilers. Proc. 5th International Poultry Conference 10-13 March 2009. Taba – Egypt. Pp 1408-1414. 13. Basir, A. Khan, R. Mustafa, M.Z. Khan, F. Rizvi, F. Mahmood and A. Yousaf, 2010. Toxicopathological effects of lambda-cyhalothrin in female rabbits (<i>Oryctolagus cuniculus</i>). Human and Exp. Toxicology 30(7):591-602 14. Iqbal, M., M. Shahid, A. Yousaf and M. Munir, 2011. Pharmacokinetics of Cefaclor in Stray Dogs Determined Microbiologically. Asian J. Chemistry, 23(7):2837-2840. 15. Abbas, R. Z., Z. Manzoor, S. H. Munawar, Z. Iqbal, M.N. Khan, M. K. Saleemi, M.A. Zia and A. Yousaf, 2011. Anticoccidial activity of hydrochloric acid (HCl) against <i>Eimeria tenella</i> in broiler chicken. <i>Pesquisa Veterinária Brasileira</i> 31(5):425-429. 16. Abbas, R. Z., , S. H. Munawar, Z. Manzoor Z. Iqbal, M.N. Khan, M. K. Saleemi, M.A. Zia and A. Yousaf, 2011. Anticoccidial effects of acetic acid on performance and pathogenic parameter in broiler chickens challenged with <i>Eimeria tenella</i>. <i>Pesquisa Veterinária Brasileira</i> 31(2):99-103. 17. Qayyum A., A. Yousaf, T. Ahmad, Z.U.Rahman and U. Farooq, 2012. Immunomodulatory effects of Lisovit® in response to Newcastle Disease and Infectious Bursal Disease vaccines in broilers. J. Anim. Pl. Sci, 22(1):1-14. 18. Zafar, M. A., G. Muhammad, R.Z. Abbas, A. Yousaf and T. Ahmad, 2012. Therapeutic evaluation of hypertonic saline solution in diarrheic Buffaloes. J. Anim. Pl. Sci, 22(3 Suppl.): 196-199
Research Grants and Contracts.	NA
Other Research or Creative Accomplishments	NA
Selected Professional Presentations	NA

Name	Dr. Muhammad Arif Zafar												
Personal	Assistant Professor, Dept. of Clinical Sciences, Faculty of Veterinary & Animal Sciences, PMAS-Arid Agriculture University, Rawalpindi. Mobile No.: 0321-8666017												
Experience	List current appointment first, each entry as follows: <table><tr><td><i>Date,</i></td><td><i>Title,</i></td><td><i>Institution.</i></td></tr><tr><td>30-07-2010 to Till date</td><td>Assistant Professor</td><td>Arid Agriculture University, RWP</td></tr><tr><td>12-05-2010 to 29-07-2010</td><td>Lecturer</td><td>College of Vet. & Anim. Sci., Jhang</td></tr><tr><td>30-08-2005 to 11-05-2010</td><td>Lecturer</td><td>University of Agriculture, FSD</td></tr></table>	<i>Date,</i>	<i>Title,</i>	<i>Institution.</i>	30-07-2010 to Till date	Assistant Professor	Arid Agriculture University, RWP	12-05-2010 to 29-07-2010	Lecturer	College of Vet. & Anim. Sci., Jhang	30-08-2005 to 11-05-2010	Lecturer	University of Agriculture, FSD
<i>Date,</i>	<i>Title,</i>	<i>Institution.</i>											
30-07-2010 to Till date	Assistant Professor	Arid Agriculture University, RWP											
12-05-2010 to 29-07-2010	Lecturer	College of Vet. & Anim. Sci., Jhang											
30-08-2005 to 11-05-2010	Lecturer	University of Agriculture, FSD											
Honor and Awards	List honors or awards for scholarship or professional activity.												
Memberships	• Co-ordinator, Time Table and Date Sheet, Faculty of Veterinary & Animal Sciences, PMAS-Arid Agriculture University, Rawalpindi. • Member, Board of Studies, Faculty of Forestry, Range and Wildlife Management, PMAS-Arid Agriculture University, Rawalpindi. • Member, Board of Studies, Faculty of Veterinary & Animal Sciences, PMAS-Arid Agriculture University, Rawalpindi. • Member, Postgraduate Synopsis Scrutiny Committee, Faculty of Veterinary & Animal Sciences, PMAS-Arid Agriculture University, Rawalpindi. • Advisor, 8th Semester, Faculty of Veterinary & Animal Sciences, PMAS-Arid Agriculture University, Rawalpindi. • Chairman, Comprehensive Examiner Board for Ph.D of Mr. Javid Iqbal Regd. No. 06-arid-264, Department of Poultry Science, Faculty of Veterinary & Animal Sciences, PMAS-Arid Agriculture University, Rawalpindi. • Member, Technical Committee, Kunt Livestock Farm, PMAS-Arid Agriculture University, Rawalpindi.												
Graduate Students Postdocs Undergraduate Students Honor Students	List supervision of graduate students, postdocs and undergraduate honors theses showing: <table><tr><td>Years</td><td>Degree</td><td>Name</td></tr></table> Show other information as appropriate and list membership on graduate degree committees.	Years	Degree	Name									
Years	Degree	Name											
Services Activity	Render public services at Veterinary Medical Teaching hospital of the Department.												
Brief Statement of Research Interest	• Identifying novel therapeutics for systemic inflammatory response syndrome (SIRS) • Companion & Food animal Surgery												
Publications	<u>International</u> 1. <u>Zafar M. A.,</u> F. Raza and N. Ullah. Treatment of pneumonic pasteurellosis in Beetle goats with florfenicol in combination with flunixin meglumine. <i>Egyptian Journal of Sheep and Goat Sciences (Accepted Manuscript)</i> . 2. Abbas, R. Z., Z. Iqbal, M. N. Khan, <u>M. A. Zafar</u> and M. A. Zia, 2010. Anticoccidial activity of Curcuma longa L. in Broilers. <i>Brazilian Archives of Biology and Technology</i> , 53: 63-67. 3. Yousaf, A., I. Sarfaraz, <u>M. A. Zafar,</u> R. Z. Abbas, A. Hussain and A. Manzoor, 2010. Effect of treatment with tri-sodium citrate alone and in combination with levamisole Hcl on total milk bacterial count in dairy buffalo suffering from sub-clinical mastitis. <i>Revista Veterinaria</i> , 21 (Sup. 1): 187-189. 4. <u>Zafar, M. A.,</u> T. Ahmad, A. Yousaf, R. Z. Abbas and I. Sarfaraz, 2010. Evaluation of hypertonic saline solution in combination with ceftiofur HCl and flunixin meglumine in the treatment of bubaline septicemic pasteurellosis. <i>Revista Veterinaria</i> , 21 (Sup. 1): 455-461. 5. Ahmad, T., G. Muhammad, A. Yousaf, M. Nadeem and M. A. Zafar, 2010.												

	Therapeutic efficacy of antibiotics and bacterin-toxoid in sub-clinical <i>streptococcus agalactiae</i> mastitis in dairy buffaloes. <i>Revista Veterinaria</i>, 21 (Sup. 1): 492-496. 6. Zafar, M. A., T. Ahmad, A. Yousaf, R. Z. Abbas and I. Sarfaraz, 2010. Comparison of hypertonic and isotonic saline solutions in diarrhea-induced dehydration therapy in goats. <i>Egyptian Journal of Sheep and Goat Sciences</i>, 5(1): 357-365. 7. Ahmad, T., A. Mahfooz, S. Hussain, M. A. Zafar, A. Yousaf and R. Z. Abbas, 2010. Anthelmintic Efficacy of Doramectin, Albendazole and Levamisole against Nematodes of Sheep. <i>Egyptian Journal of Sheep and Goat Sciences</i> 5(1): 341-347. 8. A. Yousaf, T. Ahmad, M. A. Zafar and R. Z. Abbas, 2010. Tetanus treatment in Beetle goats. <i>Egyptian Journal of Sheep and Goat Sciences</i> 5(1): 349-356. National 1. Zafar, M. A., G. Muhammad, Z. Iqbal and M. Riaz, 2012. Evaluation of hypertonic saline solution in combination with ceftiofur HCl and flunixin meglumine in the treatment of haemorrhagic septicaemia in buffaloes. <i>The journal of Animal and Plant Sciences</i>, 22(3 Suppl.): 189-195. 2. Zafar, M. A., G. Muhammad, R. Z. Abbas, A. Yousaf and T. Ahmad, 2012. Therapeutic evaluation of hypertonic saline solution in diarrhetic buffaloes. <i>The journal of Animal and Plant Sciences</i>, 22(3 Suppl.): 196-199. 3. Zafar M. A., N. Ullah, I. Sarfaraz and F. Raza, 2012. Evaluation of relative efficacy of hypertonic saline and lactated Ringer's solutions at the same dose and infusion rates in experimentally induced hypovolaemic shock in dogs. <i>Proceedings of Science Conferences (Accepted Manuscript)</i>. 4. Zafar M. A., G. Muhammad, Z. Iqbal and M. Riaz, 2010. Effects of hypertonic saline solution on clinical parameters, serum electrolytes and plasma volume in the treatment of haemorrhagic septicaemia in buffaloes. <i>Pakistan Veterinary Journal</i>, 30(2): 95-99. 5. Zafar M. A., G. Muhammad, M. H. Hussain, T. Ahmad, A. Yousaf and I. Sarfaraz, 2009. Comparative Efficacy of Hypertonic Saline and Normal Saline Solutions in Experimentally Induced Endotoxic Shock in Dogs. <i>Pakistan Veterinary Journal</i>, 29(3): 115-120. 6. Muhammad, N., M. A. Zafar, G. Muhammad, M. Z. Masood, A. Manzoor and I. Sarfaraz, 2009. Comparative Anaesthetic Efficacy of Propofol, Thiopental Sodium and Combination of Propofol with Ketamine Hydrochloride in Dogs. <i>Pakistan Veterinary Journal</i>, 29(1): 11-15. 7. Sarfaraz, I., A. Yousaf, G. Muhammad, R. Z. Abbas, M. A. Zafar and T. Ahmad, 2009. Evaluation of trisodium citrate alone and in combination with levamisole hydrochloride in the treatment of sub-clinical mastitis in dairy buffaloes. <i>Pakistan Journal of Zoology</i>, 9: 839-843. 8. Mahfooz, M. Z. Masood, A. Yousaf, N. Akhtar and M. A. Zafar, 2008. Prevalence and anthelmintic efficacy of abamectin against gastrointestinal parasites in horses. <i>Pakistan Veterinary Journal</i>, 28: 76-78. 9. Zafar M. A., M. H. Hussain, G. Muhammad and M. Saqib, 2004. Review. Potential Use of Hypertonic Saline Solution (7-7.5% NaCl) Resuscitation in Hypovolemic and Endotoxic Shock. <i>International Journal of Agriculture & Biology</i>, 5: 926-930.
Research Grants and Contracts.	Entries should include: February 2012 to June 2013 Evaluation of black seed (<i>Nigella sativa</i>) oil in the amelioration of cytokine level during endotoxic shock PMAS-Arid Agriculture University, Rawalpindi Status: Completed June 2012 to July 2013 Comparative evaluation of cefepime HCl and imipenem in the

	treatment of induced intra-abdominal sepsis in the dogs. PMAS-Arid Agriculture University, Rawalpindi Status: Near to completion Evaluation of intravenous hyperosmotic sodium bicarbonate solution as an adjunct to antibiotic therapy on acid-base status and cardiovascular functions in buffalo calves with induced and spontaneous neonatal diarrhoea associated with <i>Escherichia coli</i>. NSLP-Pakistan Science Foundation Status: In review
--	--

Name	Muhammad Yaqoob																		
Personal	<u>POSTAL ADDRESS</u> Dr Muhammad Yaqoob C/O Naseem Tahir Habib Bank Ltd Shaker Garh Distt Narowal Province Punjab Pakistan. <u>PERMANENT ADDRESS</u> Muhammad Yaqoob Village Nathu Kot P/O Mir Pur Teh Shaker Garh Distt Narowal Province Punjab Pakistan																		
Experience	List current appointment first, each entry as follows: <table><tr><td><i>Date,</i></td><td><i>Title,</i></td><td><i>Institution</i></td></tr><tr><td>10-08-11</td><td>Assistant Professor</td><td>AAUR</td></tr><tr><td>25-08-08</td><td>Ph.D Scholar</td><td>AAUR</td></tr><tr><td>21-12-05</td><td>veterinary officer</td><td>L&DD</td></tr><tr><td>01-07-03</td><td>technical manager</td><td>Feed company (pvt)</td></tr><tr><td>01-08-02</td><td>house officer</td><td>L&DD</td></tr></table>	<i>Date,</i>	<i>Title,</i>	<i>Institution</i>	10-08-11	Assistant Professor	AAUR	25-08-08	Ph.D Scholar	AAUR	21-12-05	veterinary officer	L&DD	01-07-03	technical manager	Feed company (pvt)	01-08-02	house officer	L&DD
<i>Date,</i>	<i>Title,</i>	<i>Institution</i>																	
10-08-11	Assistant Professor	AAUR																	
25-08-08	Ph.D Scholar	AAUR																	
21-12-05	veterinary officer	L&DD																	
01-07-03	technical manager	Feed company (pvt)																	
01-08-02	house officer	L&DD																	
Honor and Awards	1 ST position in Matric class. Won the foreign funded Ph.D Scholarship																		
Memberships	Member of self assessment report committee PVMC																		
Graduate Students Postdocs Undergraduate Students Honor Students	Nil:																		
Services Activity	Technical manager in awan farma Animal health services, artificial insemination, farm management and research Technical manager in poultry feed company Diagnostic work in diagnostic lab as a veterinary officer Research work as a Ph.D scholarship Teaching of DVM student in university as a assistant professor																		
Brief Statement of Research Interest	Antimicrobial therapy Antimicrobial resistance Acquired intrinsic resistance Roll of integrons Relationship between resistance and virulence																		
Publications	Muhammad Yaqoob • Li Ping Wang •Tang Fang Cheng-Ping Lu Occurrence and transmission of class 1 and 2 integrons among phenotypic highly ampicillin resistant avian <i>Escherichia coli</i> isolates from Pakistan World J Microbiol Biotechnol. DOI 10.1007/s11274-011-0666-x 2- Shaohui Wang, Chunling Niu, Zhenyu Shi, Yongjie Xia, Muhammad Yaqoob ,Jianjun Dai,* and Chengping Lu* Effects of ibeA deletion on Virulence and Biofilm formation of Avian Pathogenic <i>Escherichia coli</i> . Infection And Immunity, Jan. 2011, p. 279–287 3- Muhammad Yaqoob , Li Ping Wang, Sajjad Hussain, Javed Mamon, Jam Kashif, Shaohui Wang, Cheng-Ping Lu Association between Antimicrobial Resistance Phenotypes Antimicrobial Resistance genotypes and Virulence Genes of <i>E.coli</i> Isolates from Pakistan and China. Transboundary and Emerging Diseases 4-Memon J, J Kashif, M Yaqoob , W Liping, Y Yang and F Hongjie, 2012. Molecular characterization and antimicrobial sensitivity of pathogens from sub-clinical and clinical mastitis in eastern China. Pak Vet J, xx(x): xxx																		

	5-Kashif J, R Buriro, J Memon, M Yaqoob , J Soomro, D Dongxue, H Jinhu and W Liping, 2013. Detection of class 1 and 2 integrons, β-lactamase genes and molecular characterization of sulfonamide resistance in Escherichia coli isolates recovered from poultry in China. Pak Vet J, xx(x): xxx																																																			
Research Grants and Contracts.	Entries should include: <table><tr><td>Date</td><td>Title</td><td>Agency/Organization</td></tr><tr><td>3 year</td><td>Molecular characterization of antibiotic’s resistant <i>Pasteurella</i> PSF</td><td></td></tr><tr><td></td><td><i>Multocida</i> isolated from the buffalo and cattle calves for effective therapeutic approach in Punjab</td><td></td></tr><tr><td>Total Awards Amount</td><td></td><td></td></tr><tr><td>4926280</td><td></td><td></td></tr><tr><td>Submitted</td><td></td><td></td></tr><tr><td>Date</td><td>Title</td><td>Agency/Organization</td></tr><tr><td>2year</td><td>Molecular Epidemiology of <i>Mycobacterium avium sub</i> PSF</td><td></td></tr><tr><td></td><td><i>species paratube- rculosis</i> in animals and human population and evaluation of its zoonotic potential</td><td></td></tr><tr><td>Total Awards Amount</td><td></td><td></td></tr><tr><td>2868650</td><td></td><td></td></tr><tr><td>Submitted</td><td></td><td></td></tr><tr><td>Date</td><td>Title</td><td>Agency/Organization</td></tr><tr><td>1 year</td><td>Prevalence, bacteriology and Antibiotics Sensitivity of goat Mastitis in District Jhelum</td><td>AAUR</td></tr><tr><td>Total Awards Amount</td><td></td><td></td></tr><tr><td>144500</td><td></td><td></td></tr><tr><td>Submitted</td><td></td><td></td></tr></table>	Date	Title	Agency/Organization	3 year	Molecular characterization of antibiotic’s resistant <i>Pasteurella</i> PSF			<i>Multocida</i> isolated from the buffalo and cattle calves for effective therapeutic approach in Punjab		Total Awards Amount			4926280			Submitted			Date	Title	Agency/Organization	2year	Molecular Epidemiology of <i>Mycobacterium avium sub</i> PSF			<i>species paratube- rculosis</i> in animals and human population and evaluation of its zoonotic potential		Total Awards Amount			2868650			Submitted			Date	Title	Agency/Organization	1 year	Prevalence, bacteriology and Antibiotics Sensitivity of goat Mastitis in District Jhelum	AAUR	Total Awards Amount			144500			Submitted		
Date	Title	Agency/Organization																																																		
3 year	Molecular characterization of antibiotic’s resistant <i>Pasteurella</i> PSF																																																			
	<i>Multocida</i> isolated from the buffalo and cattle calves for effective therapeutic approach in Punjab																																																			
Total Awards Amount																																																				
4926280																																																				
Submitted																																																				
Date	Title	Agency/Organization																																																		
2year	Molecular Epidemiology of <i>Mycobacterium avium sub</i> PSF																																																			
	<i>species paratube- rculosis</i> in animals and human population and evaluation of its zoonotic potential																																																			
Total Awards Amount																																																				
2868650																																																				
Submitted																																																				
Date	Title	Agency/Organization																																																		
1 year	Prevalence, bacteriology and Antibiotics Sensitivity of goat Mastitis in District Jhelum	AAUR																																																		
Total Awards Amount																																																				
144500																																																				
Submitted																																																				
Other Research or Creative Accomplishments	Nil																																																			
Selected Professional Presentations	Nil																																																			

Name	Mansur Abdullah
Personal	Department of Biomedical Sciences (Physiology), Faculty of Veterinary and Animal Sciences, PMAS, Arid Agriculture University, Shamsabad, Rawalpindi, 46300, Punjab, Pakistan
Experience	List current appointment first, each entry as follows: Date, Title, Institution. 2007 Assistant Professor PMAS, AAUR 2006-2007 Research Fellow University of Agriculture, Faisalabad 2005-2006 Teaching Assistant University of Agriculture, Faisalabad 2002-2004 Research Associate University of Agriculture, Faisalabad
Honor and Awards	2001 Merit scholarship in M.Sc (Hons) 2001 Scholarship for short course on Poultry Health and Management 2004 FIMSA/ASI travel grant and funding for Immunology course and meeting 2008 Four months training course funded by the Arid Agriculture University, Rawalpindi, Pakistan
Memberships	2002-to date Pakistan Veterinary Medical Council 2005-to 2011 Endocrine Society, USA
Graduate Students Postdocs Undergraduate Students Honor Students	List supervision of graduate students, postdocs and undergraduate honors theses showing: Years Degree Name 2010 M.Phil (Zoology) Co-Supervisor Anila Zaib 2013 M.Phil (Zoology) Member Ammara Saleem Show other information as appropriate and list membership on graduate degree committees.
Services Activity	Working as a Assistant Professor at PMAS, Arid Agriculture University, Rawalpindi
Brief Statement of Research Interest	There are different methods of induced molt in laying hens (<i>Gallus domesticus</i>) but I have changed technique of zinc oxide addition along with light reduction, which will be more feasible than standard technique. I have been studying cellular and humoral immune response of these molted hens along with molecular changes taking place within the anterior pituitary gland of laying and molted laying hens. I have also found the changes in CRH-R1 receptors on corticotrophs in the ewes during different physiological changes. The interesting finding of my research is that during pregnancy in ewes the number of corticotrophs, CRH-R1 and POMC containing subpopulation in sheep and water buffalo adenohypophysis.
Publications	- List publications in standard bibliographic format with earliest date first. - Articles published by refereed journals. - Zia, M.R., Sajjad-ur-Rahman, M. Siddique, M.A. Sandhu 2001. Comparative efficiency of two oil emulsion hydropericardium/hepatitis syndrome vaccines. Int. J. Agri. Biol. 3(4): 436-438. - Zia-ur-Rahman, M.A. Sandhu, T. Ahmad 2003. Hematological and serum biochemical profiles of buffalo heifers as influenced by Levamisol. Comp. Clinical Path. 12: 147-150. - Ahmad, F.M., M.T. Javed, M.A. Sandhu, R. Kausar 2004. Effects of higher levels of chromium and copper on broiler health and performance during the peak tropical summer season. Vet. Arhiv. 74: 395-405. - Mansur A. Sandhu, Zia U. Rahman, Sajjad U. Rahman 2006. Dynamics of macrophages in laying hens during second and third production cycles after zinc induced molting. J. Poult. Sci. 43: 286-294. - Sandhu, M.A., Z.U. Rahman, S.U. Rahman 2007. Effects of induced molting on some immunological parameters in laying hens (<i>Gallus domesticus</i>). Arch.

	Geflugelkd. 71 (3): S. 110-116. • Sandhu, M.A., Z.U. Rahman, I. Javed, S.U. Rahman 2007. Changes in macrophage functions during molt-induced second and third production cycles in laying hens. Arch. Geflugelkd. 71 (4): S. 181-186. • Sajid, M., Z. Iqbal, G. Muhammad, M.A. Sandhu, M.N. Khan, M. Saqib, M.Z. Iqbal 2007. Effect of ivermectin on the cellular and humoral immune responses of rabbits. Life Sci. 80: 1966-1970. • Mansur A. Sandhu, Zia U. Rahman, Sajjad U. Rahman, Ijaz J. Hassan 2007. Dynamics of innate immune response in Gallus domesticus using two methods of induced molting. Vet. Immunol. Immunopathol. 120: 106-114. • M.A. Sandhu, Z.U. Rahman, I.J. Hasan, S.U. Rahman, M.S. Yousaf 2008. Changes in luteinizing-hormone containing gonadotrophs after molting induced by fasting and zinc in laying hens (Gallus domesticus). J. Anim. Physiol. Anim. Nutri. 92: 668-676. • Yousaf, M.S., Z.U. Rahman, M.A. Sandhu, S.A. Bukhari, A. Yousaf 2009. Comparison of the fast-induced and high dietary zinc-induced molting: Trace elements dynamic in serum and eggs at different production stages in hens (Gallus domesticus). J. Anim. Physiol. Anim. Nutri. 93: 35-43. • Javed, I., Z. Iqbal, Zia-ur-Rahman, M. Zargham Khan, F. Muhammad., M.A. Sandhu, J.I. Sultan. 2009. Disposition kinetics and optimal dosage of ciprofloxacin in domestic ruminant species. Acta Veterinaria Brno 78: 155-162. • Mansur A. Sandhu, Asif Riaz, Zia U. Rahman, Sajjad U. Rahman, Nemat Ullah 2010. Somatotrophs and lactotrophs: an immunohistochemical study of Gallus domesticus pituitary gland at different stages of zinc induced molt. Euro. J. Histochem. 54:e25: 123-127. • Anwaar Ahmed, Asif Ahmad, Nauman Khalid, Angel David, Mansoor Abdullah Sandhu, Muhammad Atif Randhawa, Hafiz Ansar Rasul Suleria 2011. A Question mark on Iron Deficiency in 185 Million People of Pakistan: Its Outcomes and Prevention. Crit. Rev. Food Sci. Nutri. (In Press). • Mansur A. Sandhu, Fahd Q. Mirza, Farhan Afzal, Nasir Mukhtar 2012. Effect of heat stress on cellular and humoral immunity and its cure with α-tocopherol in meat type birds. Livestock Sci. 148: 181-188. • Mansur A. Sandhu, Mohsin Raza, Farhan Afzal, Fawwad Ahmad, Muhammad S. Anjum 2012. Managing immune-competence of broiler chicken through vitamin E supplementation in low ambient temperature. Int. J. Agri. Biol. (In Press). • Mansur A. Sandhu, Abdullah A. Saeed, Muhammad S. Khilji, Anwaar Ahmed and Nauman Khalid. 2013. Genotoxicity evaluation of chlorpyrifos: A gender related approach in regular toxicity testing. J. Toxicol. Sci. 38(2): 237-244. • Books. • 2009 Induced Molting: Production and Physiology ○ ISBN-13: 978-3639185195 • Papers published in refereed conference proceeding. • Anjum, M.S., Zia-ur-Rahman, M. Akram, T.H. Shah, M.A. Sandhu 2002. Performance of layers under various heat combating practices during summer. 15th Conf. On Biometeorology/Aerobiology and 16th Congress of Biometeorology. 28th October–1st November, Kansas City, Missouri, USA PP: 74-75. • Anjum, M.S., Zia-ur-Rahman, M. Akram, S. Mahmood, M.A. Sandhu 2002. Haematochemical profile of commercial layers influenced by heat combating systems during high ambient temperature. 15th Conf. On
--	--

	Biometeorology/Aerobiology and 16th Congress of Biometeorology. 28th October – 1st November, Kansas City, Missouri, USA PP: 102-103. • Jeff Schwartz, Mansur Sandhu, Kirsten Farrand, Eva Szarek, Caroline McMillen, Daniel Houghton, Ross Young, Nurul-Arina Saleh 2010. Effect of surgical isolation of pituitary from hypothalamic influences on corticotroph development in fetal sheep. The FASEB J. 24: 629.4. • Paper or extended abstracts published in conference proceeding. • Sandhu, M.A., M.T. Javed, F. Rizvi, Zia-ur-Rahman 2002. Pathological effects of supplemental inorganic chromium chloride, nicotinic acid and copper sulfate on health of broiler. Regional Seminar on Prevalent and Newly Emerging Poultry Diseases. Pakistan, April 15-16. PP: 07. • Sajjad-ur-Rahman, I. Hussain, M. Siddique, M.A. Sandhu 2002. Isolation and treatment of colibacillosis in broiler. Regional Seminar on Prevalent and Newly Emerging Poultry Diseases. Pakistan, April 15-16. PP: 08. • Tariq M., F. Ahmad, M.A. Sandhu 2002. Effect of chromium chloride and nicotinic acid and copper sulfate on body weight, serum proteins, hematological parameters and organs in broiler. Regional Seminar on Prevalent and Newly Emerging Poultry Diseases. Pakistan, April 15-16. PP: 15. • Sandhu, M.A., Zia-ur-Rahman, Arfan Yousaf 2002. Biochemical changes in the hydrated fluid of different ruminants. 10th International Congress of Parasitology. Canada, August 04-08. • Zia-ur-Rahman, Arfan Yousaf, M.A. Sandhu 2002. Trace elements and electrolyte studies in cystic fluid in liver and lungs of Echinococcus granulosus infected camel. 10th International Congress of Parasitology. Canada, August 04-08. • Arfan Yousaf, Zia-ur-Rahman, M.A. Sandhu 2002. Hematochemical response to ectoparasite, infestation in camel. 10th International Congress of Parasitology. Canada, August 04-08. • Aslam A., M. Nawaz, I. Ali, Zia-ur-Rahman, M.A. Sandhu 2002. Determination of productive and reproductive traits in mountain camel. EAAP Cairo, Egypt September 01-04. • Zia-ur-Rahman., Nabeela Aslam, Kausar Almas, Mansur Abdullah Sandhu 2004. Effect of fasting on biochemical, hormonal and trace elements in normal and diabetic male rats. International Nutrition Conference, Lahore – Pakistan. March. • Zia-ur-Rahman., Rashidah Javed, Naheed Abbas, Mansur Abdullah Sandhu 2004. Effect of fasting trace elements in young male rats. Biological Society of Pakistan, Government College University, Lahore Pakistan. March 9-11. • Zia-ur-Rahman., Samreen Manzoor, Nighat Bhatti, Mansur Abdullah Sandhu 2004. Metabolic, minerals and thyroid hormones profile during early dialysis. Pakistan Zoological Society, Allama Iqbal Open University, Islamabad – Pakistan. • Zia-ur-Rahman, M.A. Sandhu, T. Siddique, A. Yousaf 2004. Effect of combined abamectin and bifenthrin on macro and micromineral tissue concentrations of black rock pigeons. 55th Annual Meeting of ACVP-ASVCP, Coronado Springs Resort in Orlando, Florida. USA. November 13-17 • Yousaf A., Zia-ur-Rahman, T. Siddique, M.A. Sandhu 2004. Effect of combined abamectin and bifenthrin administration on hematological and plasma biochemical profile of black rock pigeons (Columba livia). 55th Annual Meeting of ACVP-ASVCP, Coronado Springs Resort in Orlando, Florida. USA. November 13-17 • Mansur Abdullah Sandhu, Sahiha Mansur, Muhammad Shahbaz Yousaf, Zia-ur-
--	---

	Rahman 2004. Immunomodulatory effects of chromium picolinate on immunological profile in aging rats. 8th HLDA/34ASI Adelaide, Australia. December 12-16. • Zia-Ur-Rahman, Mansur Abdullah Sandhu, Muhammad Shahbaz Yousaf 2004. Dietary antioxidant effects on buffalo blood, colostrums and milk polymorphonuclear cells. 8th HLDA/34ASI Adelaide, Australia. December 12-16. • Muhammad Sohail Sajjad, Zafar Iqbal, Mansur Abdullah Sandhu, Ghulam Muhammad, Muhammad Saqib, Muhammad Umair Iqbal 2004. Ivermectin and its influence on the immune response of rabbits. 8th HLDA/34ASI Adelaide, Australia. December 12-16. • Abdullah A. Saeed, Muhammad S. Khilji, Mansur A. Sandhu 2012. Chlorpyrifos induced blood lymphocytes DNA aberrations in rats. National Science Conference, Rawalpindi, Pakistan. January 10-12. Articles published in popular press. Sandhu, M.A., Zia-ur-Rehman, 2007. Production of low priced healthy eggs. Business Recorder, January 20th. Research reports submitted to sponsors. 2009 Immunological Changes in the Broiler Chickens Exposed to Different Degree of Environmental Temperatures 2011 The Effects of In Vitro Chlorpyrifos Exposure on Hormonal Status and Endocrine Disruptive Like Effects in Rats Manuscripts submitted for publication. (Include where and when submitted).												
Research Grants and Contracts.	Entries should include: <table><thead><tr><th>Date</th><th>Title</th><th>Agency/Organization</th><th>Amount</th></tr></thead><tbody><tr><td>2008</td><td>Immunological changes in the broiler chickens exposed to different degree of environmental temperatures</td><td>PMAS/AAUR</td><td>0.14 M</td></tr><tr><td>2010</td><td>The effects of in vitro chlorpyrifos exposure on hormonal status and endocrine disruptive like effects in rats</td><td>PMAS/AAUR</td><td>0.12 M</td></tr></tbody></table> Both projects have been completed	Date	Title	Agency/Organization	Amount	2008	Immunological changes in the broiler chickens exposed to different degree of environmental temperatures	PMAS/AAUR	0.14 M	2010	The effects of in vitro chlorpyrifos exposure on hormonal status and endocrine disruptive like effects in rats	PMAS/AAUR	0.12 M
Date	Title	Agency/Organization	Amount										
2008	Immunological changes in the broiler chickens exposed to different degree of environmental temperatures	PMAS/AAUR	0.14 M										
2010	The effects of in vitro chlorpyrifos exposure on hormonal status and endocrine disruptive like effects in rats	PMAS/AAUR	0.12 M										
Other Research or Creative Accomplishments	NA												
Selected Professional Presentations	NA												

Name	Dr. RIAZ HUSSAIN															
Personal	HOUSE#2, STREET#11, ABDULLA TOWN, BAHRA KAHUE, ISLAMABAD															
Experience	<table><tr><td>Date,</td><td>Title,</td><td>Institution.</td></tr><tr><td>14-01-2012 TO to-date</td><td>ASSISTANT PROFESSOR (BS-19)</td><td>Deptt. OF BIOMEDICAL SCIENCES (HISTOLOGY), FV&AS, PMAS-ARID AGRI. UNI. RWP</td></tr><tr><td>14-01-2011 TO 14-01-2012</td><td>ASSISTANT PROFESSOR (IPFP)</td><td>UCV&AS., THE ISLAMAI UNIVERSITY OF BAHAWALPUR</td></tr><tr><td>2006 TO 2010</td><td>Ph. D., INDIGENOUS FELLOWSHIP</td><td>Deptt. OF ANATOMY, FVS, UNI. OF AGRICULTURE FAISALABAD</td></tr><tr><td>03-09-2002 TO 19-01-2006</td><td>LECTURER</td><td>Deptt. OF ANATOMY, FVS, UNI. OF AGRICULTURE, FAISALABAD</td></tr></table>	Date,	Title,	Institution.	14-01-2012 TO to-date	ASSISTANT PROFESSOR (BS-19)	Deptt. OF BIOMEDICAL SCIENCES (HISTOLOGY), FV&AS, PMAS-ARID AGRI. UNI. RWP	14-01-2011 TO 14-01-2012	ASSISTANT PROFESSOR (IPFP)	UCV&AS., THE ISLAMAI UNIVERSITY OF BAHAWALPUR	2006 TO 2010	Ph. D., INDIGENOUS FELLOWSHIP	Deptt. OF ANATOMY, FVS, UNI. OF AGRICULTURE FAISALABAD	03-09-2002 TO 19-01-2006	LECTURER	Deptt. OF ANATOMY, FVS, UNI. OF AGRICULTURE, FAISALABAD
Date,	Title,	Institution.														
14-01-2012 TO to-date	ASSISTANT PROFESSOR (BS-19)	Deptt. OF BIOMEDICAL SCIENCES (HISTOLOGY), FV&AS, PMAS-ARID AGRI. UNI. RWP														
14-01-2011 TO 14-01-2012	ASSISTANT PROFESSOR (IPFP)	UCV&AS., THE ISLAMAI UNIVERSITY OF BAHAWALPUR														
2006 TO 2010	Ph. D., INDIGENOUS FELLOWSHIP	Deptt. OF ANATOMY, FVS, UNI. OF AGRICULTURE FAISALABAD														
03-09-2002 TO 19-01-2006	LECTURER	Deptt. OF ANATOMY, FVS, UNI. OF AGRICULTURE, FAISALABAD														
Honor and Awards	Higher Education Commission (HEC) PhD Indigenous Fellowship (Phase-II) 2006 Award of Honor, year 2004-05. Faculty of Veterinary Science, UAF Certificate of Honor, Year 2004. For securing 1st position, M.Sc. (Hons.) Veterinary Anatomy, FVS, UAF. Certificate of Honor, Year 2004-05, for member of Faculty sports advisory council (Hockey). FVS. UAF. Certificate of Performance, National Volunteer Movement (NVM) Services in Earthquake relief operation at Batagram, from Commanding Officer, 104 Engineer Battalion, Kharain Cantonment.															
Memberships	Member of World Association of Veterinary Anatomists (WAVA) Member of American Association of Veterinary Anatomists (AAVA) Member of International Society of Camelid Research and Development (ISOCARD) Registered Veterinary Medical Practitioner (RVMP), Islamabad. Member of Pakistan Veterinary Medical Association (PVMA) Islamabad.															
Graduate Students Postdocs Undergraduate Students																
Honor Students	<table><tr><td>Years</td><td>Degree</td><td>Name</td></tr><tr><td>2010-(Research)Under progress</td><td>PhD (Poultry Science)</td><td>Javed Iqbal</td></tr></table> (Member of supervisory Committee)	Years	Degree	Name	2010-(Research)Under progress	PhD (Poultry Science)	Javed Iqbal									
Years	Degree	Name														
2010-(Research)Under progress	PhD (Poultry Science)	Javed Iqbal														
Services Activity	Research & teaching Member of internship evaluation committee FV&AS															
Brief Statement of Research Interest	My research interests are focused on understanding the ecological and environmental effect on anatomy of the male reproductive tract and to correlate it with the physiological behavioral and hormonal status in the seasonal breeders. I am also focusing on identifying and quantifying the cells of Adenohypophysis of fetal and dam pituitary glands and the distribution of Corticotrophs, along with other cells including thyrotrophs, lactotrophs, Somatotrophs, LH and FSH producing cells of gonadotrophs, & to understand the stress effect on HPA & HPG axis															
Publications	- Articles published by refereed journals. - Pasha, R. H., Qureshi, A. S., Rehman, Z. U., Khamas, W. A. 2013. Seasonal anatomical changes in the testis of one-humped camel: a review. European Journal of Anatomy (In Press). - Qureshi, A. S., Shah, M., Rehan, S., R. H. Pasha, Ullah, H. A. 2013. Histomorphometrical investigations on the heart, kidneys and adrenal glands in normal Teddy Goats (Capra hircus) using image analysis system. Pakistan Veterinary Journal 33(2): 155-159. : http://www.pvj.com.pk/in_press/11-															

	478.pdf. • Pasha, R. H., Qureshi, A. S., Khanum, S. A., Khamas, W. A. 2013. Sex hormones and sexual behavior in male dromedaries (<i>Camelus dromedarius</i>). Zoo Biology (under review) • Pasha, R. H., Qureshi, A. S., Khamas, W. A. 2013. A survey of camel production in three different ecological zones of Pakistan. International Journal of Agriculture and Biology (IJAB) 15: 62-68. • http://www.fspublishers.org/ijab/past-issues/IJABVOL_15_NO_1/9.pdf • Pasha, R. H., Qureshi, A. S., Khanum, S. A., Lodhi, L. A., Ullah, N., Khamas, W. A. 2012. Seasonal and ecological variations in the serum steroid hormones concentrations of one-humped male camel in Pakistan. Reproduction in Domestic Animals 47 (Suppl. 4), 610. Doi: 10. 1111/j.1439-0531.2012.02119.x. • Pasha, R. H., Qureshi, A. S., Lodhi, L. A., Jamil, H. 2011. Biometric and ultrasonographic evaluation of the testis of one-humped camel. Pakistan Veterinary Journal 31 (2): 129-133. http://pvj.com.pk/in_press/10-097.pdf • Pasha, R. H., Qureshi, A. S., Lodhi, L. A., Jamil, H., Masood, A., Hamid, S., Iqbal, J., Kamran Z., Khamas, W. A. 2011. Seasonal changes in the anatomy of testis of one-humped camel (<i>Camelus dromedarius</i>). Journal of Camel Practice and Research 18(1): 145-153. http://www.camelsandcamelids.com/detial/June_2011_JCPR.pdf, http://www.indianjournals.com/ijor.aspx?target=ijor:jcpr&volume=18&issue=1&article=026 • Kamran, Z., Nisa, M. U., Nadeem, M. A., Sarwar, M. S., Amjad, S., Pasha, R. H., Nazir, M. S. 2011. Effect of low crude protein diets with constant metabolizable energy on performance of broiler chicken from one to thirty-five days of age. Indian Journal of Animal Sciences 81(11): 79-100. http://epubs.icar.org.in/ejournal/index.php/IJAnS/article/view/12683 • Shah, M., Qureshi, A. S., Rehan, S., Hussain, R. 2010. Morphometric evaluation of blood pressure regulating organs in teddy goats (<i>Capra hircus</i>) in relation to age and sex. Pakistan Veterinary Journal 30(1): 49-52. http://www.pvj.com.pk/pdf-files/30_1/49-52.pdf • Qureshi, A. S., Pasha, R. H., 2009. Morphometric evaluation of mammary gland in buffaloes as influenced by different physiological status. Pakistan Journal of Zoology 9: 797-801. http://zsp.com.pk/Special%20Supplement%20Series%20_Contents_.pdf • Hussain, R., Qureshi, A. S. 2007. Age related changes in the morphometric parameters of the heart, kidneys and adrenal glands of nili-ravi buffalo (<i>Bubalus bubalis</i>). Italian Journal of Animal Sciences 6(2): 995-998. http://www.aspajournal.it/index.php/ijas/article/view/ijas.2007.s2.995/1136 • Qureshi, A. S., Hussain, R. 2007. Morphometric evaluation of the blood pressure related organs in nili-ravi buffalo (<i>Bubalus bubalis</i>) with advancing age. Italian Journal of Animal Sciences 6 (2): 961-964. • http://www.aspajournal.it/index.php/ijas/article/view/ijas.2007.s2.961/1125 • Dad, R. K., Shakoor, A., Avais, M., Muhammad, G. Hussain, R. 2007. Serology based immunological cross-reactivity among various isolates of <i>Streptococcus agalactiae</i> from mastitic buffaloes. Italian Journal of Animal Sciences 6 (2): 865-868. http://www.aspajournal.it/index.php/ijas/article/view/ijas.2007.s2.865/1097 • Books.
--	--

	• Pasha, R. H. Qureshi, A. S. 2012. Microscopy and Ultrasonography of the Testis of Dromedary Camel. LAP LAMBERT Academic Publishing GmbH & Co. KG, Germany. ISBN# 978-3-659-19137-4. http://www.amazon.com/Microscopy-Ultrasonography-Testis-Dromedary-Camel/dp/365919137X • Papers published in refereed conference proceeding. • Fazlani, S. A., R. Rind, R. Hussain and A. S. Qureshi, 2008. Bacteriological study on the clinical mastitis in camel (<i>Camelus dromedaries</i>). In proceedings: National Seminar on Animal Health- Reflections and Future Horizons, 06 March 2008. Faculty of Veterinary Science, University of Agriculture, Faisalabad. • Paper or extended abstracts published in conference proceeding. (refereed on the basis of abstract) • Pasha, R. H., Qureshi, A. S., Khamas, W. A., Schwartz, H. J. Seasonality of rutting behavior in male dromedaries. Proc. The Scientific Conference of Camel Research and Production, 17-18 April, 2013, Khartoum, Sudan, pp 36. • Pasha, R. H., Qureshi, A. S., Khamas, W. A. Effect of exogenous treatment on sexual activity of male one-humped camel during non-breeding season in Pakistan. Proc. 33rd Pakistan Congress of Zoology (International), April 2-4, 2013, Pakistan Museum of Natural History, Islamabad, Pakistan, pp. 114. • Khilji, M. S., Sandhu, M. A., Arif, A., Saeed, A., Pasha, R. H., Sohoo, M. R. Immune response of meat type chicken during extreme weather Stress. Proc. 33rd Pakistan Congress of Zoology (International), April 2-4, 2013, Pakistan Museum of Natural History, Islamabad, Pakistan, pp. 111-112. • Rehman, Z., Haq, A. U., Pasha, R. H., Ahmad, F., Mukhtar, N., Ullah, Z. Impact of garlic and ginger supplementation on meat characteristics, blood metabolites and hematological parameters of broilers. Proc. 33rd Pakistan Congress of Zoology (International), April 2-4, 2013, Pakistan Museum of Natural History, Islamabad, Pakistan, pp. 362-363. • Pasha, R. H., Qureshi, A. S., Zafar, M. A., Ullah, N., Khamas, W. A. Morphometry of seasonal changes in testis of one-humped camel in the ecology of Pakistan. Proc. XXIXth Congress of European Association of Veterinary Anatomists (EAVA), July 25-28, 2012 Stara Zagora, Bulgaria. Bulgarian Journal of Veterinary Medicine. 15 (Suppl. 1), pp 23. • Pasha, R. H., Qureshi, A. S., Lodhi, L. A. B-mode ultrasonographic imaging of the testis and epididymis of one-humped camel (<i>Camelus dromedarius</i>). Proc. XXVIth World Buiatrics Congress, Nov. 14-18, 2010, Santiago de Chile, Chile. • Devrajani, K., Fazlani, S. A., Pasha, R. H. Shah, Q. A., Faraz, S., Qureshi, A. S., Rajput, I. R. Antibiotics Sensitivity Of Micro-Organisms Identified From Camel Wounds. Proc. The International Camel Symposium “Linking Camel Science and Development for Sustainable Livelihood” 9-10 June, 2010, Garissa, Kenya. • Pasha, R. H., Qureshi, A. S., Lodhi, L. A. Seasonal variations in some serum minerals of healthy mature one-humped camel (<i>Camelus dromedarius</i>) in Punjab, Proc. Pakistan. 36th All Pakistan International Science Conference, 21-23 July, 2010, University of Azad Jammu and Kashmir. • Fazlani, S. A., Rind, R., Hussain, R. Qureshi, A. S. Bacteriological study on the clinical mastitis in camel (<i>Camelus dromedaries</i>). Proc. National Seminar on Animal Health- Reflections and Future Horizons, 06 March 2008. Faculty of Veterinary Science, University of Agriculture, Faisalabad.
--	---

	• Fazlani, S. A., Hussain, R. Rind, A., Qureshi, A. S. Antimicrobial susceptibility of bacterial organisms identified from mastitic milk samples of camel. Proc. 2nd International Conference of (ISOCARD), March, 2009, Tunisia, pp. 125. • Hussain, R., Qureshi, A. S. Histomorphometrical studies on the mammary gland skin of nili-ravi buffalo (<i>Bubalus bubalis</i>). Proc. Hungarian Veterinary Journal (Magyar Állatorvosok Lapja), Vol. (130), Suppl. (III), pp. 130. • Hussain, R., Qureshi, A. S. Morphometry of age induced histological changes in the heart, kidneys and adrenal glands of Nili- Ravi buffalo (<i>Bubalus bubalis</i>). Proc. XXVI Congress of the European Association of Veterinary Anatomists, Messina (Italy), 19-22 July 2006. Abstract In: Italian J. Anat. Embryol. Vol. 111, Suppl. #1 al Fasc.3- July-September, 2006 Pp. 211. • Hussain, R. Qureshi, A. S. Macromorphometry of the age induced anatomical changes in the adrenal glands of Nili-Ravi buffalo (<i>Bubalus bubalis</i>). Proc. 3rd National Conf. on Agriculture & Animal Sci. 21-23 November 2006. Sindh Agriculture Uni. Tandojam. • Hussain, R., Sarwar, A. Light microscopic studies on the adrenal cortex of two age groups of Nili- Ravi buffalo (<i>Bubalus bubalis</i>). Proc. 1st Kashmir Int. Sci. Conf. 20-27 September 2005. Uni. of AJ & K, Muzaffarabad. • Articles published in popular press. • Hussain, R., A. Sarwar and M. K. Saleemi, 2008. Reproductive Anatomy, Physiology and performance of female camel. http://www.agrilive.com.pk/articles/47.htm (Courtesy Vet. News and Views). • Hussain, R. and A. Sarwar, 2007. Economic importance of buffalo (<i>Bubalus bubalis</i>). Agro-Veterinary News (AVN), 18(10) January 2007; Pp. 6-7. (To be continued). • Hussain, R. and A. S. Qureshi, 2007. Economic importance of buffalo (<i>Bubalus bubalis</i>). Agro-Veterinary News (AVN), ISSN 1728-1482, 18(11) February 2007; Pp. 4-8. (To be continued). • Hussain, R. and A. S. Qureshi, 2007. Economic importance of buffalo (<i>Bubalus bubalis</i>). Agro-Veterinary News (AVN), ISSN 1728-1482, 18(12) March 2007; Pp. 06-07. • Hussain, R. and A. S. Qureshi, 2007. Reproductive anatomy, physiology and performance of female camel (<i>Camelus dromedarius</i>). Veterinary Professionals-VetPro.26 February 2007. http://www.vetpro.com. • URL: http://www.vetpro.co.uk/modules.php?name=News&file=article&sid=214 • Hussain, R. and A. S. Qureshi, 2007. Special anatomy of camel to cope with hot desert climate. Veterinary Professionals-VetPro.28 February 2007. • URL: http://www.vetpro.co.uk/modules.php?name=News&file=article&sid=230 • Hussain, R., A. S. Qureshi and A. Masood, 2007. Global Warming: A threat to human and animal health. Agro-Veterinary News (AVN), ISSN 1728-1482, 19(1) April 2007; Pp. 04 & 09. • Saleemi, M. K., R. Z. Abbas and R. Hussain, 2007. Heat Stress in Poultry. Vet. News & Views, 27(2), 08-15 May 2007; Pp.03-04. • Hussain, R., A. Sarwar and M. K. Saleemi, 2007. Reproductive Anatomy, Physiology and performance of female camel (<i>Camelus dromedarius</i>). Vet. News & Views, 28(2), 16-23 May 2007; Pp.02-03. • Hussain, R., A. Sarwar and R. K. Dad, 2007. Implications of biotechnology for the livestock production. Agro-Veterinary News (AVN), ISSN 1728-1482,
--	--

	19(4), July, 2007; Pp. 6-7. • Hussain, R., A. S. Qureshi and A. Masood, 2007. Up above the sky. Dawn Sci-tech World. Saturday 17 March, 2007. Pp. 03. • Hussain, R. and A. S. Qureshi, 2007. Animal comfort zone. Dawn Sci-tech World. Saturday 21 April 2007. Pp. 03. • Hussain, R., A. S. Qureshi and S. Ahmad, 2007. Skin deep secrets. Dawn Sci-tech World. Saturday 26 May 2007. • Ashfaq, M., S. Ahmed, M. A. Ali, and R. Hussain, 2007. Pesticide Pollution. The Nation, Money Plus, November 26, 2007. Pp. 15-16. • Hussain, R., A. S. Qureshi and W. Babar, 2007. Tough Beings. The Nation, Sunday Plus, 23 September 2007. Pp. 26. • Saleemi, M. K. and R. Hussain, 2007. Avian Flu: What you need to know. Agro-Veterinary news (AVN), 19(7) October 2007. • Hussain, R., A. Sarwar and M. G. Shah, 2006. Reproductive efficiency, anatomy and management of mares. Vet. News & Views, 14(1), 1-7 February 2006; Pp.2-3 • Hussain, R., A. Sarwar and N. Ahmed, 2006. Epigrammatic view of the biological effects, history and use of diagnostic ultrasonography in veterinary & medical sciences. Vet. News & Views, 27(1), 8-15 May 2006; Pp. 6 • Hussain, R., A. Sarwar and M. G. Shah, 2006. Reproductive efficiency, anatomy and management of mares. Agro- Veterinary News (AVN), 18(3) June 2006. Pp.12-14. (Courtesy Vet. News & Views) to be continued. • Hussain, R., A. Sarwar and M. G. Shah, 2006. Reproductive efficiency, anatomy and management of mares. Agro- Veterinary News (AVN), 18(4) July 2006. Pp.16& 19. (Courtesy Vet. News & Views) to be continued... • Hussain, R., A. Sarwar and M. G. Shah, 2006. Reproductive efficiency, anatomy and management of mares. Agro- Veterinary News (AVN), 18(5) August 2006. Pp.08. (Courtesy Vet. News & Views) to be continued... • Hussain, R., A. Sarwar and M. G. Shah, 2006. Reproductive efficiency, anatomy and management of mares. Agro- Veterinary News (AVN), 18(6) September 2006. Pp. 08-09. (Courtesy Vet. News & Views). • Hussain, R., A. Sarwar and M. G. Shah, 2006. Economic importance of buffalo (<i>Bubalus bubalis</i>) in Pakistan and other south Asian countries. Vet. News & Views, 38(1), 01-07 August 2006; Pp.2- 4. (Courtesy http://www.Agrilive.com) • Hussain, R., A. Sarwar and M. K. Saleemi, 2006. Reproductive anatomy, efficiency, and production of buffalo. Vet. News & Views, 43(1), 08-15 September 2006; Pp.5-6. • Hussain, R. and A. Sarwar, 2005. What is intelligence in animals and intellectual human being? Agro- Veterinary News (AVN), 17(2) May 2005. Pp. 12-14. • Hussain, R. and A. Sarwar, 2005. DNA Vaccines. Agro- Veterinary News (AVN), 17(4) July 2005. Pp. 8&12. • Saleemi, M. K. and R. Hussain, 2005. Fowl Cholera in poultry (In Urdu). Zari Digest, University of Agriculture, Faisalabad. Pp. 67. • Hussain, R., A. Sarwar and M. G. Shah, 2005. Economic importance of buffalo (<i>Bubalus bubalis</i>) in Pakistan and other south Asian Countries. http://www.Agrilive.com (poultry & livestock information finder), December 6, 2005. • Manuscripts submitted for publication. (Include where and when submitted)
--	--

	• Pasha, R. H., Qureshi, A. S., Khanum, S. A., Khamas, W. A. 2013. Sex hormones and sexual behavior in male dromedaries (Camelus dromedarius). Zoo Biology (under review) (submitted: May.2013) • Pasha, R. H., Qureshi, A. S., Rehman, Z. U., Khamas, W. A. 2013. Seasonal anatomical changes in the testis of one-humped camel: a review. European Journal of Anatomy (In Press). (Submitted: February 2013.... Will be online in July 2013) •												
Research Grants and Contracts.	Entries should include: SUBMITTED PROJECTS (In Review): <table><thead><tr><th>Date</th><th>Title</th><th>Agency/Organization</th></tr></thead><tbody><tr><td>10-01-2013</td><td>Effect of maternal high and low protein diets On Hypothelmic-pituitary-adrenal axis function And blood metabolites in sheep dam & fetus</td><td>International Foundation for science (IFS)</td></tr><tr><td>May, 2013</td><td>Growth performance and bone health in Ostrich under different feeding regime in Semi-arid environment</td><td>Pakistan Science Foundation (PSF)</td></tr><tr><td colspan="2">Total Awards Amount</td><td>7.8 million PKR</td></tr></tbody></table>	Date	Title	Agency/Organization	10-01-2013	Effect of maternal high and low protein diets On Hypothelmic-pituitary-adrenal axis function And blood metabolites in sheep dam & fetus	International Foundation for science (IFS)	May, 2013	Growth performance and bone health in Ostrich under different feeding regime in Semi-arid environment	Pakistan Science Foundation (PSF)	Total Awards Amount		7.8 million PKR
Date	Title	Agency/Organization											
10-01-2013	Effect of maternal high and low protein diets On Hypothelmic-pituitary-adrenal axis function And blood metabolites in sheep dam & fetus	International Foundation for science (IFS)											
May, 2013	Growth performance and bone health in Ostrich under different feeding regime in Semi-arid environment	Pakistan Science Foundation (PSF)											
Total Awards Amount		7.8 million PKR											
Other Research or Creative Accomplishments	NIL												
Selected Professional Presentations	NIL												

Name	Dr. Asif Riaz
Personal	Department of Veterinary Biomedical Sciences, Faculty of Veterinary and Animal Sciences, PMAS-Arid Agriculture University, Rawalpindi
Experience	List current appointment first, each entry as follows: Date, Title, Institution. 22nd January, 2008 Lecturer PMAS-Arid Agriculture University Jun, 2007 VO Brook Hospitals for Equines
Honor and Awards	Merit Scholarship from Board of Intermediate & Secondary Education Faisalabad
Memberships	Pakistan Veterinary Medical Council
Graduate Students Postdocs Undergraduate Students Honor Students	Years Degree Name 2013 MSc(Hons) Dr. Farhan Farooq Polutry Science (Member Supervisory Committee)
Services Activity	Member Departmental SAR Committee
Brief Statement of Research Interest	Molecular Characterization of TRPC and beta catenin through western blotting and immunocytochemistry Molecular comparative evaluation of pyrazole derivatives (a new class of Calcium channel blockers) in HEK and RBL cells Toxicokinetics of topically applied drugs Drug simulation and modeling for in-vivo and in-vitro assays Cells communication in response to various drugs
Publications	• Zafar M. A., Yousaf, A., Raza, F., Riaz, A. 2013. Corticosteroid therapy in the treatment of idiopathic immune-mediated anaemia in a goat; a case report. Pakistan Veterinary Journal (Submitted Manuscript). • Khan I. A., Khan, A., Abubakar, M., Riaz, A., Zafar, M. A., Raza, F., Asim, M. 2012. Studies on some sero-biochemical and histopathological changes in goats affected with Peste des Petits Ruminants. The 2nd National Congress of Pathology, September 19-23, 2012, Aydin, Turkey. Pp: 34 • Imtiaz Ahmad Khan, Ahrar Khan, Azhar Hussain, Asif Riaz and Asma Aziz, 2011. Haemato-biochemical alterations in cross bred cattle affected with bovine theileriosis in semi arid zone. Pak. Vet. J. 31(2): 137-140 • Sandhu M. A., Z. U. Rahman, A. Riaz, S. U. Rahman, I. Javed and N. Ullah, 2010. Somatotrophs and lactotrophs: an immunohistochemical study of Gallus domesticus pituitary gland at different stages of induced moult. Eurp. J. Histochem. 54:123-127 • Muhammad F., A. Riaz, M. Akhtar, M. I. Anwar, F. Mahmood, I. Javed, T. Khaliq, Z. U. Rahman, F. H. Khan and S. Bashir, 2008. Estimation of atrazine in the stratum corneum and its toxic effects in skin following topical application to rabbits. Toxicol. Mechanisms and Methods 1: 1-7.
Research Grants and Contracts.	Date: 2012-13 Title: Comparative Epidermal Toxicity Studies of Lambda Cyhalothrine and Chlorpyrifos after Topical Application in Rabbits Agency/Organization: PMAS-Arid Agriculture University Total Awards Amount: 0.143 million Funded and in progress
Other Research or Creative Accomplishments	NA

Selected Professional Presentations	International Conferences Khan I. A., Khan, A., Abubakar, M., Riaz, A., Zafar, M. A., Raza, F., Asim, M. 2012. Studies on some sero-biochemical and histopathological changes in goats affected with Peste des Petits Ruminants. The 2nd National Congress of Pathology, September 19-23, 2012, Aydin, Turkey. Pp: 34 Muhammad F., A. Riaz , M. Akhtar, M. I. Anwar, F. Mahmood, I. Javed , T. Khaliq, Z. U. Rahman, F. H. Khanand and S. Bashir, 2007. Estimation of atrazine in the stratum corneum and its toxic effects in skin following topical application to rabbits. 46th Annual meeting and Tox Expo(Society of Toxicology) Charllot, North Carolina, USA. Pp: 267
--	---

Name	Sumaira Hassan
Personal	H no .J/434 St no.9 Mohallah Ellahi Baksh Rawalpindi 0333-5181239
Experience	List current appointment first, each entry as follows: 12.12.201 Lecturer PMAS Arid Agriculture University Rwalpindi Three months teaching Experience in Govt. Waqar-un-Nisa College for Women Rawalpindi from 1-10-2006-7-01-2007
Honor and Awards	
Memberships	
Graduate Students Postdocs Undergraduate Students Honor Students	NIL
Services Activity	Incharge of Faculty library since 2007 to date. Member of directorate of student affairs for arranging naat competition from 2008-2009
Brief Statement of Research Interest	Dissection of Animals, Handling of animals ,Histology, Simple Microscopy UV/Visible Light Spectrophotometry, Liver Function Test, Cytogenetics From Bone Marrow, Cytogenetics From Blood ,Serial Dilution metod, Radioimmunoassay
Publications	Conference Paper 1.Hussain S., I. A. Khan, A. Khan, M. Asim, S. Hassan, M. Kamran, 2012. Prevalence of gastrointestinal parasites of sheep and goat in and around the district Khushab, Pakistan. The 2nd National Congress of Pathology, September 19-23, 2012, Aydin, Turkey. Pp: 118
Research Grants and Contracts.	NIL
Other Research or Creative Accomplishments	NIL
Selected Professional Presentations	Conference Paper 1.Hussain S., I. A. Khan, A. Khan, M. Asim, S. Hassan, M. Kamran, 2012. Prevalence of gastrointestinal parasites of sheep and goat in and around the district Khushab, Pakistan. The 2nd National Congress of Pathology, September 19-23, 2012, Aydin, Turkey. Pp: 118

Name	Imtiaz Ahmad Khan		
Personal	Dept. of Pathobiology, Faculty of Vet. and Animal Sciences, PMAS-AAUR. Cell# 0300-4284827		
Experience	Date, 16-12-2009 to date 25-09-2006 to 15-12-2009 01-02-2006 to 31-08-2006 18-02-2003 to 01-04-2005	Title, Assistant Professor Veterinary Officer Veterinary Officer Research Associate	Institution. PMAS-AAUR L&DD (Govt. of Punjab) L&DD (Govt. of Punjab) UAF.
Honor and Awards	Stood First in M.Sc (Hons.) Vet. Pathology Final Exam 2002 UAF.		
Memberships	Pakistan Veterinary Medical Council		
Graduate Students Postdocs Undergraduate Students Honor Students	Nil		
Services Activity	Tutorial Group In-charge, Coordinator for extracurricular activities FV&AS Secretary, Faculty board of studies FV&AS, Coordinator, Departmental SAR Committee.		
Brief Statement of Research Interest	Experimental Pathology, epidemiology of zoonotic diseases, Wildlife Diseases, Respiratory Disease of Animals		
Publications	- INTERNATIONAL PUBLICATIONS: - Khan and A. Khan. Prevalence and risk factors of bovine tuberculosis in Nili Ravi buffaloes in the Punjab Pakistan. Italian Journal of Animal Sciences Vol.6 (Suppl. 2), 817-820, 2007 - Muhammad Tariq Javed, Muhammad Amir Sarwar, Razia Kausar and Imtiaz Ahmad. Effect of feeding different levels of formalin (37% formaldehyde) and urea on broiler health and performance. Veterinarski Arhiv 72:(5)285-302, 2002 - NATIONAL PUBLICATIONS: - Imtiaz Ahmad Khan, Ahrar Khan, Azhar Hussain, Asif Riaz and Asma Aziz. Haemato-biochemical alterations in cross bred cattle affected with bovine theileriosis in semi arid zone. (Pak Vet J, 31(2): 137-140, 2011) M. Nisar, J. A. Khan, M. S. Khan and I. A. Khan. Prevalence of coccidiosis in dogs along with haematological alterations as a result of chemotherapeutic trial. Pak. Vet. Journal, 29(3):138-140, 2009. - Abeera Mubarak, Asif Rashid, Imtiaz Ahmad Khan and Azhar Hussain. Effect of vitamin E and selenium as immunomodulators on induced aflatoxicosis in broiler birds. Pak. J. Life Soc. Sci, 7(1): 31-34, 2009. - Imtiaz A. Khan, A. Khan, A. Mubarak and S. Ali. Factors affecting prevalence of bovine tuberculosis in Nili Ravi buffaloes. Pak. Vet. Journal 28(4): 155-158, 2008 M. Sajid, I. A. Khan, S. Ali and N. Akhtar. Immunomodulatory effects of ethanol in broilers. J. Anim. Pl. Sci. 17(1-2):5-10, 2007. M. A. Sajid, R. Ali, U. Rauf and I. A. Khan. Seroprevalence of bovine brucellosis in cattle and buffaloes. Pak. J. Sci. 59(1-2):52-54, 2007. M. A. Sajid, I. A. Khan and U. Rauf. Aspergillus fumigatus in commercial poultry flocks, A serious threat to poultry industry in Pakistan. J. Anim. Pl. Sci. 16(3-4):79-81, 2006. - Imtiaz Ahmad Khan, Shaukat Ali, M. Sajid and M. Tariq Javed. Effect of ethanol on immunity and performance in broilers. Agric. Sci. J. Pak. 3(1):11-		

	15, 2006. • Shaukat Ali, Imtiaz Ahmad Khan, M. Saeed Mian and Waheeda Ranna. Detection of Mycobacteria from milk of cattle and buffaloes at government livestock farms. Agric. Sci. J. Pak. 2(1):11-12, 2005. • CONFERENCE PAPERS • Imtiaz Ahmad Khan, Ahrar Khan, Abeera Mubarak, Azhar Hussain and Rashid Ahmad. Prevalence of Sub clinical theileriosis and babesiosis in water buffaloes in Punjab and related changes in leukocyte profile. (Pakistan J Zool. 9(Suppl. Ser.)803-806, 2009). 6th Asian Buffalo congress 2009 Lahore • Imtiaz Ahmad Khan, Ahrar Khan, Farzana Rizvi, Sajjad ur Rahman and Iftikhar Hussain. Validation of purified protein derivatives for the diagnosis of bovine tuberculosis in food animals in Pakistan. (Pakistan J Zool. 9(Suppl. Ser.)845-849, 2009). 6th Asian Buffalo congress 2009 Lahore • Imtiaz Ahmad, M. Tariq Javed, Monica Cagiola, Amer Munir and Razia Kausar. Prevalence of tuberculosis in sheep and goats in Punjab, Pakistan. Poster Presentation In Fourth Conference on Mycobacterium bovis held in Castle Dublin, IRELAND 2005. • M. T. Javed, M. Usman, M. Irfan and I. Ahmad. Epidemiology of tuberculosis in Nili Ravi Buffaloes along with its effect on haematology and serum proteins. Poster Presentation, 7th World Buffalo Congress Oct. 20-23, 2004 MANILA PHILIPPINES. • Khan I. A., Khan, A., Abubakar, M., Riaz, A., Zafar, M. A., Raza, F., Asim, M. 2012. Studies on some sero-biochemical and histopathological changes in goats affected with Peste des Petits Ruminants. The 2nd National Congress of Pathology, September 19-23, 2012, Aydin, Turkey. Pp: 34. • Hussain S., I. A. Khan, A. Khan, M. Asim, S. Hassan, M. Kamran, 2012. Prevalence of gastrointestinal parasites of sheep and goat in and around the district Khushab, Pakistan. The 2nd National Congress of Pathology, September 19-23, 2012, Aydin, Turkey. • Pp: 118.
Research Grants and Contracts.	Studies on some sero-biochemical and histopathological alterations in goats affected with Peste des petits ruminants Segment the list under following heading: (PMAS-AAUR) (2010-2011 Completed) (0.123 Million Pak. Rupees)
Other Research or Creative Accomplishments	NA
Selected Professional Presentations	Studies on some sero-biochemical and histopathological changes in goats affected with Peste des Petits Ruminants. The 2nd National Congress of Pathology, September 19-23, 2012, Aydin, Turkey Prevalence of tuberculosis in sheep and goats in Punjab, Pakistan. Poster Presentation In Fourth Conference on Mycobacterium bovis held in Castle Dublin, IRELAND 2005.

Name	Dr. Murtaz-ul-Hasan
Personal	Assistant Professor (Veterinary Parasitology), Faculty of Veterinary and Animal Sciences, PMAS Arid Agriculture University, Rawalpindi, Punjab, Pakistan Phone # 0092 3335004313
Experience	28-05-2010 to date, Assistant Professor, PMAS Arid Agriculture University Rawalpindi 06-02-2008 to 28-05-2010, Lecturer, PMAS Arid Agriculture University Rawalpindi 29-11-2006 to 04-02-2008, Research Officer, Buffalo Research Institute Pattoki District Kasur, Livestock and Dairy Development Department, Govt. of the Punjab 07-01-2006 to 16-11-2006, Teaching Assistant, University of Agriculture, Faisalabad 13-10-2004 to 14-05-2005, Research Officer, Pakistan Medical Research Council, National Health Research Complex, Shaikh Zayed Hospital, Lahore 25-03-2004 to 09-10-2004, Research Officer, University of Agriculture, Faisalabad 18-02-2003 to 17-02-2004, Research Associate, University of Agriculture, Faisalabad
Honor and Awards	First Position in M.Sc (Hons.) in Department of C.M.S
Memberships	Pakistan Veterinary Medical Council (Life Long Membership)
Graduate Students	N.A
Postdocs	
Undergraduate Students	Teaching Parasitology Courses at undergraduate level (DVM)
Honor Students	N.A
Services Activity	Teaching and Research
Brief Statement of Research Interest	Epidemiology and Chemotherapy of Parasitic Diseases
Publications	List publications • Hassan, M. U., M. Abubakar, G. Muhammad, M. N. Khan and M. Hussain, 2012. Prevalence of tick infestation (<i>Rhipicephalus sanguineus</i> and <i>Hyalomma anatolicum anatolicum</i>) in dogs in Punjab, Pakistan <i>Vet Ital.</i>, 48(1):95-98. • Hassan, M. U., M. N. Khan, M. Abubakar, H. M. Waheed, Z. Iqbal, M. Hussain, 2010. Bovine hypodermosis-a global aspect. <i>J. Trop Anim Health Prod.</i>, Dec; 42(8):1615-25. • Imran, M., S. U. Rahman, M. Abubakar, M. ul. Hassan, A. Riaz and M. Hussain, 2010. Methicilline Resistant Status of <i>Staphylococcus</i> Species Isolated from Mastitic Bovines. <i>J. Vet Scan.</i> • Hassan, M., M. N. Khan, Z. Iqbal, C.S. Ali and M.S.Sajid, 2008. Prevalence of Warble Fly Infestation in Cattle in Chakwal, Pakistan. <i>Int. J. Agri.Bio.</i> PP.337-339. • S. Khanum, M.-ur-Nisa, M. Mushtaq, M. Sarwar and M.-ul-Hassan, 2007. Influence of Replacement of Concentrate withENZOSE (Corn Dextrose) and Corn Steep Liquor on Nutrient intake in Nili Ravi Buffalo bulls. <i>Ital. J. Anim. Sci.</i> vol.6, (Suppl.2), 567-570. • A.A. Farooq, M.M. Aziz, M. Hassan, G. Muhammad and S. Inayat, 2007. Antigenic response of a live attenuated <i>Staphylococcus aureus</i> vaccine in rabbits isolated from buffalo mastitic milk. <i>Ital. J. Anim. Sci.</i> vol.6, (Suppl.2), 813-816. • Hassan, M., M. N. Khan, M. Mushtaq, Z. Iqbal, A. A. Farooq, M. S. Sajid and H. M. Waheed, 2007. Prevalence of Warble Fly Infestation in Buffalo in Chakwal, Punjab. <i>Ital. J. Anim. Sci.</i> vol.6, (Suppl.2), 942-944. • Hassan, M., G. Muhammad, C. Gutierrez, Z. Iqbal, A. Shakoore and A.

	Jabbar, 2006. Prevalence of Trypanosoma evansi Infection in Equines and Camels in the Punjab Region, Pakistan. NYAS: 139.PP.322 – 323 • Khan, M.N., Z. Iqbal, M.S. Sajid, M. Anwar, G.R. Needham and M. Hassan, 2006. Bovine hypodermosis: Prevalence and economic significance in southern Punjab, Pakistan. Vet. Parasitol., PP.386-390. • Hassan, M., G. Muhammad, C. Gutierrez, Z. Iqbal, A. Shakoor and A. Jabbar, 2006. Evaluation of different diagnostic tests for Trypanosoma evansi infection among horses and camels in the Punjab region, Pakistan. J. Camel Pract. Res., PP.95-97. • Articles published in popular press • Hasan, M., and M. A. Aziz, 2006. Livestock reduces Poverty. Dawn Economics & Business Review, October 9, 2006. • Jabbar, A., Aziz, A., Hasan, M., and Abbas, R. Z., 2006. Nanotechnology in animal health. Dawn Economics & Business Review, March Dawn Economics & Business Review, May 29, 2006. • Jabbar, A., Hasan, M., Z. Iqbal and Sandhu, Z.D., 2006. Non-chemical methods to control parasites in livestock. Dawn Economics & Business Review, March 27, 2006. • Hasan, M., Z. Iqbal and A. Jabbar, 2006. Veterinarians care for public health. Dawn Economics & Business Review, January 2, 2006. • Manual • Farooq, A. A., M. Hassan and Imdaduallah, 2007. Manual of General Surgery															
Research Grants and Contracts.	Entries should include: <table><thead><tr><th>Date</th><th>Title</th><th>Agency/Organization</th></tr></thead><tbody><tr><td>11-02-2012</td><td>Epidemiological studies for identification of risk factors of gastrointestinal parasite of cattle</td><td>Rawalpindi Thesil. PMAS Arid Agriculture University Rawalpindi</td></tr><tr><td colspan="2">Total Awards Amount</td><td>0.103 M</td></tr></tbody></table> Segment the list under following heading: Funded and in progress <table><tbody><tr><td>26-03-2013</td><td>Epidemiological studies of gastrointestinal parasite of cattle and buffalo in Chakwal.</td><td>Pakistan Science Foundation Under NSLP Endowment Fund</td></tr><tr><td colspan="2">Total Awards Amount</td><td>1.76 M</td></tr></tbody></table> Segment the list under following heading: Submitted	Date	Title	Agency/Organization	11-02-2012	Epidemiological studies for identification of risk factors of gastrointestinal parasite of cattle	Rawalpindi Thesil. PMAS Arid Agriculture University Rawalpindi	Total Awards Amount		0.103 M	26-03-2013	Epidemiological studies of gastrointestinal parasite of cattle and buffalo in Chakwal.	Pakistan Science Foundation Under NSLP Endowment Fund	Total Awards Amount		1.76 M
Date	Title	Agency/Organization														
11-02-2012	Epidemiological studies for identification of risk factors of gastrointestinal parasite of cattle	Rawalpindi Thesil. PMAS Arid Agriculture University Rawalpindi														
Total Awards Amount		0.103 M														
26-03-2013	Epidemiological studies of gastrointestinal parasite of cattle and buffalo in Chakwal.	Pakistan Science Foundation Under NSLP Endowment Fund														
Total Awards Amount		1.76 M														
Other Research or Creative Accomplishments	N.A															
Selected Professional Presentations	N.A															

Name	Saif-ur-Rehman		
Personal	Lecturer, Department of Pathobiology, FV & AS, PMAS Arid Agriculture University, Rawalpindi. 051-9290115 0321-7628262		
Experience	Date	Title	Institution
	27-12-2011 to-date	Lecturer	PMAS AAUR
	28.04.11 to 05.09.11	Visiting Faculty	UAF Sub-Campus T. T. Singh
	04-06-10 to 11.04.11	Veterinary Officer	Brooke International Hospital
	01-04-08 to 02.06.10	Research Fellow	UAF
	01-04-06 to 31.03.08	Research Associate	UAF
	Awarded university merit scholarship during DVM & M.Sc. (Hons.)		
Memberships	Member of PVMC		
Graduate Students Postdocs Undergraduate Students Honor Students	NA		
Services Activity	Research and Teaching		
Brief Statement of Research Interest	Epidemiology of bacterial and viral diseases of livestock and poultry		
Publications	Sero-prevalence of Peste des Petits Ruminants (PPR) virus in sheep and goats in Punjab province of Pakistan. - Khan H. A., M. Siddique, J. Arshad, M. Q. Khan and S. U. Rehman - Pakistan Veterinary Journal, 2007, 27(3): 109-112. Outbreak of Ornithobacterium rhinotracheale (ORT) infection in chickens in Pakistan. - Siddique M., T. Zia and S. U. Rehman - Journal of European Poultry Science, 2008, 72(5): 202-206. Epidemiological Studies on Tuberculosis in Buffalo Population in Villages around Faisalabad. - Arshad M., M. Ifrahim, M. Ashraf, S. U. Rehman and H. A. Khan. - The Journal of Animal and Plant Sciences, 2012, 22(3 Suppl.): 246-249. Cross-sectional Epidemiological Study On Mastitis In Buffaloes in Tehsil Samundry, District Faisalabad. - Liaqat Ali, Ghulam Muhammad, Muhammad Arshad, Ijaz Javed Hassan, - Muhammad Ashraf and Saif-ur-Rehman. - Pakistan Journal of Zoology. (Accepted)		
Research Grants and Contracts.	NA		
Other Research or Creative Accomplishments	NA		
Selected Professional Presentations	NA		

Name	Mr.Sajid Umar
Personal	Name:Sajid Umar S/O: Umar Khan DOB: 03-07-1985 CNIC NO: 35102-1110427-9 Marital status: married Nationality: Pakistani Permanent Address: Village Qila Ganja KhudianKhas District Kasur (Punjab) Present Address: Lecturer, Department of Pathobiology, Faculty of Veterinary and Animal sciences, PMAS, Arid agriculture University Rawalpindi, Pakistan
Experience	Four Years of teaching experience (2009-present) 20 Oct- 20 January 2009: Internship in Pathology Department UVAS Lahore Feb2009 to Sep 2011: Teaching Assistant in Pathology Department, UVAS Lahore June 2010 to Sep2011: Participated in talks shows on diseases of livestock & Poultry on RADIO PAKISTAN& SOHNI DHARTI TELEVISION August 2010-July 2011worked as Consultant Pathologist of Poultry in Lahore Zoo and postmortem section of UVAS, Lahore. Sep 2011–January 2012: Research Associate in the Virology & Immunology Laboratory NUST, Islamabad January 2012- present: Lecturer, Department of Pathobiology, Faculty of Veterinary and Animal sciences PMAS, Arid agriculture university Rawalpindi, Pakistan
Honor and Awards	2010-2011: Silver medalist in MPhil from University of Veterinary and Animal Sciences, Lahore 2004-2009: Gold medalist in DVM from University of Veterinary and Animal Sciences, Lahore 2001-2011: Merit Scholarship holder throughout the academic carrier 2008-2009: Pride of performance (Star award) South Asia Publication, Karachi-Pakistan
Memberships	Member of Pakistan Veterinary Medical Council (PVMC) Member of NUST Science Society (NSS) Member of National Academy of young Scientist (NAYS) Member of American Association of Avian pathologists (AAAP) Member of society of Pakistan Veterinary Pathologist (SPVP) Member of Pakistan Society of Virology (PSV)
Graduate Students Postdocs Undergraduate Students Honor Students	N/A
Services Activity	Extension services to farmers about disease diagnosis and control Research & teaching activities Laboratory diagnosis of animal diseases Sports activities.
Brief Statement of Research Interest	Cellular and molecular interactions between the common antigenic glycoconjugates of Leishmania and Aspergillus with host
Publications	Sami Ullah, Nosheen Riaz, Ali Abdullah, Sajid Umar. DNA Vaccines against Avian Influenza: current research and future prospects. World's

	Poultry Science Journal / Volume 69 / Issue 01 / March 2013, pp 125-134 • Sajid Umar, Abida Arshad, Bilal Ahmad and Muhammad Arshad (2013) Clinico-biochemical and hematological changes in broilers induced by concurrent exposure to Aflatoxins B1 and Ochratoxins A. Journal of Public Health and Biological Sciences Vol. 1, No. 3 Jul – Sep 2012, p.79-85 • Hafsa Sabir and Sajid Umar (2012) Chicken infectious anemia, an immunosuppressive disease of poultry birds (accepted in world journal of poultry Sciences) • Muhammad Younus and Sajid Umar “Avian Pox” small booklet (2010) • Muhammad Younus and Sajid Umar “Gomboro” small booklet (2010) • Newcastle disease virus fusion gene partial sequences submitted in NCBI with accession Number (JX402750) • Sajid Umar, Muhammad Shahzad, Wajid Umar (2012) Pathological effects of lead intoxication in quails, Lambert Academic Publishing, Germany • Sajid Umar, Wajid Umar and Sumaira Sharaf (2012) Cypermethrin induced pathological alterations in broilers, Lambert Academic Publishing, Germany • Muhammad Shahzad, Muti-ur-Rehman, Sajid Umar (2012) Combined effect of aflatoxin B-1 and Ochratoxin A in quails, Lambert Academic Publishing, Germany • Umar. S (2010) Liver, the central laboratory of chicken “The Veterinary News and Views, 24-30 September • Umar. S, Irfan Khan Mayo (2010). The dairy industry of Pakistan “The Veterinary News and Views, 8-15 August. • Cheema. A.H, Sajid Umar (2010). The leather industry in Pakistan “The Veterinary News and Views, 8-15 November. • Umar. S (2010) Factor affecting leather industry “The Veterinary News and Views, 8-15 November. • Umar. S Abdur Rehman (2010) Immunosuppression, a major cause of loss in poultry industry “The Veterinary News and Views, 20-30th September • Khan. I, Sajid Umar, (2010) Excessive use of oxytocin in animals “The Veterinary News and Views, 24-30 September • Umar. S, (2010) Factor affecting intestinal health in Poultry. (The Veterinarian” Australian Magazine) • Umar. S, (2010) “Factors affecting egg production & quality “The Veterinary News and Views, 24-30 September • Khan. I, Sajid Umar, (2010) Calf feeding (Urdu Article) “The Veterinary News and Views, September • Sajid Umar. , (2010) “The water Buffalo” an asset undervalued (submitted for publication) “The Veterinary News and Views, September. • Umar. S, (2010) Factor affecting intestinal health in Poultry. The Veterinary News and Views, 1-7th October • Umar. Sajid & M .I. Khan Mayo., (2010) acceptable milk for human consumption” The Veterinary News and Views, 1-7th November.
--	---

	• Umar.Sajid& M .I. Khan Mayo., (2010) Foot And mouth disease (urdu article)” The Veterinary News and Views,1-7th December. • Umar.Sajid& M .I. Khan Mayo.,(2010) Use of disinfection for poultry shed (urdu article)” The Veterinary News and Views,15-22 December. • Farooq Umar, Hafiz A.Samad and Sajid Umar., (2011) “Multi ovulation & embryo transfer- an Avenue yet unexplored” The Veterinary News and Views,22-29 January. • Umar.Sajid.,(2011) “ Fatty liver hemorrhagic syndrome, a disease of commercial laying Hens” The Veterinary News and Views, 7-14 February. • Umar.Sajid.,(2011) “ Ammonia toxicity in poultry” The Veterinary News and Views,16-22 March.
Research Grants and Contracts.	Title:Preparation and Evaluation of Live attenuated vaccines against Avian Coccidiosis Principal Investigator (PI):Dr. Sajid Umar Co-Principal Investigator: (Co-PI)Dr.Muhammad Ali Abdullah Shah Total funds: 1 lakh 50 thousand rupees
Other Research or Creative Accomplishments	N/A
Selected Professional Presentations	• Sajid Umar, M. Younus, Mutti-ur-Rehman Khan, Aftab Ahmad anjum, SaimaMasoodQamar-un-Nisa (2011) Toxicopathological&Immunosuppressive effects in broilers induced by concurrent exposure to Aflatoxins B1 and Ochratoxins” published in National seminar and workshop on ENVIRONMENTAL TOXICOLOGY AND HEALTH in March 2011. • Sajid Umar, M. Younus, Muhammad Ali Abdullah Shah and Mutti-ur-Rehman Khan (2012) “Pathology of lead intoxication and its amelioration by Vitamin E in Japanese quails” Published in 3rd Mediterranean summit of WPSA 6th international poultry conference poultry production for better human health and safer environment, Porto-Marina, Alaxandria Egypt,26-29 march 2012 • Sajid Umar, M. Younus, Muhammad Ali Abdullah Shah, M.Irfan Mayo and Wajid Umar • Pathology induced by current exposure of AfB1 and OchratoxinA in broilers. All Pakistan Science Conference (10-12 Jan 2102) PMAS Arid Agriculture University Rawalpindi