



PROSPECTUS

Postgraduate Studies

2010-2011

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UNIVERSITY OF VETERINARY AND ANIMAL SCIENCES, LAHORE

**UNIVERSITY OF VETERINARY AND ANIMAL SCIENCES, LAHORE-
PAKISTAN**

DISCLAIMER

This prospectus is informational and should not be taken as binding on the University. Each aspect of the educational set up such as admission procedure, examination criteria, rules and regulations for discipline, requires continuous review by the competent authorities. The University, therefore, reserves the right to change any rule/rules and regulations applicable to the students whenever it is deemed appropriate or necessary.

Inquiries concerning admission should be addressed to

Prof. Dr. Muhammad Sarwar Khan

Director Advanced Studies

University of Veterinary and Animal Sciences, Lahore.

Telephone: +92-042-99212865, +92-42-99211374 (Ext: 151, 152 155)

COMPLETE INFORMATION ON PROCEDURES, RULES AND REGULATIONS IS SET OUT IN THE ORDINANCES, STATUTES, REGULATIONS, POLICIES AND PROCEDURES OF THE UNIVERSITY. COPIES ARE AVAILABLE ON REQUEST FROM THE UNIVERSITY.



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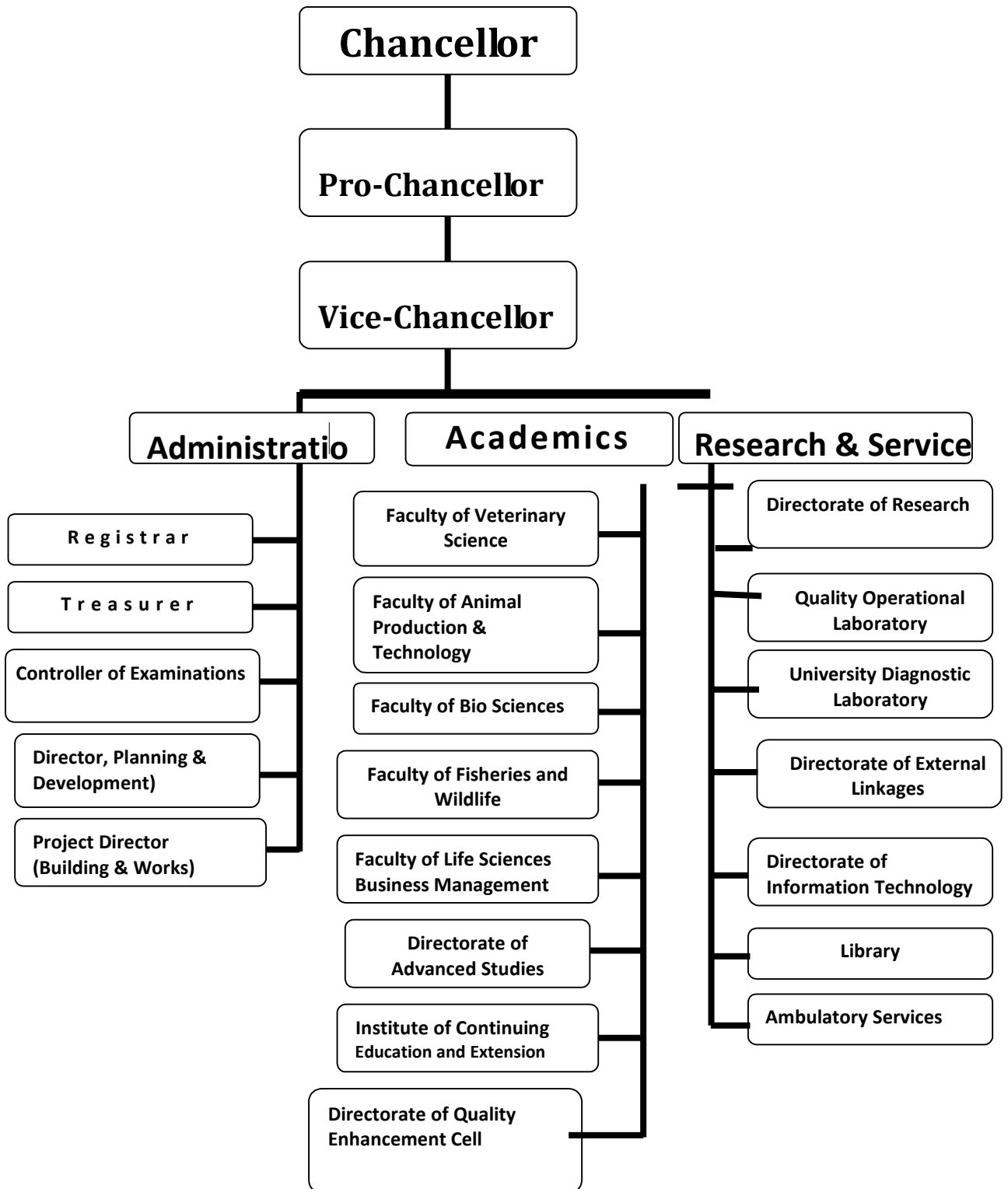
HISTORICAL PERSPECTIVES

The University of Veterinary & Animal Sciences, Lahore is one of the oldest Veterinary Institutions in Asia. Since its inception in 1882, the staff of this institution has worked enthusiastically and successfully to conduct a wide range of programs that have effectively catered the educational and training needs in the field of veterinary and animal sciences. By now it has emerged as a well-reputed center of teaching veterinary and animal science education in Asia.

This institution started as Veterinary School in 1882 and was raised to the status of Punjab Veterinary College by the end of nineteenth century. Its present buildings were completed in 1921. In 1942, the College was affiliated with Punjab University, Lahore. In 1971, the College was integrated with University of Agriculture, Faisalabad. In 2002, the College was upgraded to the status of a University and named as University of Veterinary and Animal Sciences. It was an obvious testimony of the fact that Government is committed to achieve the objective of institutional arrangement for further research, human resource development and poverty alleviation.

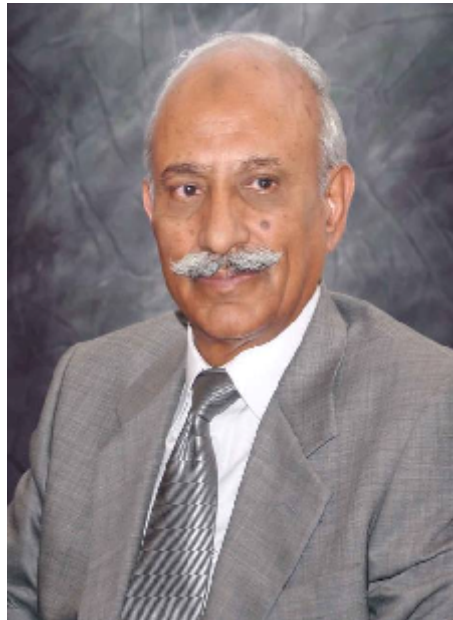


ORGANIZATIONAL CHART OF UVAS, LAHORE



Message from the Vice-Chancellor

I am glad that you are considering University of Veterinary & Animal Sciences (UVAS), Lahore as an option for higher studies and research. The role and contribution of this institution in imparting quality education and conducting high standard research in the fields of Livestock, Poultry, Fisheries, Wild Life, Pharmaceuticals and Biological Sciences in general is now well recognized nationally and internationally. It has a rich legacy of producing scholars and professionals who are serving all over the world in teaching, administrative, research and services-based organizations.



I welcome you as a postgraduate student in UVAS. Programs launched by this University require hard work, commitment and require you to stay on the campus and at your experimental stations for long working hours. The University makes all arrangements to provide a conducive environment for study and research. As you have to take up responsibility in the society at a later stage as a scientific leader of the nation, you need to be well prepared for it. I assure you that if you work honestly and devotedly to improve your knowledge and professional skills, the University faculty shall leave no stone unturned towards accomplishment of your postgraduate studies and research in the most useful manner. I wish you a very fruitful stay at UVAS during your postgraduate studies with the hope that you will rise as a distinct star in the realm of your profession.

(Prof. Dr. Muhammad Nawaz)
Vice-Chancellor

Message from the Director Advanced Studies

Discipline and self discipline are very important in student life. It is self discipline that can lead one to success, happiness and eternal satisfaction. Education aims at changing the character of a student but this can only be achieved by devotion and constant pursuance of knowledge and learning

Education is a commitment for better life. It is not to be confined to a superficial awareness of knowledge but has to be extended to the whole fabric of life.



It is education that shapes up raw flesh and blood into a polished and productive personality capable of influencing the environment. Our students are lucky to have got the opportunity to learn and to grow and to make this word a charming place to live in. The educational program should be shaped to inculcate all the good virtues of life permanently in one's heart and mind. Acquiring of degrees without a comparable build up of character is a mere waste of time.

. No doubt, all technical advances are based on scientific principles and theories but the fact remains that man could never make use of the intellectual genius if the skilled had not translated ideas into physical realities. Research is very important for a postgraduate student but is useless without giving it priority in solving the problem of the community.

The main objective of directorate is to focus on the high quality teaching, learning and research and to create a group of qualified, innovative and dynamic professionals for corporate sectors.

I wish you all the best for your stay at the University and ever after.

(Prof. Dr. Muhammad Sarwar Khan)
Director

Directorate of Advanced Studies

Directorate of Advanced Studies and Research came into existence with the creation of this University in July 2002. However in March 2007, to better manage the postgraduate education the Directorate of Advanced Studies and Research (DASR) was divided in two independent Directorates; the Directorate of Advanced Studies and the Directorate of Research. The mission of this Directorate is to encourage and assist the graduates to pursue higher education by taking pastoral care of them; helping them to complete their studies in a timely fashion and to assist the faculty in conducting quality research.

This Directorate is a model office, a second home for the students that helps, supports, and facilitates postgraduate students to promote quality higher education and culture of research.

STAFF MEMBERS

1. Prof. Dr. Muhammad Sarwar Khan

Director

2. Nazia Sultana

Assistant Director / Assistant Registrar

3. Sakhra Mehmood

Assistant Director (on study leave)

MINISTERIAL STAFF

Admin Officer

Muhammad Zafar Naseem

PA to Director

Zulfiqar Ali

Assistant

Ghulam Kibriya Anjum

Data Entry Operator

Tahir Mehmood

Senior Clerk

Rehman Nayyer

Qasid

Sardar Ali

General Rules and Regulations for Admissions

The following postgraduate degree programs are being offered.

- A. M. Phil
- B. M. Phil leading to Ph.D
- C. Ph.D
- D. M.B.A (Life Sciences)

A. M.Phil

Duration for M.Phil

- (i). The duration of the course for the Degree of Master of Philosophy (M.Phil) in full residence shall not be less than four semesters and more than six semesters for whole time students and not less than six semesters for the University employees admitted as part time students.
- (ii). The durations of the course for the Degree of Master of Philosophy (M.Phil) for part time students shall not be less than six semesters and more than ten semesters.
- (iii). The medium of instruction and examination shall be English.

Eligibility

Bachelor's Degree. (Sixteen years of schooling or 4 years of education after F.Sc, Pre-Medical) minimum 2nd Division with 50% marks according to annual system or minimum CGPA 2.50/4.00 according to the semester system from a recognized University in related field of study

- Criterion of GAT by NTS for admission to M. Phil program has been relaxed only for this year. Candidates who desired to get admission in M .Phil will be given admission provisionally on affidavit. Candidates are required to submit their GAT result before commencing of 2nd semester, otherwise their admission will be cancelled.
- Student can only be admitted, if seats will be available after accommodating GAT qualified candidates

M.Phil degree program is being offered in the disciplines of :

Lahore Campus Pharmacology & Toxicology, Physiology, Microbiology, Pathology, Parasitology, Theriogenology, Clinical Medicine, Surgery, Epidemiology & Public Health, Food & Nutrition, Anatomy & Histology, Biochemistry, Molecular Biology and

Biotechnology and Pharmaceuticals.

Ravi Campus Pattoki Animal Nutrition, Poultry Production, Livestock Management, Animal Breeding & Genetics, Fisheries & Aquaculture, Wildlife & Ecology, Dairy Technology,

B. M. Phil leading to Ph. D

This program is offered especially to facilitate the indigenous scholarship holders of HEC.

Eligibility

Bachelor's Degree. (Sixteen years of schooling or 4 years of education after F.Sc, Pre-Medical) minimum 1st Division according to annual system or minimum CGPA 3.00/4.00 according to the semester system from a recognized University in related field of study Graduate Assessment Test (GAT) by NTS(50%cumulative score) is mandatory for a

Ph.D

Duration for Ph.D.

The duration of the course for the Degree of Doctor of Philosophy, in full residence shall not be less than six semesters and more than ten semesters for whole-time students. In case of University employees admitted as part time students, the duration shall not be less than ten semesters and more than fourteen semesters.

	Min	Max
Full Time Student	6	10
Part Time Student	10	14

1. The employees of the Government/other agencies nominated for the degree of Doctor of Philosophy at this University shall have to take leave to pursue studies as a regular student, failing which he/she shall not be admitted.
2. The supervisors of Ph.D. students shall submit a report with regard to each Ph.D. student showing general progress particularly in research. Such report shall be submitted on prescribed form after each semester to the Advanced Studies and Research Board through the Chairman of the Department/Dean/Director concerned.

(Explanation: In case their progress is not satisfactory, they will be called during next semester

to justify for the delay. In case their explanation, in the opinion of the Advanced Studies and Research Board is not found satisfactory, appropriate orders including cancellation of admission shall be passed by the Board).

3. The medium of instruction and examination shall be English.

There will also be a Supplementary Semester of 8 to 10 weeks each year as part of an academic year which shall be optional. Students, who desire to take up deficiency courses as approved in their course work programs, failed courses and the courses in which they are allowed to improve 'C' grade under the rules, may enroll during this session. It shall not count towards residential requirements

Eligibility

The candidates must have Master's degree (M.Sc. Hons./M.Phil) in related field of study with minimum of 1st Division according to annual system or not less than CGPA 3.00/4.00 according to semester system from HEC recognized universities. **Candidates will have to clear GRE subject test which will be arranged by university. Qualifying scores are 70%.** Ph.D. degree program is being offered in the disciplines of:

Lahore Campus Pharmacology & Toxicology, Physiology, Biochemistry, Microbiology, Pathology, Parasitology, Theriogenology, Clinical Medicine, Epidemiology & Public Health, Food & Nutrition,

Ravi Campus Pattoki Animal Nutrition, Livestock Management, Animal Breeding & Genetics, Poultry Production, Fisheries and Aquaculture, Dairy Technology & Wildlife Ecology.

admission to M.Phil leading to Ph.D.

Nominations for Admission to Postgraduate Degree Programs

The candidates/nominees will have to apply through proper channel. Nominations received after the due dates will not be entertained. Nominees will also have to qualify the GAT (General) for M.Phil and GRE (Subject) test for Ph.D

Submission of Application

Application forms and prospectus can be downloaded from the university website www.uvas.edu.pk, but an amount of Rs. 200/- per form will have to be paid at the time of submission of application form (at Habib Bank Ltd, Civil Branch, Lahore in Account No. 13545-1 or in the form of Bank Draft in the name of Treasure, UVAS, Lahore.)

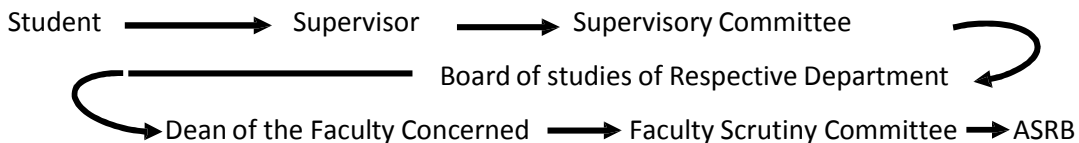
Applications complete in all respect should reach in the office of the Director, Advanced Studies UVAS, Lahore within the prescribed period of time as notified by the University. Incomplete application or those received after due date, shall not be entertained and be rejected without any notice.

Guideline for Postgraduate Students

A. GUIDELINE FOR M.PHIL STUDENT

1. Minimum residential requirement (Full time student) = 04 Semesters
2. Maximum residential requirement (full time student) = 06 Semesters
(DVM (5 years) students taking admission to Faculty of Animal Production & Technology will have to study deficiency courses offered by the concerned Department)
3. To complete enrolment formalities in each semester, the student will submit dues & enrolment form complete in all respect
4. Ordinarily a full time student shall not be enrolled for more than 15 and less than 10 credits in a semester except for the last semester.
5. At the end of 1st semester, a student must obtain a GPA of 2.00. However, in case of GPA 1.75 or above but less than 2.00, he will be promoted to 2nd semester, but only once and will be kept on probation.
6. At the end of 2nd semester, a student must obtain a CGPA of 2.00 and must also pass at least 50% of the courses enrolled by him.
7. At the end of 3rd and onward semesters, CGPA of a student should not be less than 2.00; otherwise he/she will cease to be on the roll.
8. Seminar will be compulsory for each student, but special problem is not compulsory.
9. For the award of the degree, a student must obtain CGPA at least 2.50.
10. Submission of Course Work Program and constitution of their Supervisory Committee is due at the end of 1st semester
11. Submission of Synopsis to the Board of Studies is due at the end of 3rd semester

The route of Synopsis approval will be as under:



- (i). If Faculty Scrutiny Committee does not suggest any change, the Dean concerned will forward the Synopsis to Director, Advanced Studies (DAS) for approval by the Advanced Studies and Research Board (ASRB).

If Faculty Scrutiny Committee suggests any change, the Dean will send the Synopsis back to the Chairman of concerned Department to ask the student to make suggested changes in the Synopsis. After making the changes, Chairman of the Department will send the Synopsis to Chairman, Faculty Scrutiny Committee for onward submission to DAS for approval from ASRB.

12. Discontinuation of Semester = Student can discontinue the Semester only once but only after first semester
13. Submission of Semifinal/Final Thesis = During the 4th (regular) Semester.
14. Thesis Examination (Viva Voce)= After fulfilling all academic and administrative requirements.

B. Guideline for M. Phil leading to Ph. D students

1. The minimum duration for completion of M. Phil leading to Ph. D degree program will be 4 years (8 semesters) and maximum 5 years (10 semesters). The period shall be counted from the date of admission.
2. Total credit hours of the program will be 48. In the first three semesters a student will have to undertake course work equivalent to 30 Credit hours.
 - i) If student desires to undertake M. Phil research or is unable to maintain his/her CGPA 3.00 or above, he/she shall enroll 10 credit hours research in the fourth semester and will become eligible for M. Phil. Degree.
 - ii) The student who has maintained CGPA 3.00 or above shall undertake additional course work equivalent to 18 credit hours and conduct his/her Ph.D. Research. The detail of these courses are as under:-

ADDITIONAL COURSE WORK

Major courses	=	11 Credit hours
Seminar	=	1 Credit hour
Minor Courses	=	6 Credit hours
Total	=	18 Credit hours
Advanced Statistics	=	3 Credit hours
(Compulsory Deficiency)		

C. GUIDELINE FOR PH.D. SCHOLARS

1. Duration of the course
 - a) For regular students. Not less than 6 and not more than 10 semesters.
 - b) Part time student Not less than 10 semesters and not more than 14 semesters.
2. To complete enrolment formalities in each semester, the student will submit dues and enrolment form complete in all respect.
3. Ordinarily a whole time student shall not be enrolled for more than 15 and less than 10 credits in a semester except in the last semester.
4. At the end of 1st semester a student must attain a GPA of 3.00. However in case of a GPA of 2.5 or above but less than 3.00, he will be given a warning to improve his/her GPA/CGPA and if he/she fails to attain a CGPA of 3.00 in the next semester, his/her admission shall stand cancelled.
5. Two Seminars and a Special Problem will be compulsory for each student
6. Submission of Course Work Program will be due at the end of 1st. Semester

COMPREHENSIVE EXAM.

A student admitted to the course shall take a Comprehensive Examination within six weeks of the next semester after he has successfully completed the approved course work program.

Detail: Comprehensive Examinations shall be arranged within 6 weeks of the termination of each regular semester. A student will have to apply for the said exam on the prescribed form at least two months before the examination. If a student does not apply within the specified period or does not appear in the examination, he/she will be deemed to have availed one chance and failed to qualify in the first attempt.

To pass the Comprehensive Examination, a student must obtain not less than grade B in the written and the oral parts, separately.

A student shall not be eligible to sit in the oral part, unless he has qualified in the written part of the Examination.

(i) If a student fails to qualify either in the written or oral part he/she shall be eligible to

offer himself/herself again in the part in which he failed, in the subsequent semester/next semester but only once and also within one year of the declaration of the results of the examination.

(ii) If a student is unable to qualify either written or oral part of the Comprehensive Examination twice, he/she shall cease to be on the University rolls. He/she shall not be granted admission in any Ph.D degree program in the University thereafter.

A student who has passed the comprehensive examination shall be deemed to have become a candidate for admission to Ph.D degree.

Submission of Synopsis to Board of Studies = At the end of 3rd. semester

Discontinuation of Semester = Can discontinue only once

during Ph.D Program but after 2nd semester.

SUBMISSION OF SEMI FINAL/FINAL THESIS:

A candidate who has passed the Comprehensive Examinations shall be allowed to submit his/her thesis, but before submission he/she will have to defend his/her thesis, at University level. This presentation shall be evaluated by the Supervisory Committee and if found acceptable, the final submission may be allowed. Thesis will be sent abroad for evaluation by two external examiners from technologically advanced countries.

GENERAL INSTRUCTIONS FOR POSTGRADUATE STUDENTS

1. All postgraduate students after enrolment must get their respective student's copy of the enrolment form from the office of Directorate of Advanced Studies. Thereafter, the said copy is to be shown to the concerned teacher (s) offering the course (s) in order to include their names in the attendance register being maintained by the teacher.
2. No course shall be conducted unless there are at least four students enrolled for that course. In special cases, however, if the number of students is less than four, permission of the Vice Chancellor shall have to be obtained for conducting that course. The Board decided that approval of Vice Chancellor for offering a course to a class of less than four students must be obtained within one month of the commencement of that semester and no request will be entertained after expiry of the date. The above condition, however, does not apply to the Supplementary Semester where teachers are not required to ask for the permission of the Vice Chancellor.
3. All students are required to submit their Course Work Program during 1st Semester and Synopsis during 3rd Semester.
4. A course can be repeated three times, at the most. First repetition will be on student's will. For 2nd repetition prior permission of Director Advanced Studies is essential and for 3rd repetition, permission of the Advanced Studies and Research Board will have to be sought and the applicant will have to justify the repetitions.
5. An approved course, not offered for four Semesters consecutively, shall stand deleted from the list of approved courses of the department concerned.
6. If a teacher is not available for guidance for most of the time he should be changed by the Dean of the Faculty on a request from the student supported by the Chairman of the Department concerned.
7. The teachers concerned should try to organize the Ph.D. student's workload so that they are able to finish their research work within the minimum limit, possibly in three years.
8. Only academically qualified and competent teachers by virtue of their experience should be allowed to supervise the work of Ph.D. students. Normally the major supervisor of a Ph.D.

student must possess the following qualifications and experience.

- a. A Ph.D. degree in the subject.
 - b. At least 5 years teaching / research experience.
 - c. At least three publications to his credit in an International/National Journal of repute.
 - d. Must have a prior experience of supervising M.Sc (Hons)/ M. Phil student's research.
9. No student will be allowed to conduct research outside the University Campus without prior permission of the Chairman of the Department and the Dean of the Faculty Concerned.
 10. Semi-final thesis should be submitted to Director Advanced Studies duly forwarded by the Chairman of the Department and Dean of the Faculty concerned on or before the schedule date.
 11. Compulsory Deficiency course like Statistics and Biochemistry etc. shall not be counted towards minor fields as required under statutes 4(b) relating to the postgraduate students. Accordingly, the total fields in minor will be counted excluding the Compulsory courses.
 12. There will be no "D" grade for the deficiency courses and students will be marked A, B, C and F.
 13. Director Advanced Studies is empowered to extend the date of final submission of the theses by two weeks for those students who get their semi-final theses approved / scrutinized by the Directorate of Advanced Studies.
 14. Enrolment for a minimum of 10 credits in a semester will be strictly adhered to, as provided under rules. Relaxation for enrolling 2 credits less than the limit may be allowed by the Advanced Studies and Research Board in exceptional cases only. The Deans / Director / Chairmen would ensure that the requisite courses are offered by their Faculties / Departments / Sections to avoid hardship to the students.
 15. Duration of the question paper for Written Comprehensive Examination would be five hours and the student shall be required to attempt five questions out of seven in each paper.
 16. A postgraduate student can avail the facility of discontinuation of studies only once during his study period and that too for one semester only. Moreover, he will have to apply for discontinuation of studies within 30 days from the date of commencement of classes. Any application received after that period shall be outrightly rejected. Moreover, candidates failing to apply for the discontinuation shall be charged Rs.2000/- at the time of enrolment in the forthcoming semester. However, if a student does not apply in that semester his admission will stand cancelled.

Course work (Sample)

UNIVERSITY OF VETERINARY & ANIMAL SCIENCES, LAHORE Course work program for M. Phil/ Ph.D

DEPARTMENT: _____ Regd. # _____
Name of the Student: _____ Signature of Student _____
Date of Admission: _____
Supervisory Committee:

1. (Name) (Supervisor/ Chairman) _____
2. -do- (Co-Supervisor if any) _____
3. -do- (Member) _____
4. -do- (Member) _____

COURSE WORK SAMPLE

Course #	Title of the course	Minimum Credit hrs. Required	
		<u>M. Phil</u>	<u>Ph.D</u>
A)	Major Courses	23/24	17
B)	Minor Courses	12/11	08
C)	Deficiency Courses	03	06
D)	Research and Thesis	10	20
		<hr/> 48	<hr/> 51

Dean,
Faculty of-----
UVAS, Lahore.

Chairman,
Department of
UVAS, Lahore

Director
Advanced Studies
UVAS

Course work (Sample)

UNIVERSITY OF VETERINARY & ANIMAL SCIENCES, LAHORE Course work program for M. Phil Leading to Ph.D

DEPARTMENT: _____ Regd. # _____
 Name of the Student: _____ Signature of Student _____
 Date of Admission: _____
 Supervisory Committee:
 1. (Name) (Supervisor/ Chairman) _____
 2. -do- (Co-Supervisor if any) _____
 3. -do- (Member) _____
 4. -do- (Member) _____

COURSE WORK SAMPLE

<u>M.Phil PART</u>	Course #	Title of the Course	Minimum Credit hrs. Required M.Phil
	A)	Major Courses	20
	B)	Minor Courses	10
	C)	Deficiency courses (Biochemistry & Statistics)	06
Total			36
<u>Ph.D PART</u>	Course #	Title of the Course	Minimum Credit hrs. Required Ph.D
	A)	Major Courses	12
	B)	Minor Courses	06
	C)	Deficiency course (Compulsory Statistics)	03
Total			21

Dean,
 Faculty of
 UVAS, Lahore.

Chairman,
 Department of
 UVAS, Lahore

Director
 Advanced Studies
 UVAS

GUIDELINE FOR SYNOPSIS WRITING (SAMPLE)
UNIVERSITY OF VETERINARY & ANIMAL SCIENCES, LAHORE

Synopsis of M. Phil./Ph.D
(Subject/Discipline)

TITLE:

(Should be clear and precise)

Date of Admission -----
Date of Initiation -----
Probable research duration -----

(For M.Phil research project the minimum research span is 3 months).

(For Ph.D research project the minimum research span is 9 months).

PERSONNEL:

Name of student -----

Regd. No. -----

Supervisory Committee 1. Supervisor: -----

2. Member: -----

3. Member: -----

RELEVANCE TO RESEARCH PRIORITY

Certificate

The title of the synopsis relates to research priority entitle, “_____” of the Department.

Signature:

(Student)

FORWARDED BY SUPERVISORY COMMITTEE:

1. _____(Supervisor)
2. _____(Member)
3. _____(Member)

In case of Ph.D a Certificate from the Supervisor to the effect that the scholar has presented a seminar to defend his synopsis at University Level should accompany the synopsis document.
Recommended and Forwarded by Chairman Board of Studies of the Department of: _____

(Chairman)

Recommended and Forwarded by Synopsis Scrutiny Committee:

(Chairman)

Reviewed and witnessed by:

(DEAN)

Faculty of

University of Veterinary and Animal Sciences, Lahore.

Director Advanced Studies
University of Veterinary
and Animal, Sciences, Lahore

INTRODUCTION

(New page)

- I. Importance of topic.
- II. Present situation at national and international level.
- III. Relevance to national needs and identified research priorities.
- IV. The objectives of the study
- V. What the present study is expected to contribute to the existing scientific knowledge on the subject/ topic.

Review of Literature

(New page)

No. of reviews for M. Phil	Minimum 15 (synopsis) latest.
No. of reviews for Ph.D.	Minimum 25

Reviews should be arranged in chronological order and be split up under subheadings in case of Ph.D synopsis.

Only desperately required old reference/ reviews should be added.

Materials & Methods

(New page)

Experimental design should be clearly mentioned with references.

It should be in a logical order including following information:

- I. Experimental Animals/ Birds (Information about their origin, rearing etc)
- II. Selection criteria – Species/ Age/ Sex/ Health Status
- III. Experimental Design (Sample size, grouping of animals/birds- No. of Groups, Positive and Negative controls, etc.)
- IV. Techniques for collection of samples (e.g. sampling material, mode of transportation preservation, examination and identification etc.)

V. What statistical model would be applied to present project?

SUMMARY

(New page)

It should include the following:

1. Objectives of study
2. Brief experimental design
3. Methods used to achieve these objectives
4. Expected results (is it ok to do it?)

Literature Cited

(New page)

Please see 'Guidelines for Thesis Writing' to correctly cite literature from journal/ book/ personal communication).

GUIDELINE FOR THESIS WRITING (SAMPLE)

(HARD COVER SAMPLE)

(Title of the thesis should also be written on spine of the thesis. Colour of hard binding for M.Phil will be dark green and for that of Ph.D will be black)

TITLE (FONT 16 IN TWO OR THREE LINES)

(NAME OF THE STUDENT)

REGISTRATION NO.

**A THESIS SUBMITTED IN THE PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE DEGREE**

OF

**MASTER OF PHILOSOPHY/ DOCTOR OF PHILOSOPHY
(FONT 15)**

IN

NAME OF THE DISCIPLINE/ SUBJECT

**UNIVERSITY OF VETERINARY AND ANIMAL SCIENCES, LAHORE
(FONT 16)**

**YEAR*
(FONT 14)**

* YEAR OF SUBMISSION OF FINAL THESIS

TITLE PAGE (SMAPLE)

TITLE (FONT 16 IN TWO OR THREE LINES)

(NAME OF THE STUDENT)

REGISTRATION NO.

**A THESIS SUBMITTED IN THE PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE DEGREE**

OF

**MASTER OF PHILOSPHY/ DOCTOR OF PHILSOPHY
(FONT 15)**

IN

NAME OF THE DISCIPLINE/ SUBJECT

**UNIVERSITY OF VETERINARY AND ANIMAL SCIENCES, LAHORE
(FONT 16)**

**YEAR*
(FONT 14)**

* YEAR OF SUBMISSION OF FINAL THESIS

To,

The Controller of Examinations,
University of Veterinary & Animal Sciences,
Lahore.

We, the Supervisory Committee, certify that the contents and form of the thesis, submitted by _____, have been found satisfactory and recommend that it be processed for the evaluation by the External Examination (s) for award of the Degree.

Chairman _____

Co-Supervisor
(if any) _____

Member _____

Member _____

DEDICATION (NEW PAGE)
(The page of dedication is optional)

ACKNOWLEDGEMENT (NEW PAGE)
(Brief and relevant)

CONTENTS (NEW PAGE)

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ACKNOWLEDGEMENT (ii)

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Chapter 1
INTRODUCTION

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The contents of this chapter would remain open on choice of the student and his/her Supervisor. Recommended style of quoting references in the text is as under: -

If single author, e.g. Vega (1995)

If two authors, e.g. Vega and Pina (1998)

If more than two authors, e.g. Vega et al (1996)

Chapter 2
REVIEW OF LITERATURE

(New page)

The contents of this chapter would remain open on choice of the student and his/ her Supervisor

Chapter 3
MATERIALS & METHODS

(new page)

Experimental Design should be clearly mentioned with references.
It should include the following information in a logical order.

Experimental Animals/ Birds (Total Number)

Selection criteria – Species/ Age/ Sex/ Health status

Rearing of Animals/ Birds (Feeding, Watering etc.)

Experimental Design (Sample Size/ Grouping of Animals/ Bird – No. of
Groups, Positive and Negative Controls.)

Techniques for collection, transportation and preservation of samples (e.g.
Faecal/ blood type of sample, mode/ method of collection, frequency of
collection)

Every detail of the methodology of each technique should be mentioned
with reference to previous work.

Statistical Analysis: What statistical model was applied to present project?

Chapter 4
R E S U L T S

(New Page)

The sequence of experiments should be followed while describing the results.

Results of all the experiments and sub-experiments should be supported by
tables and figures along with statistical analysis.

Chapter 5
DISCUSSIN

(New Page)

Incorporate all the finding with at least 70% reviewed literature and derive clear cut conclusions from the research. Suggest recommendations and future quests. Give logics for comparison of your findings with other Researchers/Scientists in term of similarities and dissimilarities. Don't repeat the results here in the form of tables/ figures only discuss them. Conclude the achieved objectives of the study. Offer recommendations, if any.

Chapter 6
SUMMARY

(New Page)

Briefly mention the Objectives, Materials and Methods, Results and Conclusions.

Chapter 7
LITERATURE CITED

(New Page)

Year should be mentioned after the names of authors i.e. Vega, K.J.; I. Pina; and B. Krevsky (1996).

A semi colon should be indicated at the end of each author.

Page numbers should be indicated in full i.e. 980-983.

Alphabetical order should be followed.

All references cited in Introduction, Review of Literature, Materials & Methods and Discussion must be enlisted.

Recommended style of quoting references in the Text:

Articles in Journals

List names of all the authors.

Vega, K.J.; I. Pina, B. Krevsky (1996). Heart transplantation is associated with an increased risk for pancreatoblitiary disease. Ann. Intern. Med. 124 (11): 980-983.

Organization as author

The Cardiac Society of Australia and New Zealand (1996). Clinical exercise stress testing. Safety and performance guidelines. Med. J. Aust. 164:282-284.

Article not in English

Ryder, T.E.; E.A. Haukeland, J.H. Solhaug (1996). Bilateral infrapleural seneruptur hos tidligere frisk kvinne. Tidsskr. Nor. Laegeforen 116:41-2.

Books and Other Monographs

Personal author (s)

Ringsven, M.K; D. Bond (1996). Gerontology and leadership skills for nurses. 2nd ed. Albany (NY): Delmar Publisher U.S.A.

Editor (s) compiler (s) as author

Norman, I.J. and S.J. Redfern, editors. (1996). Mental health care for elderly people
Churchill
Livingstone, New Year, U.S.A.

Conference Proceedings

Kimura, J. and H. Shibasaki, editors. (1996). Recent advances in clinical neurophysiology. Proceedings of the 10th International Congress of EMG and Clinical Neurophysiology; 1995 Oct 15-19 (1995); Kyoto, Japan. Amsterdam, the Netherland. PP: 129-134

Conference Proceedings

Bengtsson, S. and B.G. Solheim. (1992). Enforcement of data protection, privacy and security in medical informatics. In: Lun Kc, Degoulet P. Piemme TE, Rienhoff O, editors. MEDINFO 92. Proceedings of the 7th World Congress on Medical Informatics; Sep 6-10 (1992); Geneva, Switzerland Amsterdam: North Holland; pp: 1561-1565.

Scientific or technical report

Issued by funding/sponsoring agency:

Smith, P. and K. Gollady. (1994). Payment for durable medical equipment billed during skilled nursing facility stays. Final report. Dallas (TX): Dept. of Health and Human Services (US), Office of Evaluation and Inspections; Oct. report No: HHSIGOE169200860.

Dissertation

Kaplan, S.J. (1995). Post-hospital home health care: the elderly's access and utilization {dissertation}
St. Louis (MO): Washington Univ.

Other Published Material

Newspaper article

Lee, G. (1996). Hospitalization tied to ozone pollution: study estimates 50,000 admissions annually. The Washington post Jun 21; Sect. A:3 (col5)

Unpublished Material

In Press

Leshner, A. I. (1997). Molecular mechanisms of cocaine addiction. N. Engl. J. Med. In press

Electronic Material

Journal article in electronic format

More, S.S. (1995). Factors in the emergence of infectious diseases. Emerg Infect Dis [serial online]

Jan-Mar [cited 1996 Jun 5];1(1):[24 screens] available from URL:

<http://www.cdc.gov/ncidod/EID/eid.html>.

Useful resources for thesis writing

- 1- Turabian, K.L, (1964). Manual for Writers of term papers, thesis and dissertations. The University of Chicago Press,. Illinois, USA.
- 2- Janice R. Mathews, John M bowen and Robert W. Mathews 1996. Successes Scientific Writing. The Cambridge University Press. Press Syndicate of the University of Cambridge. The Pitt Building, Trumpington street, Cambridge CB2 1RP. UK.
- 3- Davis Gordon B and Clyde A. Parker 1979. Writing the Doctoral Dissertation, a Systematic Approach. Barrani Educational Services, Inc. New York, USA.

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UNIVERSITY FACULTIES/INSTITUTES

A. Faculty of Veterinary Science

- i. Department of Clinical Medicine & Surgery
- ii. Department of Microbiology
- iii. Department of Parasitology
- iv. Department of Pathology
- v. Department of Epidemiology & Public Health
- vi. Department of Theriogenology

B. Faculty of Animal Production & Technology

- i. Department of Food & Nutrition
- ii. Department of Dairy Technology
- iii. Department of Livestock Production
- iv. Department of Poultry Production
- v. Department of Meat Technology
- vi. Department of Leather & Fiber Technology

C. Faculty of Bio-Sciences

- i. Department of Pharmacology & Toxicology
- ii. Department of Anatomy & Histology
- iii. Department of Physiology
- iv. Department of Social Sciences

D. Faculty of Fisheries & Wildlife

- i. Department of Fisheries & Aquaculture
- ii. Department of Wildlife and Ecology

E. Faculty of Life Sciences Business Management

- i. Department of Livestock Economics & Business
- ii. Department of Statistics & Computer Science

F. Institute of Biochemistry & Biotechnology

- i. Discipline of Molecular Biology & Biotechnology
- ii. Discipline of Biochemistry
- iii. Discipline of Bioinformatics/Computational Biology(**in process**)

G. Institute of Pharmaceutical Sciences

- i. Discipline of Pharmaceutics

FACULTY OF VETERINARY SCIENCE

**M.Phil/ M.Phil leading to Ph.D/ Ph.D
Offering Departments**

Department of Clinical Medicine & Surgery

Department of Microbiology

Department of Parasitology

Department of Pathology

Department of Epidemiology and Public Health

Department of Theriogenology

DEPARTMENT OF CLINICAL MEDICINE AND SURGERY

Introduction

The Department of Clinical Medicine and Surgery was established with up-graduation of College of Veterinary Sciences, Lahore to the status of University of Veterinary and Animal Sciences, Lahore in June, 2002. Two components of the department (Medicine & Surgery) have been working for over a century, and providing best possible veterinary services to public & private sectors in Lahore and various parts of Pakistan. Currently the Department deals with teaching and research in the areas of Clinical Medicine and Surgery. It maintains two Hospitals viz. Out-Door Hospital, which looks after animals suffering from medicinal diseases, and In-Door Hospital, offering admission facilities to large animals (Equine and Bovine). The department offers a number of courses for postgraduate programs in the disciplines of Veterinary Medicine and Veterinary Surgery. The department is also extensively involved in research activities to cope with the emerging problems related to veterinary medicine and surgery in the field conditions. The Department has recently established a well equipped postgraduate research laboratory and operation theatre, which help in the post graduate research.

Laboratory Facilities

- Spectrophotometer
- Anaesthesia machine
- Autoclave
- Centrifuge machine
- Research microscope
- Radiography and ultrasonography
- Electric cautery
- Shoeing and soundness
- Antibiotic sensitivity
- Blood, faecal, urine, skin scraping examinations
- Diagnostic tests for mastitis, tuberculosis, brucellosis etc.

Farm Facilities:

The Department has collaborations with various Government, Military and Private Livestock farms which provide research facilities to the postgraduate students.

Pet Centre of the University is also linked with this Department which provides research opportunity to the postgraduate students.

Research priorities

Clinical Medicine(CM)

- i) A clinico-epidemiological studies and therapeutic trials on infectious diseases of animals.
- ii) Studies on the metabolic disorders, chemical and plant poisoning.
- iii) Development of indigenous treatment protocols.

Surgery

- i) Modern trends of reconstruction of various soft organs, like oesophagus, trachea, urinary bladder, ureters, skin muscles, blood vessels, and intestinal by-pass.
- ii) Use of cement for the healing of fractures, repair of fractures using external and internal implants, arthrodesis, etc.
- iii) Introduction of various anaesthetic combinations in Avians, Equines, Bovines, Canines. Use of gaseous anaesthetics for thoracic surgery.

Use of radiology for the diagnosis of various internal diseases and their radiotherapy.

COURSES OFFERED FOR M.PHIL/PH.D IN CLINICAL MEDICINE AND SURGERY

Course No.	Title	Creditor Hrs.
MED 1001	Biotechnology in Animal Health	4(3-2)
MED 1002	Clinical Laboratory Aids in Diagnosis	4(2-4)
MED 1003	Laboratory Animal Medicine	4(3-2)
MED 1004	Zoo and Wild Animal Medicine	4(3-2)
MED 1005	Diseases of Fish	4(3-2)
MED 1006	Veterinary Neonatology	3(3-0)
MED 1007	Veterinary Medicine and Human Health	4(3-2)
MED 1008	Diseases of Mammary Glands	4(3-2)
MED 1009	Advanced Dairy Herd Health	4(3-2)
MED 1010	Advanced Readings in Veterinary Medicine	1(1-0)
MED 1019	Special Problem	1(0-2)
MED 1020	Seminar	1(1-0)
S U R G E R Y		
Course No.	Title	Creditor Hrs.
SURG 1001	Advanced Small Animal Surgery	4(2-4)
SURG 1002	Advanced Surgical Techniques	4(2-4)
SURG 1003	Orthopaedic Surgery	4(2-4)
SURG 1004	Equine Surgery	4(2-4)
SURG 1005	Ruminant Surgery	4(2-4)
SURG 1006	Ophthalmic and Auricular Surgery	3(2-2)
SURG 1007	Radiology and Ultrasonography	3(2-2)
SURG 1008	Advanced Anaesthesiology and Intensive Care	3(2-2)
SURG 1009	Advanced Readings in Veterinary Surgery	1(1-0)
SURG 1019	Special Problem	1(0-2)
SURG 1020	Seminar	1(1-0)

FACULTY

Clinical Medicine

Name: Prof. Dr. Muhammad Sarwar Khan
Professor

Qualification: D.V.M., M.Sc. (Hons), Ph.D. (UAF)

Area of Specialization: Veterinary Medicine

Name: Dr. Anila Zameer Duraani

Associate Professor

Qualification: D.V.M., M.Sc. (Hons), Ph. D (UVAS)

Area of Specialization: Veterinary Medicine

Name: Ms. Jawaria Ali Khan

Assistant Professor

Qualification: D.V.M., M.Sc. (Hons)

Area of Specialization: Veterinary Medicine

Name: Mr. Shahan Azeem

Assistant Professor

Qualification: D.V.M., M.Sc. (Hons),

Area of Specialization: Veterinary Medicine

Name: Mr. Imtaiz Rabbani

Lecturer (EOL, Ex Pakistan)

Qualification: D.V.M., M.Sc. (Hons)

Area of Specialization: Veterinary Medicine

Name: Mr. Muhammad Avais

Lecturer (on Study leave)

Qualification: D.V.M., M.Sc. (Hons)

Area of Specialization: Veterinary Medicine

Surgery

Name: Prof. Dr. Muhammad Arif Khan
Professor/ Chairman
Qualification: D.V.M., M.Sc. (Hons), Ph.D. (UVAS)
Area of Specialization: Veterinary Surgery

Name: Mr. Hamad Bin Rashid
Assistant Professor (on study leave)
Qualification: D.V.M., M.Sc. (Hons)
Area of Specialization: Veterinary Surgery

Name: Ms. Shela Gul Bukhari
Lecturer (EOL, Ex Pakistan)
Qualification: D.V.M., M.Sc. (Hons)
Area of Specialization: Veterinary Surgery

Name: Mr. Khalid Amin
Subject Specialist
Qualification: D.V.M., M.Sc. (Hons)
Area of Specialization: Veterinary Surgery, Ravi Campus, Pattoki

Pet Center

Name: Syed Saleem Ahmad
Assistant Professor
Qualification: D.V.M., M.Sc. (Hons)
Area of Specialization: Veterinary Medicine

Name: Mr. Asim Khalid Mahmood
Assistant Professor
D.V.M., M. Sc (Hons)
Area of Specialization: Veterinary Surgery

Name: Ms. Uzma Farid Durrani
Lecturer
Qualification: D.V.M., M.Sc. (Hons),
Area of Specialization: Veterinary Medicine

Name: Ms. Ayisha Safder Ch.
Lecturer
Qualification: D.V.M., M.Sc. (Hons)
Area of Specialization: Veterinary Medicine

Strengthening Of Veterinary Clinical Services

Name: Mr. Hassan Saleem
Assistant Professor
Qualification: D.V.M., M.Sc. (Hons)
Area of Specialization: Veterinary Medicine

Name: Ms. Sadaf Aslam
Lecturer (on study leave)
Qualification: D.V.M., M. Sc. (Hons)
Area of Specialization: Veterinary Medicine

DEPARTMENT OF MICROBIOLOGY

Introduction:

Department of Microbiology is one of the core establishments of UVAS. The main purpose of the department is to train the student for isolation and identifications of microbes of veterinary importance and to equip them with essentials of serological and molecular diagnosis, vaccine basics and fundamentals of diagnostics. The department has an age-old tradition of being run by the most qualified people in the field of Microbiology. Most of its staff is foreign qualified, competent and experienced; all well-versed in their respected areas of specializations. The Department houses five labs, one for undergraduate student training, one for postgraduate training, one for cell culture, mycology lab for both undergraduates and post graduates and other research lab for postgraduates. A cell culture facility is also available. Microbiology department attracts the most brilliant students in its master of philosophy and doctor of philosophy programs each year and grants equal opportunities to both genders. Its graduates have landed in very good jobs and are serving competitively various private and public institutions throughout the worlds.

Laboratory Facilities In Terms of Equipment:

1. Fluorescent Microscope and Inverted Microscope
2. Water distillation system
3. CO₂ incubator, Photo cabinet and egg incubator
4. Autoclave
5. Pipette washer ultrasonic generator model G
6. Cellulose acetate electrophoresis apparatus
7. Ice Maker
8. High Speed refrigerated centrifuge

9. Thin Layer chromatography apparatus
10. Roller tube culture incubator
11. Bio-fermentation system
12. ELISA reader
13. Spectrophotometer
14. Microwave and hot air ovens
15. Homogenizer and sonifier
16. Blotting system

Research Priorities

- i) Isolation and identification of the causative agents of the newly emerging microbial diseases of livestock and poultry.
- ii) Preparation and evaluation of biologics (vaccines, antimicrobial factors, diagnostic reagents, etc).
- iii) Qualitative and quantitative detection of mycotoxins and measures to overcome mycotoxicosis in animals.
- iv) Physico-chemical factors affecting the survival of microbial pathogens (Bio-security).
- v) Immunogenetics, Immunotherapy, Immunomodulations, Immunoprophylaxis, Immunoregulations and Immunodiagnosis of various diseases.

COURSES OFFERED FOR M.PHIL/PH.D IN MICROBIOLOGY

Course No.	Title	Credit Hrs.
MICR 1001	Microbiological Techniques	3(1-4)
MICR 1002	Clinical Microbiology	3(1-4)
MICR 1003	Advanced General Bacteriology	3(2-2)
MICR 1004	Immunology	3(2-2)
MICR 1005	Systemic Bacteriology	4(1-6)
MICR 1006	Advanced Virology	4(2-7)
MICR 1007	Mycology	3(1-4)
MICR 1008	Cellular and Molecular Immunology	3(2-2)
MICR 1009	Mycotoxicosis	3(1-4)
MICR 1010	Microbial Physiology	4(3-2)
MICR 1011	Cell Culture Techniques	3(2-2)
MICR 1012	Oncogenic Viruses	3(2-2)
MICR 1013	Molecular Biology of Bacterial Viruses	3(2-2)
MICR 1014	Advanced Anaerobiology	3(1-4)
MICR 1015	Advanced Spirochaetology	3(1-4)
MICR 1016	Immunological Techniques	3(0-6)
MICR 1017	Techniques in Molecular Biology	4(2-4)
MICR 1018	Advanced Epidemiology	4(3-2)
MICR 1019	Special Problem	1(0-2)
MICR 1020	Seminar	1(1-0)
MICR 1021	Vaccinology	3(2-2)
MICR 1022	Microbial Genetics	3(2-2)
MICR 1023	Avian Immunology	3(1-4)
MICR 1024	Animal Food Microbiology	4(2-4)
MICR 1025	Environmental Microbiology	3(2-2)
MICR 1026	Public Health Microbiology	4(3-2)
MICR 1027	Biotechnology	4(3-2)
MICR 1028	Current Topics in Immunology	1(1-0)
MICR 1029	Current Topics in Bacteriology	1(1-0)
MICR 1030	Current Topics in Virology	1(1-0)
MICR 1031	Current Topics in Mycology	1(1-0)

FACULTY

Name:	Prof. Dr. Khushi Muhammad Chairman
Qualification:	D.V.M., M. Sc. (Hons), Ph.D (USA)
Area of Specialization:	Microbiology/Immunology
Name:	Prof. Dr. Irshad Hussain (EOL Ex. Pakistan)
Qualification:	D.V.M., M. Sc. (Hons), Ph.D (USA), Post-Doc (USA)
Area of Specialization:	Molecular Biology
Name:	Dr. Aftab Ahmad Anjum Assistant Professor
Qualification:	D.V.M. M. Sc. (Hons), Ph.D ()
Area of Specialization:	Molecular Biology/ Mycology
Name:	Ms. Sameera Akhtar Assistant Professor (EOL Ex. Pakistan)
Qualification:	D.V.M., M.Sc. (Hons)
Area of Specialization:	Virology
Name:	Mr. Jawad Nazir Lecturer (EOL)
Qualification:	D.V.M., M.Sc. (Hons)
Area of Specialization:	Bacteriology
Name:	Mr. Imran Najeeb Lecturer
Qualification:	D.V.M., M. Sc. (Hons)
Area of Specialization:	Molecular Biology/ Phycology

UNIVERSITY DIAGNOSTIC LABORATORY (UDL)

(ACCREDITED LAB ISO/IEC 17025)

First Disease Diagnostic Lab Internationally Accredited In Veterinary & Medical Profession of Pakistan

INTRODUCTION



After the continuous team efforts of last three years and by the grace of Almighty Allah I feel pleasure to announce that University Diagnostic Laboratory (UDL), University of Veterinary & Animal Sciences Lahore, Pakistan has got “Certificate of Accreditation” as a veterinary disease diagnostic testing laboratory from Pakistan National Accreditation Council (PNAC) which has mutual recognition arrangements (MRAs) with International Laboratory Accreditation Cooperation (ILAC) and Asia Pacific Laboratory Accreditation Cooperation (APLAC). Now UDL, UVAS, Lahore, is included in the list of these disease diagnostic laboratories having equivalence status for testing laboratories all over the world (International Lab Accreditation Code- 033).

It is a milestone in the history of UVAS and livestock sector of Pakistan that a veterinary disease diagnostic laboratory, both in veterinary and medical profession has got international recognition and its results are now acceptable worldwide.

UDL is providing an array of diagnostic tests which are based on quality and cost effective testing to enhance the production potential of livestock and poultry in the country. The lab is equipped with modern diagnostic equipments, highly qualified and trained staff.

This strengthening of UDL has been possible through generous funding of Rs. 38.108 million from Higher Education Commission of Pakistan.

The lab has also implemented computer based “Diagnostic Information Management System (DIMS)” to ensure the good lab practices (GLP) and confidentiality of the client results.

DIAGNOSTIC SERVICES

An early diagnosis usually leads to accurate and successful treatment of the diseased animal. With this objective in mind University Diagnostic Lab is serving the nation by rendering diagnostic services to the livestock and poultry farmers and also to the pet owners. It has got almost all those diagnostic facilities requisite for routine monitoring of the livestock herds, poultry flocks, farms,

hatcheries, and feed mills to formulate preventive measures to avoid losses owing to possible morbidity and mortality of their animals in particular and economical losses to the industry in general. Dozens of disease outbreaks have successfully been tackled in last three years. The contribution of lab may be evaluated through the number of tests; on an average the lab is performing 800 – 1000 tests per month in December 2009. UDL is providing testing services for more than 70 tests in routine on nominal charges

Sr. No.	University / College	Country	Nature of Cooperation
1.	Division of Lab Animal Medicine, David Geffen School of Medicine, University of California, Los Angeles, CA	USA	Faculty development in Lab Animal Facility Management
2.	Department of Pathobiology, The University of Connecticut, Connecticut	USA	Collaborative Research & Faculty Development
3.	Institute of Animal Health, Compton	UK	- do -
4.	Animal Diagnostic Laboratory, PennState University	USA	- do -
5.	Atlantic Veterinary College, University of Prince Edward Island	Canada	Faculty Development
6.	Agriculture & Agri Food Cooperation (AAFC)	Canada	- do -

RESEARCH & DEVELOPMENT

UDL is also providing a solid platform for researchers, to find out complex factors causing huge economical losses to livestock sector. Currently fifteen postgraduate students are working in UDL on different research areas. To increase research activities and to provide a more conducive environment for research the Lab has few on going research projects on development of diagnostics and has submitted quite a few more projects to national and international funding agencies.

HUMAN RESOURCE DEVELOPMENT

UDL is playing a vital role in Human resource development through organizing workshops, providing trainings, refresher courses and diploma courses for UVAS staff, students, farmers, lab and field professionals and personnel from sister institutions of the country.

LINKAGES WITH FOREIGN RESEARCH ORGANIZATION / UNIVERSITIES:

University Diagnostic Laboratory has established linkages at international levels with different research institutes and labs for sharing of knowledge, collaborative research and faculty development.

STAFF POSITION

NAME / DESIGNATION	
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MR. AAMIR GHAFUOR BAJWA Ph.D Scholar (New Zealand) Assistant Professor	MR. ALI AHMAD SHEIKH PhD Scholar (Canada) Lecturer
MR. ARFAN AHMAD PhD Scholar (Canada) Lecturer	MR. M. ZUBAIR SHABBIR PhD Scholar (UVAS) Lecturer
MS. FARIHA AKHTAR PhD Scholar (UVAS) Lecturer	MUHAMMAD FAROOQ BS (CS) Computer Data Analyst / MR ISO 17025

DIAGNOSTIC TEST FACILITY AT UDL

NAME OF TEST
MICROBIOLOGY
Postmortem for poultry
Culture sensitivity Test
Viable bacterial count (water, feed, feed ingredients, Hatchery fluff, etc.)
Coliform count
Isolation and identification of Salmonella (Species)
Isolation and identification of <i>E. coli</i> (Species)
Isolation and identification of Staphylococcus (Species)
Isolation and identification of <i>Pasteurella multocida</i>

MG culturing and identification <i>Mycoplasma gallisepticum</i>
Plate exposure for bacteria (Environmental testing) / swab testing
Antibacterial activity of disinfectant
Antiviral activity of disinfectant
Isolation and identification of Avian Influenza (AI) virus & New Castle disease (ND) Virus
SEROLOGY
POULTRY
Infectious bronchitis, IB (M-41) antigen for HI antibody titres
Infectious bronchitis, IB (D-274) antigen for HI antibody titres
Infectious bronchitis, IB (D-1466) antigen for HI antibody titres
ELISA for detection of Antibodies against IBD (Gumboro) virus
ELISA for detection of Antibodies against <i>Mycoplasma gallisepticum</i>
ELISA for detection of Antibodies against <i>Mycoplasma synoveae</i>
Salmonella pullorum antigen for spot test (Imported)
HI Test for antibodies against New castle disease (ND) or Avian Influenza (AI) or Egg Drop Syndrome (EDS) viruses, (1-8 Samples)
Agar gel precipitation test (Qualitative), (1-4 Samples)
Indirect Fluorescent antibody test (iFAT)
ELISA for detection of Antibodies against Fowl Cholera
ELISA for detection of Antibodies against Chicken Anemia Agent (CAA)
ELISA for detection of Antibodies against Inf. Laryngotracheitis (ILT) virus
ELISA for detection of Antibodies against Reovirus
ELISA for detection of Lymphoid leucosis
HORSES, BUFFALO, CATTLE, SHEEP AND GOAT
ELISA for detection of Antibodies against Foot & Mouth Disease Virus (FMDV), (Specific for Cattle & Buffalo)
Rose Bengal Plate test for brucellosis
Rose Bengal Brucella antigen for plate test (Imported antigen)
Brucella Tube Agglutination test (SAT)

DOGS AND CATS
HA test for exam; to confirm the presence of Canine Parvovirus (CPV) per sample
HI test for determining antibody titer against Canine Parvovirus (CPV) in dog serum
Hyperimmune serum to cure the Canine Parvovirus (CPV) infected dog (64 HI units of antibodies/dose)
Hyperimmune Serum to Cure early diagnosed Cases of Canine Distemper Virus (CDV) infected dogs (1:32 AGPT units of antibodies per dose)
ELISA for detection of Antibodies of Canine Parvovirus & Canine Distemper
ELISA for detection of Rabies antibodies
MISCELLANEOUS TESTS (Per Sample)
Tuberculin test (imported antigen) for detection of Tuberculosis
Tuberculin test (local antigen) for detection of Tuberculosis
Johnin test (Imported antigen) for detection of Johne's disease
Mallein test for detection of Glanders in equines
Blood test for parasite (Haemoparasites)
Complete blood count (Haematological Analyzer)
White side / surf test for early detection of mastitis
Fecal examination for parasites ova detection
Skin scrapping for detection of ectoparasites
pH of water
Hardness of water
Sodium
Potassium
Calcium
Lithium
Total serum / plasma protein
Total serum / plasma Calcium
Total serum / plasma Magnesium
Total serum / plasma Phosphorus

MOLECULAR BIOLOGICAL TESTS
PCR for diagnosis of Bird flu (H5N1) virus
PCR for diagnosis of Avian Influenza (H9N2) virus
PCR for diagnosis of Avian Influenza (H7N3) virus
PCR for diagnosis of ND virus
PCR for diagnosis of Rabies virus
PCR for diagnosis of Canine Distemper virus
PCR for diagnosis of Canine Parvo virus
PCR for diagnosis of Mycoplasma gallisepticum
PCR for other DNA viruses
PCR for other RNA viruses
New Diagnostic test added and rates revised
Serum Electrolytes
• Total serum / plasma Sodium
• Total serum / plasma Potassium
• Total serum / plasma Calcium
• Total serum / plasma Chloride
Liver Function Test (LFT)
• Alkaline Phosphatase
• ALT
• AST
• Billirubin
Renal Function Test
• Serum / plasma Creatinine
• Blood Urea Nitrogen

DEPARTMENT OF PARASITOLOGY

Introduction:

Department of Parasitology was established in 1923 with the aim to disseminate and generate scientific knowledge relating to Parasitology. Parasites are common in animals and department is striving to generate awareness about the risks and losses associated with them. Department is playing a key role in this regard through education and research. Master (M.Sc.) degree programme was started in 1978 and so far 135 students completed their M.Sc. (Hons) / M. Phil. Whereas Ph.D. degree programme was initiated in 1998 and four Students completed their Ph.D. Graduates of this department are serving in various national & international organizations. Presently 23 students are pursuing their M. Phil and Ph.D. degrees in the department. Several research projects were completed in the department. Prof. Dr. Azhar Maqbool is an approved HEC Supervisor and 05 scholars are doing their Ph. D under HEC, Ph. D fellowship scheme. In future department intends to establish immunoparasitology / molecular parasitology laboratories and a parasite bank at national level.

Laboratory Facilities:

Department is well equipped with facilities to undertake research in the discipline. Our laboratory is providing research facilities and has collaboration with other institutes. Department is also imparting diagnostic services to livestock and poultry farmers, Lahore Zoo, Brookes Hospital and various departments of the University.

Advisory Services to Farmers:

Advisory services are provided to livestock sector to reduce the economic losses associated with parasites and to realize improved production through parasite control.

Research Priorities:

- i) Studies on the prevalence and control of zoonotic parasites.
- ii) Surveillance, diagnosis and control of important helminthic and protozoan infections.
- iii) Studies on arthropods of veterinary importance, their control and insect borne diseases.

COURSES OFFERED FOR M.PHIL/PH.D IN PARASITOLOGY

Course No.	Title	Credit Hrs.
PARA 1001	Advanced Parasitology General	4(3-2)
PARA 1002	Advanced Protozoology	4(3-2)
PARA 1003	Medical Entomology	4(3-2)
PARA 1004	Diagnostic Techniques in Parasitology	4(2-4)
PARA 1005	Wildlife Parasitology	3(1-4)
PARA 1006	Chemotherapy of Parasitic Diseases	4(3-2)
PARA 1007	Physiology of Endoparasites	4(3-2)
PARA 1008	Immunology of Parasitic Infections	4(3-2)
PARA 1009	Ecology of Animal Parasites	3(3-0)
PARA 1010	Medical Protozoology and Helminthology	4(3-2)
PARA 1011	Applied Helminthology	4(2-4)
PARA 1012	Epidemiology of Parasitic Diseases	4(2-4)
PARA 1013	In-Vitro Cultivation of Parasites	4(2-4)
PARA 1014	Biotechnology for Parasitic Control	4(2-4)
PARA 1015	Techniques in Molecular Parasitology	4(2-4)
PARA 1016	Advanced Parasitic Zoonoses	3(2-2)
PARA 1019	Special Problem	1(0-2)
PARA 1020	Seminar	1(1-0)

FACULTY

Name	Dr. Khalid Saeed
Qualification	Chairman D.V.M., M. Sc. (Hons), Ph.D. (USA)
Area of Specialization	Epidemiology and economic importance of parasites, protozoan zoonosis.
Name	Prof. Dr. Azhar Maqbool
Qualification	Professor D.V.M., M. Sc. (Hons), Ph.D.
Area of Specialization	Epidemiology and Chemotherapy of Zoonotic Parasites
Name	Dr. Muhammad Lateef
Qualification	Associate Professor D.V.M., M. Sc. (Hons), Ph.D.
Area of Specialization	Epidemiology and control of nematodes warble fly infection
Name	Dr. Kamran Ashraf
Qualification	Associate Professor D.V.M., M. Sc. (Hons), Ph.D. (UVAS)
Area of Specialization	Epidemiology & control of companion animal parasites
Name	Mr. Nisar Ahmad
Qualification	Assistant Professor D.V.M., M.Sc. (Hons), Ph.D. Scholar
Area of Specialization	Parasites of companion animals
Name	Mr. Wasim Shehzad
Qualification	Assistant Professor D.V.M., M.Sc. (Hons)/ Ex-Pakistan Study Leave
Name	Mr. Muhammad Imran Rashid
Qualification	Assistant Professor D.V.M.,M.Sc. (Hons)/ Ex-Pakistan Study Leave
Name	Mr. Haroon Akbar
Qualification	Lecturer D.V.M.,M.Sc. (Hons)/ Ex-Pakistan Study Leave

DEPARTMENT OF PATHOLOGY

Introduction

The department of pathology is fulfilling the ever increasing demands successfully in the field of research and academics in poultry and livestock sector. Undoubtedly, it is one of the best departments in the university and is equipped with latest equipments. Recently, molecular based diagnostic (PCR) laboratory has been added to facilitate research in this area. A number of research projects are also being undertaken by the department. In addition to teaching various undergraduate and postgraduate classes, department is carrying out various activities like post mortem examination of poultry, large & small animals, hematology, blood chemistry and urinalysis. So, it's a great opportunity for postgraduate students especially to learn the modern techniques and equipments to cope with the ever changing demands of the profession. The research priorities of the Department are

1. Pathology and pathogenesis of diseases due to mineral deficiencies.
2. Pathology, pathogenesis and diagnosis of hemoprotozoan diseases.
3. Pathogenesis and diagnosis of anemia in dogs and cats.
4. Pathology, pathogenesis and diagnosis of chronic intracellular bacterial infections.
5. Studies on pathological effects of drugs/indigenous plants/ fungal toxins in animals and poultry.
6. Pathology and pathogenesis of infectious and non-infectious diseases of poultry.

Development of molecular diagnostic techniques for infectious diseases.

Activities of Deptt. in Addition to Training & Research

Post mortem examination of poultry, large and small animals
Hematology
Blood Chemistry
Liver and kidney function tests
Serum analysis
Histopathology
Urinalysis
Image analysis
Fluorescent Microscopy
PCR

Courses Offered

Course No	Title	Credit Hrs
PATH 1001	Advanced General Pathology	4(3-2)
PATH 1002	Advanced Clinical Pathology	3(1-4)
PATH 1003	Necropsy Practice	2(0-4)
PATH 1004	Diagnostic Pathology	3(0-6)
PATH 1005	Oncology	3(2-2)
PATH 1006	Pathology of intoxications	3(3-2)
PATH 1007	Canine and Feline Pathology	3(2-2)
PATH 1008	Ruminants Pathology	4(3-2)
PATH 1009	Equine Pathology	3(2-2)
PATH 1010	Camel Pathology	3(2-2)
PATH 1011	Fish Pathology	3(2-2)
PATH 1012	Wildlife Pathology	3(2-2)
PATH 1013	Pathology of infectious diseases of Poultry	4(3-2)
PATH 1014	Pathology of non-infectious diseases of Poultry	3(2-2)
PATH 1015	Food Animal Pathology	3(2-2)
PATH 1016	Immunopathology	3(2-2)
PATH 1017	Molecular Pathobiology	3(2-2)
PATH 1019	Special Problem	1(0-2)
PATH 1020	Seminar	1(1-0)

Facilities

Principal Equipment	Salient Features/Services
<ul style="list-style-type: none"> • Molecular based diagnostic lab • Automatic Tissue Processor • Cryostat, Auto staining unit • Hematology Analyzer • Chemistry Analyzer • Image Analysis System • Fluorescent Microscope • pH meter, Spectrophotometer • Advanced microscopes attached with cameras and multimedia 	<ul style="list-style-type: none"> <i>f</i> Polymerase Chain Reaction for Genetic Analysis Bacterial, Viral, and Protozoan Parasites <i>f</i> Histopathology, Automatic Tissue Processing <i>f</i> Cryosectioning, Auto Staining <i>f</i> Hematology <i>f</i> Blood Chemistry Analysis <i>f</i> Immunohistochemistry <i>f</i> Fluorescent Microscopy for chromosomes and cells <i>f</i> Postmortem Examination <i>f</i> Routine Urine Analysis <i>f</i> Detection of Mycobacteria <i>f</i> Meat Inspection

FACULTY

Name:	Dr. Asim Aslam
Qualification:	Acting Chairman / Assistant Professor
Area of Specialization:	D.V.M, M.Sc. (Hons), Ph. D (UVAS)
	Veterinary Pathology
Name:	Ms. Gulbeena Saleem (EOL)
Qualification:	Assistant Professor
Area of Specialization:	D.V.M, M. Sc. (Hons)
	Veterinary Pathology
Name:	Dr.Mati-ur_Rehman Khan
Qualification:	Assitant Professor
Area of Specialization:	D.V.M, M. Sc. (Hons.), PhD, (China)
	Veterinary Pathology
Name:	Mr. Kashif Aziz Khan (EOL)
Qualification:	Lecturer
Area of Specialization:	D.V.M, M.Sc (Hons)
	Veterinary Pathology
Name:	Mr. Salik Hussain (EOL)
Qualification:	Lecturer
Area of Specialization:	D.V.M, MSc (Hons)
	Veterinary Pathology
Name:	Mr. Muhammad Suleman
Qualification:	Lecturer (E.O.L.)
Area of Specialization:	DVM, M.Sc. (Hons)
	Veterinary Pathology
Name:	Ms. Raheela Akhtar
Qualification:	Lecturer
Area of Specialization:	DVM, M.Sc. (Hons)
	Veterinary Pathology
Name:	Mr. Ishtiaq Ahmad
Qualification:	Lecturer (on contract)
Area of Specialization:	DVM, M.Sc. (Hons)
	Veterinary Pathology
Name:	Hafiza Qamar-un-Nisa
Qualification:	Lecturer
Area of Specialization:	DVM, M. Phil
	Veterinary Pathology

DEPARTMENT OF EPIDEMIOLOGY AND PUBLIC HEALTH

Introduction

After the up gradation of CVS to UVAS, Lahore, the Department was established in 2002. Our mission is to educate competent and committed public health professionals and research scientists in epidemiology, develop & maintain Master of Public Health (MPH) degree program and well-supported doctoral programs, incorporate contemporary computer technology in the delivery of instruction and enhance faculty teaching.

Facilities

Level-II laboratory facilities are available at this time. Following are the major equipment present in the post-graduate lab of the Department:

Testing Equipment (Major Only)	
1.	Ion Analyzer
2.	Biohazard Safety cabinet class-II
3.	Microscope Research with built in digital camera, model M9, swift Japan with computer and printer
4.	Digital Camera
5.	(EUSA Reader) spectrophotometer

Research priorities

Research priorities are focused to conduct innovative epidemiologic research for risk assessment, development and maintain center of excellence in epidemiology, food hygiene, public health and herd health. To maintain and increase departmental research, funding and scholarship on following Research areas:

1. Herd health in relation to food animal production.
2. Disease prevention, control and eradication.
3. Food safety standards with respect to milk & meat quality control.
4. Epidemiology and ranking order of infectious and non-infectious diseases of poultry & livestock
5. Investigation of outbreaks/ epidemics.
6. Animal and public health policy.

COURSES OFFERED

Course No.	Title	Credit Hrs.
EPPH 1000	Research & Thesis dissertation.	10(10-0)
EPPH 1001	Design and analysis of clinical trails	4(3-2)
EPPH 1002	Advanced veterinary preventive medicine	4(3-2)
EPPH 1003	Epidemiological approaches to disease	4(4-0)
Investigation and Control		
EPPH 1004	Communicable disease control	4(3-2)
EPPH 1005	Epidemiological surveillance	4(3-2)
EPPH 1006	Case control studies and cohort studies	4(3-2)
EPPH 1007	Advanced Reading in preventive medicine	1(1-0)
Public Health		
EPPH 1008	Zoonoses and their control strategies	3(3-0)
EPPH 1009	Advanced herd health and husbandry practices	
EPPH 1010	Problems in disease control and eradication	3(3-0)
EPPH 1011	Active surveillance and passive surveillance	3(3-0)
EPPH 1012	Control of mastitis, neonatal mortality and infertility	3(3-0)
EPPH 1013	Epidemiology and control of reproductive disorders	2(2-0)
EPPH 1014	Epidemiology and control of sheep and goat diseases	3(3-0)
EPPH 1015	Epidemiology and control of avian diseases	3(3-0)
EPPH 1016	Advanced strategies for livestock vaccination	2(2-0)
EPPH 1017	Surveillance and control of avian diseases	3(3-0)
EPPH 1018	Advanced strategies of poultry vaccination	2(2-0)
EPPH 1019	Special problem	1(0-2)
EPPH 1020	Seminar	1(1-0)

FACULTY

Name: Prof. Dr. Mansur-ud-Din Ahmad
Chairman/ Professor
Qualification: D.V.M., M. Sc. (Hons), Ph.D (Australia)
Area of Specialization: Monoclonal Antibodies

Name: Dr. Muhammad Athar Khan
Assistant Professor (Tenure Track System)
Qualification: D.V.M., M.Sc. (Hons.), M.P.H., Ph.D. (USA)
Area of Specialization: Veterinary Epidemiology and Public Health

Name: Ms. Mamoona Chaudhry
Assistant Prof. (On Ex-Pakistan Study Leave)
Qualification: D.V.M., M.Sc. (Hons.)
Area of Specialization: Veterinary Epidemiology and Public Health

Name: Mr. Tariq Abbas
Lecturer (On Ex-Pakistan Study Leave)
Qualification: D.V.M., M.Sc. (Hons.)
Area of Specialization: Veterinary Epidemiology and Public Health

Department of Theriogenology

Introduction

The Department of Animal Reproduction (now Theriogenology) was established in 1980. The founder chairman of the Department was Prof. Dr. Manzoor Ahmad. Ph.D Program commenced in 2004. Some of the former graduate of this Department attained primary positions in the area teaching, research and clinical work in the USA and Canada. More than 80 M.Sc (Hons) and M.Phil students have so far been produced.

The main objectives are as under:

- To Train (theory, practical, clinical), DVM and M.Phil/ Ph.d students in Theriogenology.
- To train stake holder and para vets through short courses and workshops in theriogenology.
- To carry out applied and basic problems oriented research in reproduction.
- To provide clinical services to the animal owners in animal reproduction.

Facilities

The Department has experimental herd of more than 25 cattle and buffalo, maintained at the animals shed. The department has a clinic where outdoor and indoor facilities are available for the diagnosis, management and treatment of referred sick animals. The state of the art diagnostic and research ultrasonography are available. Scinetific papers from this department have been published in peer reviewed international journals like Theriogenology, Animal Reproduction Science, The Veterinary Record etc.,

Research Priorities

Presently four Ph.D and nine M.Phil students are enrolled. The department has one ongoing HEC research project “Effect of synchronization and improved reproductive management on productive and reproduction and economics.” The priorities of research are:

- i) Preservation, evaluation and A.I. services with Semen.
- ii) Ovarian follicular development in farm animals (local breed)

COURSE OFFERED

Course No.	Title	Credit Hrs.
THER 1001	Reproduction in farm animals	4(3-2)
THER 1002	Artificial insemination	4(3-2)
THER 1003	Comparative reproduction	4(3-2)
THER 1004	Physiological chemistry and preservation of semen	4(3-2)
THER 1006	Advanced obstetrics	4(3-2)
THER 1007	Infertility and genital diseases	4(3-2)
THER 1008	Equine reproduction	4(3-2)
THER 1009	Canine reproduction	4(3-2)
THER 1010	Embryo Transfer in farm animals	4(1-6)
THER 1011	Diagnostic ultrasonography in animal reproduction	3(1-4)
THER 1012	Camel reproduction	3(2-2)
THER 1019	Special problem	1(0-2)
THER 1020	Seminar	1(1-0)

FACULTY

Name:	Prof. Dr. Nasim Ahmed Dean/ Professor (Tenure Track System)
Qualification:	D.V.M., M. Sc (Hons), Ph.D (USA)
Area of Specialization:	Reproductive Physiology
Name:	Prof. Dr. Muhammad Aleem Chairman/ Professor
Qualification:	D.V.M., M. Sc (Hons), Ph.D. (USA), Post Doc (UK)
Area of Specialization:	Obstetrics & Genital Diseases
Name:	Dr. Mian Abdul sattar Associate Professor
Qualification:	D.V.M., M. Sc (Hons), Ph.D
Area of Specialization:	Reproductive Management
Name:	Mr. Muhammad Amir Saeed Assistant Professor (EOL)
Qualification:	D.V.M., M.Sc. (Hons)
Area of Specialization:	Animal Reproduction
Name:	Dr. Amjad Riaz Assistant Professor (Tenure Track System)
Qualification:	D.V.M., M. Sc (Hons), Ph.D
Area of Specialization:	Reproductive Biotechnology
Name:	Mr. Ajaz Ali Channa Lecturer
Qualification:	D.V.M., M.Sc. (Hons)
Area of Specialization:	Animal Reproduction
Name:	Mr. Muhammad Irfan-ur-Rehman Khan Lecturer (EOL)
Qualification:	D.V.M., M.Phil
Area of Specialization:	Theriogenology
Name:	Mr. Daulat Rehman Lecturer (E.O.L)
Qualification:	D.V.M., M. Phil
Area of Specialization:	Theriogenology
Name:	Mr. Muhammad Rizwan Yousaf Lecturer
Qualification:	D.V.M., M. Sc (Hons)
Area of Specialization:	Animal Reproduction

FACULTY OF ANIMAL PRODUCTION
& TECHNOLOGY

M.Phil/ M.Phil Leading to Ph.D/ Ph.D offering Departments

Department of Food & Nutrition

Department of Livestock Production

Department of Poultry Production

Department of Dairy Technology

DEPARTMENT OF FOOD & NUTRITION

INTRODUCTION

Department of Food & Nutrition started as Animal Nutrition Section which was established at College Of Animal Husbandry in 1954 under the inter-college exchange program between the Punjab University (College of Animal Husbandry) and Washington State University U.S.A. Later on the section was transferred to the Directorate of Livestock Farms in 1962. After integration with College of Veterinary Sciences, Lahore the nomenclature of Section was changed to Department of Animal Nutrition. Since its inception department has significantly contributed in solving field problems. It has played a pivotal role in providing the trained man power in the filed of Animal Nutrition and met the demand of Poultry Feed Industry. It has produced more than 350 M.Sc. (Hons)/M.Phil students in the subject of Animal Nutrition. Department is well equipped with teaching staff of 11 Faculty with 5 Ph.D in the subject. Three Faculty members (Professor Dr. Talat Naseer Pasha, Prof. Dr. Makhdoom Abdul Jabbar and Dr. Muhammad Nasir) are the approved Supervisors from HEC. Department has the privilege of having an International Faculty (Prof. Dr. Arata Koga) from Japan.

At present, Department has two specialized Disciplines i.e. Animal Nutrition and Food and Nutrition (Human Nutrition). The Discipline of Food and Nutrition was initiated in 2008-09 after the approval from statutory bodies of the university. At present only Postgraduate Degree is being awarded in the Discipline of Food and Nutrition. However, initiation of undergraduate degree program in this subject is under process. Mission of the Department is to train the manpower through hand on training so that they may not feel difficulty in solving problems when they start their practical life.

Laboratory Facilities

Department laboratories are under the evolutionary phase. There are different modern and sophisticated instruments available including Gas Chromatography, Bomb Calorimeter and flame photometer etc. Undergraduate and post graduate laboratories are well equipped and students remain engaged in learning different analytical skills.

COURSES OFFERED FOR M.PHIL/PH.D IN ANIMAL NUTRITION

Course No.	Title	Credit Hrs.
NUTR-1001	Physiology and Biochemistry of Animal Nutrition	4(4-0)
NUTR-1002	Feed Resources and Their Nutritive Value	3(2-2)
NUTR-1003	Energy Metabolism	3(3-0)
NUTR-1004	Protein Metabolism	3(2-2)
NUTR-1005	Minerals in Animal Nutrition	3(2-2)
NUTR-1006	Vitamins in Animal Nutrition	3(2-2)
NUTR-1007	Analytical Techniques in Animal Nutrition	4(0-8)
NUTR-1008	Advanced Chemical & Biological Techniques in Animal Nutrition	2(0-4)
NUTR-1009	Research Designing and Methodology in Animal Nutrition	3(2-2)
NUTR-1010	Nutrition of Broiler	3(2-2)
NUTR-1011	Nutrition of Layers	3(2-2)
NUTR-1012	Nutrition of Indigenous Poultry & other Birds	3(2-2)
NUTR-1013	Equine Nutrition	2(2-0)
NUTR-1014	Camel Nutrition	2(2-0)
NUTR-1015	Nutrition of Dairy Animals	3(2-2)
NUTR-1016	Nutrition of Beef Animals	3(2-2)
NUTR-1017	Nutrition of Small Ruminants	3(2-2)
NUTR-1018	Feed Manufacturing Technology	3(2-2)
NUTR-1019	Special Problem	1(0-2)
NUTR-1020	Seminar	1(1-0)
NUTR-1021	Recent Advances in Animal Nutrition	2(2-0)
NUTR-1022	Toxins and Anti-nutritional Factors in Indigenous Feedstuffs	3(2-2)
NUTR-1023	Fish Nutrition	2(1-2)
NUTR-1024	Nutrition of Pet and Zoo Animals	2(1-2)
NUTR-1025	Feed Biotechnology	3(2-2)

COURSES OFFERED FOR M.PHIL/PH.D IN FOOD AND NUTRITION

Course No.	Title	Credit Hrs.
FNUT-1001	Introduction to Human Nutrition	3(3-0)
FNUT-1002	Introduction to Food Science	3(2-2)
FNUT-1003	Biochemistry & Physiology of Human Body	3(2-2)
FNUT-1004	Protein Metabolism	3(2-2)
FNUT-1005	Energy Metabolism	3(2-2)
FNUT-1006	Vitamins & Minerals in Human Nutrition	3(2-2)
FNUT-1007	Dietetics	3(2-2)
FNUT-1008	Human Nutrition Disorders & Disease Prevention	3(2-2)
FNUT-1009	Community Nutrition	2(2-0)
FNUT-1010	Lab. Techniques in Human Nutrition	2(0-4)
FNUT-1011	Food Processing & Cooking Recipes	4(2-4)
FNUT-1012	Clinical Nutrition	4(3-2)
FNUT-1013	Maternal & Pediatric Nutrition	2(2-0)
FNUT-1014	Sports Nutrition	2(2-0)
FNUT-1015	Nutraceuticals /Functional Foods	2(2-0)
FNUT-1016	Research Methods in Human Nutrition	2(1-2)
FNUT-1019	Special Problem	1(0-2)
FNUT-1020	Seminar	1(1-0)

FACULTY

Name:	Prof. Dr. Talat Naseer Pasha Dean/ Professor
Qualification:	D.V.M., M. Sc (Hons), Ph.D (U.S.A)
Area of Specialization:	Animal Nutrition
Name:	Prof. Dr. Makhdoom Abdul Jabbar Professor/ Chairman
Qualification:	D.V.M., M. Sc (Hons), Ph.D (U.S.A)
Area of Specialization:	Dairy & Beef Nutrition
Name:	Prof. Dr. Anjum Khalique Professor
Qualification:	D.V.M., M. Sc (Hons), Ph.D ()
Area of Specialization:	Animal Nutrition
Name:	Dr. Arata Koga Foreign Faculty (HEC)
Qualification:	Ph.D
Area of Specialization:	Energy Metabolism
Name:	Dr. Saima Assistant Professor (Tenure Track System)
Qualification:	Ph.D
Area of Specialization:	Animal Nutrition
Name:	Dr. Muhammad Nasir Assistant Professor (Tenure Track System)
Qualification:	Ph.D
Area of Specialization:	Food Technologist
Name:	Mr. Muhammad Kamran Lecturer (on study leave)
Qualification:	M.Sc (Hons)
Area of Specialization:	Animal Nutrition
Name:	Mr. Saeed Ahmad Lecturer (on study leave)
Qualification:	M.Sc (Hons)
Area of Specialization:	Animal Nutrition

Name: Miss. Samra Iqbal
Lecturer (E.O.L)
Qualification: M.Sc (Hons)
Area of Specialization: Animal Nutrition

Name: Mr. Ehsan Ullah Khan
Lecturer (on contract)
Qualification: M. Phil
Area of Specialization: Animal Nutrition

Name: Ms. Zarah Khan
Lecturer (on contact)
Qualification: M. Sc
Area of Specialization: Food & Nutrition, Public Health & Preventive Medicine

Name: Mr. Umar Farooq
Lecturer
Qualification: M. Phil
Area of Specialization: Animal Nutrition

DEPARTMENT OF LIVESTOCK PRODUCTION

Introduction

Department of Livestock Production includes two disciplines.

- 1) Livestock Management
- 2) Animal Breeding & Genetics

The department of livestock Production has won following development and research projects:

- Poultry & Dairy Project Funded by HEC
- Dairy Training and Development Centre by HEC
- Small Ruminants Training and Research Centre Funded by HEC
- Genetic Diversity of Pakistani Sheep and Goat Breeds by Analysis of Mitochondrial D-loop Region Funded by HEC.
- Feeding Management for Optimum Growth, Early Maturity and First Lactation performance in Sahiwal Cattle (APL funded).

Laboratory Facilities

This department has established well equipped Animal Genomic Research (AGR) Laboratory for genomic studies on different breeds and species of livestock. The two milking machines are available for practical demonstration.

Farm Facilities

This Department has an established Small Ruminant Training Research Centre at New Campus, Pattoki. Development of Cattle and Buffalo modern farms is underway.

COURSES OFFERED FOR M.PHIL/PH.D IN LIVESTOCK MANAGEMENT

Course No.	Title	Credit Hrs.
LSMG-1001	Dairy Technology	4(3-2)
LSMG-1002	Lactation Biology	4(3-2)
LSMG-1003	Behavior and Welfare of Farm Animals	4(3-2)
LSMG-1004	Commercial Livestock Production	4(3-2)
LSMG-1005	Livestock Production in the Tropics	4(3-2)
LSMG-1006	Livestock Production on Ranges and Pastures	3(2-2)
LSMG-1007	Management of Draught Animals	3(2-2)
LSMG-1008	Meat Production	4(3-2)
LSMG-1009	Small Ruminants Production	4(3-2)
LSMG-1010	Animal Fiber Science	4(3-2)
LSMG-1011	Livestock Production Trends and Potential	4(4-0)
LSMG-1012	Recent Advances in Livestock Management	3(3-0)
LSMG-1019	Special Problem	1(0-2)
LSMG-1020	Seminar	1(1-0)

COURSE OFFERED FOR FOR M.PHIL/PH.D IN ANIMAL BREEDING AND GENETICS

Course No.	Title	Credit Hrs.
ANBG-1001	General Genetics	4(3-2)
ANBG-1002	Population Genetics	4(3-2)
ANBG-1003	Animal Breeding Plans	3(2-2)
ANBG-1004	Breeding of Farm Animals	4(3-2)
ANBG-1005	Statistical Method in Animal Production Research	4(3-2)
ANBG-1006	Efficiency of Reproduction in Farm Animals	4(3-2)
ANBG-1007	Biometrical Genetics	4(3-2)
ANBG-1008	Theory of Genetic Selection	4(4-0)
ANBG-1009	Inbreeding in Farm Animals	4(3-2)
ANBG-1010	Experimental Techniques in Population Genetics	4(2-4)
ANBG-1011	Molecular Genetics	4(3-2)
ANBG-1012	Poultry Genetics and Breeding	4(3-2)
ANBG-1013	Fish Genetics and Breeding	3(3-0)
ANBG-1014	Advanced Animal Breeding	4(4-0)
ANBG-1019	Special Problem	1(0-2)
ANBG-1020	Seminar	1(1-0)

FACULTY

Name: Prof. Dr. Muhammad Abdullah
Professor/ Chairman
Qualification: Ph.D (U.S.A)
Area of Specialization: Dairy Science

Name: Dr. Khalid Javed
Associate Professor
Qualification: Ph.D
Area of Specialization: Population Genetics

Name: Dr. Jalees Ahmed Bhatti
Assistant Professor
Qualification: M.Sc (Hons), Ph. D
Area of Specialization: Forage Production & Utilization
Dr. Ahmad Ali???

Name: Mr. Nisar Ahmed
Assistant Professor
Qualification: M.Sc (Hons)
Area of Specialization: Livestock Production

Name: Mr. Imtiaz Ahmed Sajid
Lecturer (on study leave)
Qualification: M.Sc (Hons)
Area of Specialization: Cyto Genetics

Name: Mr. Qamar Shahid
Lecturer (on study leave)
Qualification: M.Sc (Hons) A.H
Area of Specialization: Livestock Management

Name: Mr. Hamid Mustafa Pasha
Lecturer (on contract)
Qualification: D.V.M
Area of Specialization: Livestock Management

Name: Mr. Imran Moshin
Lecturer (on contract)
Qualification: M. Phil
Area of Specialization: Livestock Management

DEPARTMENT OF POULTRY PRODUCTION

Introduction

The Department of Poultry Production offers M.Phil and Ph.D degree programs. Besides teaching and research work, the department is also providing extension services in the form of technical advices to layer, broiler and breeder farmers, hatcheries, poultry processing plants and allied groups. A close liaison has been established between the department and different national and international groups of poultry industry which helps in identifying the real issues and problems of Poultry industry. The research findings based on problem oriented research are communicated to the stake holders through meetings and group discussions

Research Priorities

- I. Revitalization of spent birds through induced molting.
- ii. Nutritional and Managemental practices to combat heat stress in commercial poultry birds.
- lii Effect of different Storage Times, Temperature, Humidity, Turning and Pre-heating during holding period on hatchability of Broiler/Layer/Quail breeder eggs.
- IV. Evolving commercial and rural poultry strain suitable to local environmental conditions.

COURSE OFFERED FOR FOR M.PHIL/PH.D IN POULTRY PRODUCTION

Course No.	Title	Credit Hrs.
PPRO-1001	Poultry Breeding and Production	4(3-2)
PPRO-1002	Hatchery Operation and Management	4(3-2)
PPRO-1003	Poultry Housing and Environment	4(3-2)
PPRO-1004	Poultry Feeding Practices	4(3-2)
PPRO-1005	Commercial Layer Farming	4(3-2)
PPRO-1006	Production of Table Poultry	4(3-2)
PPRO-1007	Poultry Health and Hygiene	4(3-2)
PPRO-1008	Poultry Products	4(3-2)
PPRO-1009	Avian Physiology	3(2-2)
PPRO-1010	Avian Embryology	3(2-2)
PPRO-1011	Poultry Business Management	3(2-2)
PPRO-1012	Recent Advances in Poultry Science	3(2-2)
PPRO-1013	Poultry Industry in Pakistan	3(2-2)
PPRO-1019	Special Problem	1 (0-2)
PPRO-1020	Seminar	1 (1-0)

FACULTY

Name: Prof. Dr. Muhammad Akram
Professor/ Chairman
Qualification: Ph.D (UAF), Post Doc (S. Korea)
Area of Specialization: Poultry Husbandry

Name: Dr. Abdul Waheed Sahota
Associate Professor
Qualification: Ph.D (UAF).
Area of Specialization: Poultry Husbandry

Name: Dr. Farina Malik Khattak
Associate Professor (E.O.L)
Qualification: Ph.D (UK)
Area of Specialization: Poultry Husbandry

Name: Mr. Athar Mahmud
Assistant Professor
Qualification: M.Sc (Hons.) (UAF)
Area of Specialization: Poultry Husbandry

Name: Mr. Shahid Javaid
Assistant Professor
Qualification: M.Sc(Hons)
Area of Specialization: Poultry Husbandry

Name: Mr. Imran Zahoor
Lecturer (on study leave)
Qualification: M. Phil
Area of Specialization: Poultry Production

Name: Ms Atia Bashir
Assistant Professor (E.OL)
Qualification: M.Phil
Area of Specialization: Poultry Production

DEPARTMENT OF DAIRY TECHNOLOGY

Introduction

This Department was established in 2002 when the College of Veterinary Sciences was upgraded to University of Veterinary and Animal Sciences, Lahore. Earlier it was named as dairy section. . Presently, the department has started B.S. (Hons.) Dairy Technology a four year graduate programme along with M.Phil. / Ph.D. The department is also offering various diploma courses and short courses.

At present, the department is shifted to A-Block, Ravi campus, Pattoki. Department of Dairy Technology is setting up new milk and milk products processing plant in A block, Ravi campus, pattoki. The dairy plant will be helpful for practical training of our dairy technology students, industry personals and other stack holders.

OBJECTIVES:

- ™ To impart advanced knowledge about the milk as a major discipline in the field of dairy technology.
- ™ To equip the students with recent advanced knowledge and particle skills for suitable planning, state of art processing / preservation and production of various dairy products.
- ™ To train the manpower for proper handling of milk processing / preservation and products manufacturing.
- ™ To train the manpower for production, evaluation, marketing of value added milk products.
- ™ To develop aptitude and demonstration skills for teaching, research and managerial skills in this field.

Laboratory Facilities

The department has a laboratory which provides the facilities for microbiological and chemical analysis of milk and dairy products.

Research Priorities

- New dairy products development and research.
- Improvement in quality of milk and dairy products.

Research projects

- “Development of a Process for the Production of Protein Isolate from Buffalo Milk”.
- Improvement of microbiological, chemical quality and safety of milk.

Studies of survival of probiotics in yoghurt, ice-cream and cheese.

FACULTY

Name: Dr. Muhammad Ayaz
Incharge Dairy Section
Qualification: B.V.Sc., B.Sc.(A.H) M.S. Ph. D (USA)
Area of Specialization: Dairy Technology

Name: Imtiaz Hussain
Assistant Professor (on study leave)
Qualification: B.Sc (Hons.) M.Sc (Hons.) Food Technology
Area of Specialization: Dairy Technology

Name: Dr. Saima Inayat
Lecturer
Qualification: DVM, M.Sc (Hons) Dairy Technology
Area of Specialization: Dairy Technology

Name: Mr. Muhammad Nadeem
Lecturer (on Contract)
Qualification: M. Sc (Hons)
Area of Specialization: Dairy Technology

MEAT TECHNOLOGY

Name: Mr. Naveed Akthar
Lecturer (on Ex. Pakistan leave)
Qualification: D.V.M
Area of Specialization: Meat Technology

Name: Mr. Saqib Manzoor
Lecturer (on contract)
Qualification: B.Sc (Chemical) Eng.
Area of Specialization: Thermodynamics

LEATHER AND FIBER TECHNOLOGY

Name: Mr. Amir Altaf
Assistant Professor (E.O.L)

Qualification:
Area of Specialization:.

Name: Mr. Yasir Zahoor
Lecturer (On Study leave)
Qualification: D.V.M, M. Phil
Area of Specialization: Biotechnology

Courses Offered

Course No.	Title	Credit Hrs
DTEC – 1001	Advanced Dairy Technology	3(2-1)
DTEC – 1002	Milk Processing Techniques	3(2-1)
DTEC – 1003	Fluid, Fermented & Concentrated Dairy Products Technology	4(3-1)
DTEC – 1004	Bioseparation Processes in Dairy Products Technology	3(2-1)
DTEC – 1005	Advanced Dairy Microbiology	3(2-1)
DTEC – 1006	Analytical Techniques in Milk & Milk Products	3(2-1)
DTEC – 1007	Dairy Rheology	3(2-1)
DTEC – 1008	Automation & Dairy Process Engineering	3(2-1)
DTEC – 1009	Dairy Plant Layout & Designaaw	3(3-0)
DTEC – 1010	Dairy Processing Equipment	3(2-1)
DTEC – 1011	Physico-Chemical Aspects of Milk Constituents	3(3-0)
DTEC – 1012	Packaging of Dairy Products	3(3-0)
DTEC – 1013	Chemistry of Milk Processing	3(2-1)
DTEC – 1014	Cleaning and Sanitation of Dairy Equipment	3(2-1)
DTEC – 1015	Total Quality Management Operations	3(3-0)
DTEC – 1016	Dairy Starter Cultures	3(2-1)
DTEC – 1017	Food and Industrial Microbiology	3(2-1)
DTEC – 1018	Food Process Engineering	3(3-0)
DTEC – 1019	Dairy Fermentation Technology	3(2-1)
DTEC – 1020	Special Problem	1(1-0)
DTEC – 1021	Seminar	1(1-0)

FACULTY OF BIO-SCIENCES

M.Phil/ M.Phil leading to Ph.D/ Ph.D Offering Departments

Department of Pharmacology & Toxicology

Department of Physiology

Department of Anatomy & Histology

DEPARTMENT OF PHARMACOLOGY & TOXICOLOGY

Introduction

This department was established in June 2002 along-with the establishment of University of Veterinary & Animal Sciences in continuation to the Pharmacology Section of the former college of Veterinary Sciences, Lahore. It is providing necessary information about Pharmacology and Toxicology of drugs to undergraduates and postgraduates. The courses at this level have been designed to develop understanding of Clinical Pharmacology of metabolism, endocrinology/ neuro-pharmacology, physiological chemistry, mechanism of their therapeutics uses. The research activities have been focused on problems of practical importance, like problems related to drug disposition and species variation of pharmacokinetic in indigenous animal species under local environmental conditions, macro and micro minerals estimation in animals, drug residues studies in food animals, drug resistance, pharmaceutical and chemical toxicity studies and effect of drugs on angiogenesis using different models. The studies are also carried out for screening and pharmacological evaluation of indigenous medicinal plants.

LABORATORY FACILITIES IN TERM OF EQUIPMENT/ TECHNIQUES:

We have well developed laboratories in the Department as Spectrophotometer, Laminar Flow hood, Autoclave, Fume Hood, Hot Air Oven, Centrifuge Machine, Egg Incubator, Computers, Stereo and Research Microscope, Double Distillation Apparatus, High Performance Liquid Chromatography, Digital Camera, Refrigerator, Deep Freezers, Distillation Apparatus, cable Networking, Animal House etc.

COURSES OFFERED

Course No.	Title	Credit Hrs.
PHRM 1001	General Pharmacology	4(3-2)
PHRM 1002	Advanced Pharmacology-I	4(3-2)
PHRM 1003	Advanced Pharmacology-II	3(2-2)
PHRM 1004	Pharmacokinetics	4(2-4)
PHRM 1005	Pharmaceutics	3(2-2)
PHRM 1006	Pharmacology of Central Nervous System	4(3-2)
PHRM 1007	Pharmacology of Autonomic Nervous System	4(3-2)
PHRM 1008	Renal and Reproductive Pharmacology	4(3-2)
PHRM 1009	Pharmacotherapy	4(3-2)
PHRM 1010	Chemotherapy	4(3-2)
PHRM 1011	General Toxicology	4(3-2)
PHRM 1012	Systemic Toxicology	4(3-2)
PHRM 1013	Chemical Pharmacology	3(2-2)
PHRM 1014	Pharmacology of Autacoids	3(2-2)
PHRM 1015	Clinical Drug Trials	4(3-2)
PHRM 1016	Advanced Readings in Pharmacology & Toxicology	1(1-0)
PHRM 1017	Problems in Clinical Pharmacology	2(0-4)
PHRM 1018	Pharmacology of Indigenous Medicinal Plants	4(3-2)
PHRM 1019	Special Problem	1(0-2)
PHRM 1020	Seminar	1(1-0)
PHRM 1021	Toxicology of Poisonous Plants	3(2-2)
PHRM 1022	Environmental Toxicology	4(3-2)
PHRM 1023	Mycotoxins and Zootoxins	3(2-2)
PHRM 1024	Aquatic Toxicology	4(3-2)

FACULTY

Name:	Prof. Dr. Muhammad Ashraf
Qualification:	Professor/ Chairman (Tenure Track System)
Area of Specialization:	D.V.M., M.Sc. (Hons.), Ph.D. (USA) Pharmacokinetics drug Clinical Trials, Animal Toxicity Studies
Name:	Dr. Muhammad Ovais Omer
Qualification:	Assistant Professor
Area of Specialization:	D.V.M., M.Sc. (Hons.) Pharmacology, Toxicology, Herbal Medicines, Angiogenesis
Name:	Dr. Sualeha Riffat
Qualification:	Assistant Professor (Tenure Track System)
Area of Specialization:	M.Sc. (Hons.), Ph.D Pharmacokinetic, Bio-Equivalence
Name:	Dr. Aqeel Javeed
Qualification:	Assistant Professor (Tenure Track System)
Area of Specialization:	DVM, M.Sc. (Hons), Ph.D (China) Immuno Pharmacology
Name:	Mr. Muhammad Adil Rasheed
Qualification:	Assistant Professor
Area of Specialization:	D.V.M., M. Phil Angiogenesis, Herbal Medicines
Name:	Mr. Shehryar Afzal
Qualification:	Lecturer
Area of Specialization:	D.V.M., M.Sc. (Hons.) Pharmacokinetics and Drug dosage adjustment.

DEPARTMENT OF PHYSIOLOGY

Introduction

The Department of Physiology has multiple missions in the area of teaching and research with an emphasis on Veterinary Physiology and side by side on Human Physiology.

Teaching responsibilities of the Department include

- 1) Professional instruction leading to the Doctor of Veterinary Medicine Degree,
- 2) Undergraduate instruction leading to the Doctor of Pharmacy,
- 3) Graduate instruction leading to the Master of Philosophy and Doctor of Philosophy degrees in the discipline of Physiology.

Building of the department is situated in the Faculty of Biosciences. The department has two laboratories; one is specified for undergraduate experimentation and other for the postgraduate research. The undergraduate laboratory facilities are being shared with the Pharmaceutical sciences and Biochemistry Departments. The postgraduate laboratory is equipped with sophisticated equipments which are employed for physiology indices, serum biochemical and gastrointestinal studies.

Research Priorities

- 1) Evaluation and optimization of different prebiotics and probiotics
- 2) Evaluation and optimization of different antioxidants under various stressors.
- 3) Determination of different physiological indices.

Laboratory Facilities

Atomic Absorption Spectrophotometer
Clinical Chemistry Analyzer
Column Chromatograph
TLC

Double Distilled Water Apparatus
Spectrophotometer

pH Meter
Safety Cabinets

COURSE OFFERED

Course No.	Title	Credit Hrs.
PHYS 1001	General Principles of Physiology	4(3-2)
PHYS 1001	Physiology of Respiration and Cardiovascular System	4(3-2)
PHYS 1003	Physiology of nerve and Muscle	3(2-2)
PHYS 1004	Physiology of Digestion and Metabolism	4(2-4)
PHYS 1005	Endocrinology	3(2-2)
PHYS 1006	Physiology and Biochemistry of Rumen	4(3-2)
PHYS 1007	Physiology of Steroid Hormones	4(3-2)
PHYS 1008	Cell Physiology	4(0-8)
PHYS 1009	Physiological Techniques	4(3-2)
PHYS 1010	Enzymology	4(3-2)
PHYS 1011	Physiology of Kidney and Sweat Gland	4(3-2)
PHYS 1012	Comparative Hematology	3(2-2)
PHYS 1013	Physiology of Lactation	3(2-2)
PHYS 1014	Advanced Avian Physiology	4(3-2)
PHYS 1015	Clinical Physiology	4(1-6)
PHYS 1016	Comparative Endocrinology	4(4-0)
PHYS 1017	Clinical Physiology	4(3-2)
PHYS 1018	Molecular Physiology	4(2-4)
PHYS 1019	Special Problem	1(0-2)
PHYS 1020	Seminar	1(1-0)
PHYS 1021	Environmental Physiology	4(3-2)
PHYS 1022	Biophysics	4(4-0)
PHYS 1023	Camel Physiology	4(4-0)
PHYS 1024	Fish Endocrinology	4(3-2)
PHYS 1025	Exercise Physiology	4(3-2)

Faculty

Name:	Prof. Dr. Ijaz Ahmad Professor/ Dean
Qualification:	Ph.D (USA) & Post Doc. (Canada)
Area of Specialization:	Gamete Physiology
Name:	Dr. Habib ur Rehman Chairman/ Associate Professor
Qualification:	Ph.D (Austria)
Area of Specialization:	Gut Physiology
Name:	Mr. Muhammad Quaid Zaman Lecturer (E.O.L)
Qualification:	D.V.M M.Sc. (Hons)
Area of Specialization:	Diabetology
Name:	Ms. Shahista Abbas Lecturer (on contact)
Qualification:	D.V.M, M.Phil
Area of Specialization:	Physiology
Name:	Mr. Muhammad Shahbaz Yousaf Lecturer
Qualification:	D.V.M, M.Sc (Hons)
Area of Specialization:	Stress Physiology
Name:	Mr. Aman Ullah Lecturer (on study leave)
Qualification:	
Area of Specialization:	Physiology

DEPARTMENT OF ANATOMY & HISTOLOGY

Introduction

The building of the department is situated in next to the Pet Center. The building is comparatively old but well maintained and has been renovated recently. Alongwith the offices of the teaching staff, it consists of two laboratories, one is being used for the teaching of Histology and second for the teaching Gross Anatomy to the undergraduate students. In addition to these labs, the department also maintains a well equipped workshop for the construction of skeletons of different animals. This department has provided articulated skeletons of different animals to all newly established universities all over the Pakistan. Recently, this department has been approved for awarding M.Phil and Ph.D degrees.

COURSES OFFERED

Course No.	Title of Course	Credit Hours
ANAT 1001	Comparative Anatomy Of Endocrine Glands	3(2-2)
ANAT 1002	Surgical Anatomy	3(1-4)
ANAT 1003	Neuroanatomy	4(2-4)
ANAT 1004	Comparative Anatomy of Reproductive System	3(2-2)
ANAT 1005	Systemic Anatomy and Histology of the Camel	4(3-2)
ANAT 1006	Advanced Histology –I	3(2-2)
ANAT 1007	Advanced Histology –II	4(2-4)
ANAT 1008	Histological And Histochemical Techniques	3(0-6)
ANAT 1009	Mammalian Embryology	3(2-2)
ANAT 1010	Experimental Embryology	3(0-6)
ANAT 1011	Techniques In Electron Microscopy	3(1-4)
ANAT 1012	Biological Ultrastructure	3(2-2)
ANAT 1019	Special Problem	1(0-2)
ANAT 1020	Seminar	1(1-0)

FACULTY

Name:	Mr. Saleem Qaisar
Qualification:	Assistant Professor
Area of Specialization	DVM, M.Sc(Hons)
	Gross Anatomy
Name:	Mr. Syed Hassan Rizvi
Qualification:	Assistant Professor (On Ex-Pakistan Leave)
Area of Specialization	DVM, M.Sc (Hons)
	Histology
Name:	Dr. Hafsa Zaneb
Qualification:	Assistant Professor (Tenure Track System)
Area of Specialization	DVM, M.Sc (Hons), Ph.D, (Austria)
	Functional Anatomy & Bio-Mechanics
Name:	Ms. Saima Masood
Qualification:	Lecturer (On EOL)
Area of Specialization	DVM, M.Sc (Hons)
	Histology
Name:	Ms. Saima Ashraf
Qualification:	Lecturer
Area of Specialization	DVM, M.Phil scholar
	Histology & Histo-Chemistry

FACULTY OF FISHERIES AND WILDLIFE

M.Phil / M. Phil leading to Ph.D / Ph.D offering departments

Department of Fisheries and Aquaculture

Department of Wildlife & Ecology

DEPARTMENT OF FISHERIES & AQUACULTURE

MISSION STATEMENT:

To provide excellence in higher education, , research and development and extension services in the field of fisheries and aquaculture thus contributing to economic and social development of our country. We are aware that strong research provides basis for booming aquaculture. Hence, we are actively pursuing to become.

- A unique department with emerging global ideas and vision,
A seat of learning and research in fisheries and aquaculture, ecology, fish genetics and toxicology,

Facilities Available:

Under the development project 'establishment of Research and Training Facilities for Fisheries and Aquaculture at New Campus Bhuniky, Pattoki' funded by HEC, (32.652 Million) 2005-2007 a new faculty has been developed. The faculty has initiated the post graduate teaching at the newly established fisheries research and training centre, which has the following components: research labs (2), staff rooms (3), meeting room (1), hatchery building (1), feed room (1), diagnostics laboratory (1), fish ponds (20), (1), and residences (3).

Research Priorities:

- Development and improvement of saline water aquaculture
- Integrated fish farming, fisheries management in lakes and reservoirs
- Development and production of synthetic chemical analogs of reproductive hormones for induced breeding.
- Fish genetics and fish ecology

Linkages

Department of fisheries and Aquaculture has already established links with Aquaculture Wales (AqWa) university of Wales, Swansea, UK under HEC-British Council/ higher Education commission Joint higher Education Link Program (2004-2007).

COURSES OFFERED

Course no.	Title	Credit Hrs.
FISH 1001	Advanced Fish Biology	4(3-2)
FISH 1002	Advances In Aquatic Ecology & management	4(3-2)
FISH 1003	Principles of Aquaculture	4(3-2)
FISH 1004	Advanced Fish farm and Hatchery management	4(3-2)
FISH 1005	Advanced Aquatic Pathobiology	4(3-2)
FISH 1006	Fish Diversity and Conservation	3(2-2)
FISH 1007	Advanced Aquaculture Nutrition.	4(3-2)
FISH 1008	New Concepts of Aquatic Eco-toxicology	4(3-2)
FISH 1009	Genome Technology In Aquaculture	3(2-2)
FISH 1010	Ornamental Fishes and Quality control in Aquaria	3(2-2)
FISH 1011	Fisheries Oceanography	4(3-2)
FISH 1012	Advances In post harvest Technology	3(2-2)
FISH 1013	Modern Fish Processing and Quality Standards	3(2-2)
FISH 1014	New Trends In Aquaculture Marketing and Economics	3(2-0)
FISH 1015	New trends in Fisheries & Aquaculture	3(3-0)
FISH 1016	Seminar	1(1-0)
FISH 1017	Special Problem	1(-2)
FISH 1018	Research Thesis	10 CREDITS

FACULTY

Name: Prof. Dr. Noureen Aziz Qureshi
Dean/ Chairperson
Qualification: M. Sc, M. Phil, Ph. D, Post Doc.
Area of Specialization: Biological oceanography, Fisheries Biology

Name: Dr. Muhammad Ashraf
Associate Professor (on contract)
Qualification: Ph. D
Area of Specialization: Fisheries and Aquaculture

Name: Mr. Muhammad Yamin Janjua
Assistant Professor (on study leave)
Qualification: M. Sc, M. Phil
Area of Specialization: Lakes & Reservoirs Ecology, Fisheries Ecology

Name: Mr. Noor Khan
Assistant Professor (on study leave)
Qualification: M. Sc, M. Phil
Area of Specialization: Fresh Water Fisheries Management, Fisheries Ecology

Name: Mr. Muhammad Hafiz ur Rehman
Assistant Professor
Qualification: M. Sc, M. Phil
Area of Specialization: Saline Water Fish Nutrition

Name: Mr. Fayyaz Rasool
Lecturer
Qualification: M. Sc, M. Phil
Area of Specialization: Fresh Water Fisheries Management, Fish Ecology

Department of Wildlife & Ecology

University of Veterinary & Animal Sciences, while realizing the importance to wildlife heritage of Pakistan took bold initiative to strengthen institutional framework for scientific study of wildlife and ecology. In a country where literacy rates are appallingly low and the education system often flexible and unstructured, incorporating wildlife education into they system presents a great challenge. UVAS Department of Wildlife & Ecology is contributing towards conserving country's unique natural diversity ion a manner that is complementary to the future needs. The research and development activities of this department are focused on protection preservation, perpetuation and judicious control of a rare species and their environment.

International linkages

Department of wildlife and ecology established a link with centre for environment and society, school of biological sciences, University Essex, UK in second round of Higher Education Commission-British council joint higher education link program (HEC-BC-JHELP). It was one of the 35 successful links for which more than 200 applications were received from higher education institutions of Pakistan. Establishment of DelPhE linkage is another achievement of the Department of Wildlife and Ecology. The second reound of DelPhE funding attracted close to 300 applications from around the world and of the 13 successful applications approved from Asia one was from the Department of Wildlife and Ecology, UVAS, Lahore. The Department is also developing MoU with Bat Ecology and Bioacoustic laboratory, University of Bristol, UK/

Research & Training

Mission of the Department of Wildlife & Ecology is to conserve the country's major representative ecosystems, unique natural heritage, and provide protection to the valuable and wildlife institutions, Government and NGO's.

Research Projects

1. Developing sustainable Livelihoods for Communities in a Ramsar Site: The Makran Coastal Wetlands Complex, Pakistan (Approved)
2. HEC-BC Joint Higher Education Link Programme between Department of Wildlife & Ecology, UVAS, and Center of Environment and society, School, school of Biological sciences, University of Essex, UK. (Approved)

Biodiversity and conservation biology of bats in some selected protected areas of Pakistan (Approved)

FACULTY

Name: Dr. Muhammad Mahmood-ul-Hassan
Associate Professor
Qualification: M.Sc., M. Phil, Ph.D
Area of Specialization: Ecology, Biology and Conservation of reports, small Mammals and control of Vertebrate Pests

Name: Dr. Zulfiqar Ali
Assistant Professor
Qualification: Ph.D
Area of Specialization: Wildlife Ecology and Conservation with special emphasis on Wetlands Ecology and Avian Research

Name: Mr. Arshad Javid
Lecturer
Qualification: M. Sc., M. Phil,
Area of Specialization: Aquatic Toxicology, Freshwater Biology

Name: Dr. Muhammad Ali Nawaz
Lecturer
Qualification: Ph. D

Course Offered

Course No.	Title	Credit hrs.
WECO 1001	Wildlife of Pakistan	3(3-0)
WECO 1002	Biological Diversity	3(2-2)
WECO 1003	Advanced Mammalogy	3(3-0)
WECO 1004	Laboratory and Field Techniques in Mammology	2(0-4)
WECO 1005	Advanced Ornithology	3(3-0)
WECO 1006	Laboratory and Field Techniques in Ornithology	2(0-4)
WECO 1007	Advanced Herpatology	2(2-0)
WECO 1008	Insect morphology, Physiology and Ecology	3(2-2)
WECO 1009	Insect Classification and Pest Management	3(2-2)
WECO 1010	Conservation Biology – I	4(2-4)
WECO 1011	Conservation Biology – II	3(3-0)
WECO 1012	Fundamentals of Environmental Science	4(4-0)
WECO 1013	Environmental impact Assessment	3(3-0)
WECO 1014	Wildlife Management and Conservation	2(1-2)
WECO 1015	Modern concepts in habitat Ecology	3(3-0)
WECO 1016	Population Ecology	3(3-0)
WECO 1017	Community Ecology	2(2-0)
WECO 1018	Plant Community Ecology	4(4-0)
WECO 1019	Special Problem	1(1-0)
WECO 1020	Seminar	1(1-0)
WECO 1021	Ecosystem and Evolutionary Ecology	3(3-0)
WECO 1022	Animal Behavior	2(2-0)
WECO 1023	Behavioral Ecology	3(3-0)
WECO 1024	Biogeography	2(2-0)
WECO 1025	Geoinformatics for Resource mapping and Analysis	4(2-2)
WECO 1026	Introduction to Forestry and natural resource conservation	3(3-0)
WECO 1027	Eco-tourism planning and management	3(3-0)
WECO 1028	Range Management	3(2-2)
WECO 1029	Park Management	2(2-0)
	Thesis research	

FACULTY OF LIFE SCIENCES BUSINESS MANAGEMENT

Introduction

Faculty of Life Sciences Business Management is one of the emerging Faculty of University of Veterinary and Animal Sciences Lahore. This Faculty has a vision to promote business Management education in Life Science fields. This Faculty has been offering various undergraduate and postgraduate courses. The MBA (Life Sciences) degree offered by this faculty is one of the Landmark program first of it's kind in Pakistan. In addition to this, for capacity building of Livestock sector this faculty has organized leadership Development Program. Similarly training programs for Human Resource Development and arranging conferences and seminars is a routine activity of this faculty. Today's business environment demands managerial skills and business orientation of professionals working in Life Sciences fields. Keeping in view this aspect, Faculty of Life-Sciences Business Management has been entrusted to produce these required professionals. In future this faculty has planned to offer postgraduate programs in statistics in collaboration with GCU and KEMU, Lahore. The IT department of FLSBM is training the students of various degree programs and faculty members in computer related skills.

Prof. Dr. Muhammad Aleem Dean (FLSBM) Ph.D., M.Sc,(Hons.), DVM

Dr. Maqsood Ahmad Assistant Professor

M.Sc (Hons.) Agriculture Economics

Dr. Rana Muhammad Ayyub Assistant Professor/ Program Coordinator MBA (Life-Sciences)DVM, M.Sc. (Hons.) MBA (Marketing) PGD (IBA)

Name:	Dr. Aman Ullah Lecturer
Qualification:	DVM, M.Sc. (Hons.), MBA(HRM)
Name:	Farhan Masud Assistant Professor
Qualification:	M.Sc. (Computer Science)
Name:	Liaqat Ahmad Assistant Professor
Qualification:	M.Sc., M.Phil.(Statistics)
Name:	Tariq Mehmood Bajwa Lecturer
Qualification:	M.Sc. (Statistics) (on study leave)
Name:	Bilal Ahmad Lecturer
Qualification:	M.Sc., M.Phil.(Statistics)
Name:	Muhammad Khawar Bashir Lecturer
Qualification:	M.Sc. (Computer Science)

COURSES OFFERED

Post Graduate Courses Offered for MBA

Course	Title	
LBM 1001	Principles of Management	
LBM 1002	Financial Accounting	
LBM 1003	Business Mathematics and Statistics	
LBM 1004	Economic Analysis	
LBM 1005	Cost & Management Accounting	
LBM 1006	Principles of Marketing	
LBM 1007	Human Resources Management	
LBM 1008	Business Communication	
LBM 1009	Financial Management	
<i>LBM - 7070</i>	<i>Management Information system</i>	
<i>LBM - 7077</i>	<i>Organizational Behavior</i>	
LBM-1012	Marketing Strategy and Policy	
LBM-1013	Production and Operation Management	
LBM -1014	Business Research Method	
LBM-1015	Project Planning and Management	
LBM-1016	Entrepreneurship	
LBM -1017	Strategic Management	
LBM-1018	Management Research Project (MRP)	
LBM-1019	Seminar	

COURSES OFFERED

Course No.	Title
LBM -1020	Health Policy and Planning
LBM -1021	Hospital Management
LBM -1022	Primary Health Care issues and Management
LBM -1023	Health Information System
LBM -1024	Health Care Marketing
LBM -1025	Financial Management in Health care organizations
LBM -1026	Research and Evaluation in Health Care organization
LBM -1027	Overview of Livestock Businesses
LBM -1028	Dairy Business Management
LBM -1029	Pharmaceutical Business Management
LBM -1030	Livestock Products Export Marketing
LBM -1031	Livestock Feed Business Management
LBM -1032	Poultry and Hatchery Business
LBM-1033	WTO Impact on Agribusiness
LBM-1034	Agriculture Policies and Trade
LBM-1035	Agricultural Marketing
LBM-1036	Agri- Farm Management
LBM-1037	Agriculture Environment & Rural Development
LBM-1038	Agriculture Finance
LBM -1039	Marketing Research
LBM -1040	Sales Management
LBM -1041	Export Marketing
LBM -1042	International Marketing
LBM -1043	Brand Management
LBM -1044	Services Marketing
LBM -1045	Retail Marketing
LBM -1046	Advertising Management

COURSES OFFERED

Course No.	Title
LBM -1047	Training and Development
LBM -1048	Strategic HRM
LBM -1049	Performance Management
LBM -1050	Human Resources Development
LBM -1051	Conflict and negotiation Management
LBM-1052	'Compensation & Benefit Management
LBM -1053	Recruitment & Selection
LBM -1054	Corporate Finance
LBM -1055	Business Taxation Management
LBM -1056	International Financial Management
LBM -1057	Investment and Portfolio Management
LBM -1058	Financial Analysis

* The offer of course from specialization tracks depends upon current market needs and availability of Faculty.

Department Of Statistics & Computer Science

Course No.	Title	Degree
STAT-1001	Experimental Statistics	(M. Phil.)
STAT~ 1002	Experimental Design	(Ph.D.)

INSTITUTE OF BIOCHEMISTRY AND BIOTECHNOLOGY

Institute of Biochemistry and Biotechnology (IBBT) was instituted in September 2009 after the up gradation and union of department of Molecular Biology and Biotechnology and department of Biochemistry. Currently the undergraduate degree B.S. (Hons) Biotechnology and Informatics and M. Phil (Molecular Biology & Biotechnology and Biochemistry) are going on with strength of more than 100 and 150 students respectively.

This success story will be incomplete if it will not be mentioned and recognized the contributions of highly qualified and dedicated team of scientists of our institute, working flat out 24 hours a day.

Disciplines of IBBT

f Molecular Biology and Biotechnology

f Biochemistry

Molecular Biology is a branch of biology that deals with the formation, structure and function of macromolecules essential to life such as nucleic acids and proteins, including their role in cell replication and the transmission of genetic information. On the other hand "Biotechnology" is the deliberate manipulation of DNA molecules to produce commercial products from living organisms .Establishment of institution (IBBT) is a land mark that will go a long way to enhance the quality of Research, Academics and technology development in the field of molecular biology and genetics of livestock, human and microbes to the benefit of Pakistani nation. Through high throughput technologies such as Microarray DNA Chip Technology, whole Genome Analyzer and DNA equencing facilities, faster and rapid gains in identification and selection of superior individuals in respect of disease resistance, better performance and disease control can be accomplished. To explore the molecular basis for life processes through chemical and physical studies on the structure and behavior of complex molecules found in biological materials, biochemistry has emerged as a highly creative and successful discipline. Through characterizing the structure, function, assembly, and dynamic changes of macromolecules, biochemists seek to answer fundamental questions about living processes and to bring significant improvements in the quality of

life. Diverse advances have converged to allow the development of recombinant DNA technology for better understanding of metabolic processes and expression of genetic information that assure dynamic advancement in the field of biochemistry. In addition the institute will greatly contribute to improve UVAS ranking within Pakistan and worldwide.

At present large number of students are undertaking their M. Phil and Ph.D. studies in the field of Molecular Biology & Biotechnology and Biochemistry. The Institute is also acquiring latest technologies and equipment for world class research in the field of Molecular Biology, Genomics, Proteomics and Applied Biotechnology to bring about a revolution in livestock as well as medical fields.

IBBT LABS

Molecular Biology and Genomics Lab, Bioinformatics Lab, Diagnostics Lab, Hi-Tech, Microarray Lab

FACILITIES AVAILABLE AT IBBT

Different labs of IBBT are equipped with following instruments.

- Illumina BeadXpress System (Microarray System)
- ABI prism 3130xl Genetic Analyzer
- ABI 7700 Real Time PCR
- Gel Documentation System
- Thermocycler
- Gel Apparatus
- PAGE Apparatus
- Water Bath Shaker
- Gradient Centrifuge Machine
- Micro centrifuge
- Microfuge
- Cell Culture Incubator
- Bio Safety Cabinet
- Micropipettes (5 Sets)
- Autoclave

LARGEST DNA BANK:

IBBT is proud to have the largest DNA bank of the country containing the genome of pure breeds of cattle, buffalo, sheep, goat, camel, horses and dogs from all over the country. We have also the genome of superior/champion animals. Beside this we have comprehensive number of DNA samples of human suffering from different genetic disorders. The strengthening of DNA Bank of IBBT is continuously going on by frequent sampling country wide.

RESEARCH PRIORITIES

Molecular Characterization of infectious agents and Different Livestock Species and Breeds

Marker identification for genetic/neurological disorders

Biopharmaceutics and recombinant vaccine production

Microarray study of genetic disorders in human and quantitative traits of livestock for identification of superior animal

Production of industrial and therapeutic proteins

COURSES OFFERED FOR M.PHIL/PH.D IN MOLECULAR BIOLOGY AND BIOTECHNOLOGY

COURSE NO.	TITLE OF COURSE	Credit Hours
MBBT 1001	Principles of Biotechnology	4(3-1)
MBBT 1002	Molecular Cell Biology	4(3-1)
MBBT 1003	Molecular Biology	4(3-1)
MBBT 1004	Bioinformatics	2(2-0)
MBBT 1005	Cell Chemistry	4(3-1)
MBBT 1006	Gene Manipulation and Genetic Engineering	4(3-1)
MBBT 1007	Cell & Tissue Culture	3(2-1)
MBBT 1008	Basic Molecular Biology Research Techniques	3(2-1)
MBBT 1009	Advanced Molecular Biology Research Techniques	3(2-1)
MBBT 1010	Essentials of Molecular Genetics	4(3-1)
MBBT 1011	Bioethics	2(2-0)
MBBT 1012	Fermentation Technology	3(2-1)
MBBT 1013	Immunogenetics	3(3-0)
MBBT 1014	Molecular Medicine and Biopharmaceuticals	4(3-1)
MBBT 1015	Molecular Drug Development	4(3-1)
MBBT 1016	Advanced Bio-Nanotechnology	4(3-1)
MBBT 1019	Special Problem	1(0-2)
MBBT 1020	Seminar	1(1-0)

COURSES OFFERED FOR M.PHIL/PH.D IN BIO-CHEMISTRY

Course Code	Title of the course	Credit Hours
BIOC-1001	Principles of Biochemistry (M. Phil Deficiency)	3(3-0)
BIOC-1002	Advanced Biochemical Techniques (Ph. D Deficiency)	3(0-3)
BIOC-1003	Enzyme Biotechnology	4(3-1)
BIOC-1004	Environmental Biochemistry	3(3-0)
BIOC-1005	Skills and Research Methodology	1(1-0)
BIOC-1006	Biological Oxidation Reduction	2(2-0)
BIOC-1007	Biochemistry of Vitamins And Minerals	4(3-1)
BIOC-1008	Principles of biochemical engineering	2(2-0)
BIOC-1009	Biochemistry of chemical regulators	2(2-0)
BIOC-1010	Recombinant DNA Technology and Gene Manipulation	3(2-1)
BIOC-1011	Blood and Immunochemistry	2(2-0)
BIOC-1012	Industrial Biotechnology	4(1-3)
BIOC-1013	Bioinformatics	2(2-0)
BIOC-1014	Molecular Cell Biology	3(3-0)
BIOC-1015	Medical biochemistry	3(3-0)
BIOC-1016	Current topics in biochemistry and molecular biology	1(1-0)
BIOC-1017	Genes, genomes and evolution	3(3-0)
BIOC-1018	Biochemistry of cancer	2(2-0)
BIOC-1019	Special Problem	1(0-2)
BIOC-1020	Seminar	1(1-0)
BIOC-1021	Biochemistry of Carbohydrates	3(3-0)
BIOC-1022	Biochemistry of Proteins	3(3-0)
BIOC-1023	Biochemistry of Lipids	3(3-0)
BIOC-1024	Biochemical Techniques	4(0-4)

Faculty

Name: Prof. Dr. Masroor Ellahi Babar
Professor/ Director
Qualification: Ph.D & Post Doc (USA) & (Canada).
Area of Specialization: Animal Breeding/ Animal Genomics/ Functional Genomics

Name: Dr. Abu Saeed Hashmi
Eminent Educationist
Qualification: Ph.D
Area of Specialization: Bio-Chemistry & Fermentation Biotechnology

Name: Dr. Atif Hanif
Associate Professor
Qualification: Ph.D (Greece)
Area of Specialization: Molecular Biology & Biotechnology

Name: Mr. Shahid Abbas
Assistant Professor
Qualification: M.Sc
Area of Specialization: Bio-Chemistry

Name: Dr. Ali Raza Awan
Assistant Professor (Tenure Track System)
Qualification: Ph.D.
Area of Specialization: Molecular Biology

Name: Dr. Muhammad Waseem
Assistant Professor
Qualification: Ph.D (Australia)
Area of Specialization: Molecular Biology in Cancer/ Molecular Cloning

Name: Mr. Asif Nadeem
Lecturer
Qualification: M. Phil
Area of Specialization: Molecular Biology

Name: Mr. Tanver Hussain
Lecturer (on contract)
Qualification: M. Phil
Area of Specialization: Animal Breeding & Genetics

Name:	Ms. Rahat Naseer Lecturer (on E.O.L)
Qualification:	M. Phil
Area of Specialization:	Bio-Chemistry
Name:	Ms. Saeeda Kalsoom Lecturer (on contract)
Qualification:	M. Phil
Area of Specialization:	Molecular Biology
Name:	Ms. Sehrish Firyal Lecturer (on contract)
Qualification:	M.Sc (Hons)
Area of Specialization:	Agr. Biotechnology
Name:	Mr. Muhammad Asif Lecturer
Qualification:	M. Phil
Area of Specialization:	Bio-Technology
Name:	Mr. Zahid Mushtaq Lecturer
Qualification:	M. Phil
Area of Specialization:	Bio-Chemistry
Name:	Ms. Faiza Masood Lecturer (on contract)
Qualification:	M. Sc
Area of Specialization:	Bio- Technology
Name:	Ms. Shagufta Saeed Lecturer (on contract)
Qualification:	M. Phil
Area of Specialization:	Bio-Chemistry
Name:	Ms. Asma Waris Lecturer (on contract)
Qualification:	M. Phil
Area of Specialization:	Bio-Chemistry

Institute of Pharmaceutical Sciences (IPS)

Introduction

The Institute of Pharmaceutical Sciences at UVAS is an effort to materialize the vision of provision of quality Pharmacy education in Pakistan. The education system at IPS is not only sensitive to the local needs of Pakistan but lives up to the international standards so that the students passing out from IPS contribute to the modern developments in the profession through research, practice and education.

Institute of Pharmaceutical Sciences is a new addition to the University of Veterinary and Animal Sciences. To meet the human resource need of the country in the areas of Clinical Pharmacy, Community Pharmacy, Pharmaceutical Technology, Industrial Pharmacy, Pharmaceutical Microbiology and Molecular Biology a comprehensive course is designed for award of M.Phil degree in Pharmaceutics. This course covers all the topics recommended by the Pharmacy Council of Pakistan and Higher Education Commission in addition to many new courses which will be offered from time to time. The faculty of Institute of Pharmaceutical Sciences includes personnel with diverse practical experience including industrial pharmacy, pharmacy practice and regulatory affairs. Pharmaceutical industry, hospital and retail pharmacies constitute the major portion of the application of pharmaceutical sciences in the country and the personnel developed in the diverse area of pharmaceutics shall cover the national needs related to all these areas.

The main research interests of the Institute include Biopharmaceutics and Bioequivalence studies, Pharmacy practice and application of molecular biology and biotechnology in Pharmacy thereby equipping the postgraduates with skills to analyze the health care needs of the country developing their research skills to benefit the common man as well as the pharmaceutical and public sectors of Pakistan

COURSES OFFERED

COURSE NO.	TITLE OF COURSE	CREDIT HOURS
PHCU1001	Pharmacy Practice/ Clinical Pharmacy	4(3-2)
PHCU1002	Advanced Pharmaceutics	4(2-4)
PHCU1003	Applied Biopharmaceutics	4(1-6)
PHCU1004	Community Pharmacy	4(3-2)
PHCU1005	Pharmaceutical Microbiology & Biotechnology /Molecular Biology	3(2-2)
PHCU1006	Formulation and Product Development	3(1-4)
PHCU1007	Pharmaceutical Management & Marketing	1(1-0)
PHCU1008	Bioequivalence Studies-Design and Conduct	4(2-4)
PHCU1009	Good Clinical Practices	2(2-0)
PHCU1010	Pharmacogenomics	3(2-2)
PHCU1011	Pharmacoeconomics	1(1-0)
PHCU1012	Pharmacovigilance	1(1-0)
PHCU1013	Pharmacoepidemiology	3(2-2)
PHCU1014	Extemporaneous Prescription Compounding	2(1-2)
PHCU1015	Veterinary Pharmacy	2(1-2)
PHCU1016	Total Parenteral Nutrition	3(2-2)
PHCU1017	Cosmetology	2(1-2)
PHCU1018	Biopharmaceutics	3(2-2)
PHCU1019	Special Problem	1(0-2)
PHCU1020	Seminar	1(1-0)
PHCU1021	Software Applications in Pharmacy	2(0-4)
PHCU1022	Nanotechnology	2(1-2)
PHCU1023	Enteral Nutrition	3(2-2)
PHCU1024	RESEARCH AND THESIS	10

FACULTY

Name: Dr. Farzana Ch.
Director
Qualification: B. Pharm, M. Phil, Ph. D
Area of Specialization: Pharmaceutical Chemistry & Indigenous Medicinal Plants

Name: Ms. Huma Rashid
Assistant Professor
Qualification: B. Pharm, M. Phil,
Area of Specialization: Pharmaceutics

Name: Mrs. Shaista Qamar
Assistant Professor
Qualification: B. Pharm, M. Phil,
Area of Specialization: Pharmaceutics

Name: Dr. Mateen Abbas
Lecturer
Qualification: Ph. D.
Area of Specialization: Pharmaceutical Chemistry

Name: Mr. Muhammad Usman
Lecturer
Qualification: B. Pharm, M. Phil,
Area of Specialization: Bio-Pharmaceutics.

Name: Malik Allah Bukhsh Awan
Lecturer
Qualification: B. Pharm, M. Pharm
Area of Specialization: Bio-Pharmaceutics

Name: Mr Muneeb Anjum
Lecturer
Qualification: B. Pharm, M. Sc
Area of Specialization: Bio-Pharmaceutics

Name: Dr. Muhammad Tahir Javad Khan
Visiting Professor
Qualification: Ph. D.
Area of Specialization: Pharmaceutical Chemistry & Biotechnology

Name: Mr. Shoaib Hakeem
Visiting Professor
Qualification: B. Pharm, M. Pharm,
Area of Specialization: Stability, drug storage and validations

Name: Mr. Muhammad Ibrahim
Visiting Professor
Qualification: M.B.B.S, MBA
Area of Specialization: Diabetics Mellitis

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DIRECTORATE OF QUALITY OPERATION LAB

AIMS AND OBJECTIVES

Quality of food of animal origin has been a main concern and on account of poor knowledge, lack of sophisticated equipments and techniques, non-availability of suitable labs, no efforts to improve the quality of the food in Pakistan had been made. It is a bare fact that animals and plants are constantly exposed to a variety of potentially harmful chemicals / bio-chemicals and pathogens in the polluted environment. There is indiscriminate spray of pesticides on cotton and rice crops. Residues of these pesticides are transferred to animal or poultry through consumption of feed containing chemically contaminated cotton seed cake and the rice. Similarly, there is contamination of disinfectants, antibiotics, mycotoxins etc., in feed of poultry and dairy animals that are excreted in milk, meat or eggs and subsequently enters in our food chain. These chemical or biological toxins or pathogens are posing serious human health hazards. Some effects such as death, acute respiratory illness, skin rashes, toxic hepatitis are apparently visible while some time hidden serious effects such as immuno-suppression, reproductive/fetal abnormalities, teratogenic, mutagenic/ carcinogenic effects etc. Reduce growth are not uncommon.

This laboratory will test the quality of livestock and food of animal origin not only to meet the requirement of international trade but also help to provide quality food for our own nationals.

Activities in Quality Operation Laboratory:

Activities are divided in three sections

MICROBIOLOGY SECTION

PATHOLOGY SECTION

TOXICOLOGY SECTION

MICROBIOLOGY SECTION

ELISA readers and Automatic ELISA washers, Electrophoresis apparatus, Gel documentation system, Blotting Apparatus, Particle Counter, Real time PCR thermal cycler, Fermentor, Ultracentrifugation machine. Automatic dispensing system, Inverted microscope with digital camera, Sonication system, Animal cell culture facilities.

ACTIVITIES

- z Hygienic testing of food of animal or plant origin
- z Isolation and characterization of contaminant microbes
- z Genotyping of FMD type O and Asia I Viruses
- z Development Multiplex PCR for avian Influenza Virus
- z Virus detection and isolation
- z Total bacterial count
- z Coliform count
- z Staph count
- z Pseudomonas counts
- z *Coliform* counts
- z *Salmonella* counts
- z Yeast and mould counts
- z Workshops on various instruments and techniques
- z Advisory services to the public and private sector
- z Postgraduate research in different areas
- z Vaccine against Tick Infestation
- z Vaccine against Theileriosis
- z Serological tests

TOXICOLOGY SECTION

ACTIVITIES

- z **TLC based detection**
- z AFLA toxin
- z Ochra toxin
- z **Quantitation of Antidiabetic Drugs in Plasma samples**
- z Penicillin
- z Tetracycline
- z Streptomycin
- z Sulphonamides
- z Gentamycin
- z Enrofloxin
- z HPLC/GC-MS based detection Wheat, Rice, Corn, Nuts, Milk, Meat, Eggs etc
- z **Pesticides Residue Analysis**
 - Organophosphates
 - Chlorinated pesticides
- z Detection of Toxins and Drug Residues in Poultry Products
- z Milk Adulterants Tests
- z Detection and quantification of Amino Acids profile in food and Animal Feed is performed by Amino Acid Analyzer

PATHOLOGY SECTION

- Analysis of Blood chemistry
- Drugs Analysis in tissue of meat

OTHER ACHEIVEMENTS

POST GRADUTE STUDENTS SUPERVISED/COSUPERVISED FROM UVAS OR OTHER UNIVERSITIES	20
POST GRADUTE STUDENTS UNDER SUPERVISION	10
POSTGRADUATES COMPLETED RESEARCH WORK IN QOL	30
INSTRUMENTS WOPRKSHOP REPAIRED/CALIBRATED EQUIPMENTS	

LAB ACCREDITATION (ISO-17025)

Quality Operation Laboratory UVAS is accredited with Pakistan National Accreditation Council (PNAC) for International Laboratory Management System ISO-17025.

STAFF POSITION (BPS-17 & ABOVE)

Name:	Dr. Atif Hanif
Designation:	Director
Qualification:	Ph.D
Name:	Dr. Shafaqat Fatima Rehmani
Designation:	Senior Research Officer
Qualification:	PhD
Name:	Dr. Yasin Tippu
Designation:	Assistant Professor
Qualification:	M.Sc. (Hons.)
Name:	Mr. Imran Iltaf Khan
Designation:	Lecturer
Qualification:	M.Sc. . (Hons.)
Name:	Mr. Dr. Mateen Abbas
Designation:	Lecturer
Qualification:	Ph.D
Name:	Mr. Abdul Muqeet Khan
Designation:	Lecturer
Qualification:	M.Sc.
Name:	Mr. Syed Fareed Ahmad
Designation:	I T manager
Qualification:	M.Sc.

UNIVERSITY LIBRARY

The University Library is situated on the first floor of the old administration block, which has been continuously disseminating the latest knowledge/information to its undergraduate & postgraduate students, staff and to the entire livestock sector for the promotion of Higher Education Research & Extension. Our library has been fortunate to get support from different project for its uplifting and up-gradation. In this connection, the University Library has so far succeeded to obtain significant achievements in different areas. Approval and implementation of the University Library Regulation 2003, Collection, Development Policy for University Library, Constitution of the University Library Committee, University Library Donation Scheme, Renovation and Repair Plan, Extension and up-gradation project of the University Library, up gradation of the computer labs, establishment of Audio Video section, development of website link of Library are the major areas where the developments have been made after the establishment of UVAS, LHR. University Library is fully engaged in providing effective library services for the promotion of Higher Education, Research and Extension through its following section.

1. Library Circulation Section

Most of the library stock has been placed in the main Library Hall, where sitting arrangements are also available for the students. This section comprises of more than 23,787 Text and reference Books relating to Veterinary & Animal Sciences, and other disciplines along with 1090 Thesis. The Reference materials like Encyclopedias, Dictionaries, Atlases, Maps, Indexes and research reports submitted by research scholars of this University are also available in this section. The use of the reference material is only restricted for study inside the Library.

2. The Book Bank Section

This section has been organized as a special part of the Library to lend expensive text books to the students on longterm basis as per Book Bank Regulations. The book bank comprises of more than 5,500 volumes of text books and students can make full use of this precious facility.

3. Journal Section

There are approximately 4500 bound volumes of 315 old/retrospective scientific journals where as University Library has been receiving 49 latest journals/periodicals

related to different disciplines. In addition to this more than 2500 reports and magazines of different organizations are also available in the section for study and reference for our users.

Automation of all retrospective and current journals has been recently completed and information about the availability of scientific journals has also been shared with PARC's Web Based Union Data Base of Journals in agriculture libraries of Pakistan. ([Http//oracle.parc.gov.pk](http://oracle.parc.gov.pk))

4. Audio Visual Computer Section

This section was established in' 1990 through the courtesy of U.S. MART project, offering the facilities of study & research through Iv., VCR., Micro Fiches Reader with Copier, Full Multimedia *Computers, Scanner, Laser Printers, CD-writer & CD Rom searching facilities by using various* available equipments. This section has been recently uplifted by installing latest computers, close circuit cameras, bar code scanning system and networking.

PROFESSIONAL STAFF

At present four qualified library professional along with sixteen para/non-professional staff are working in the UVAS Library and putting their efforts to make the library at per with the other University librories in the Country.

Prof. Dr. IjazAhmad Officer Incharge Chairman Department of Physiology & Bio-chemistry	Miss Abeeda Zia Assistant Librarian
Mian Muhammad Ilyas Librarian	Mr. Khaliq Sharif Library Assistant
Muhammad Akram Assistant Librarian	

HOSTEL FACILITIES

In order to provide academic and research environment, it is of utmost importance that various facilities like proper accommodation, sports and data search are made available to students. Hostels are conveniently close to most amenities and services, and the location provides an ideal base from which to explore the rest of Lahore. There are eight separate hostels; five for boys and three for girls. All the Hostels are equipped with necessary facilities to make the stay of students comfortable. Warden office monitors the Hostels. In the traditional environment of hostels, the administration teachers give parental care to each and every student. Boarders are taught to live like an extended family in perfect harmony with all the residents of the campus. There are beautiful grassy lawns in the hostel premises which give a healthy look to the area and also provide a source of climatic peace. A beautiful mosque to cater large number of students is also available.

Residential Facilities: The Hostels are provided with mess facilities, TV and phone facilities along with a playground. Provision has been made for extra curricular activities. Separate mess, in almost each hostel, is being run by the authorized contractors under the supervision of the Hostel administration. Electrical Water Coolers have been installed at various points in all the hostels for provision of filtered chilled water. A system of hot water supply by geysers is available in each hostel during the winter season in the washrooms. A small shopping center is located near Tipu Hall. This consists of a general store, photocopying shop and Laundry shop. Hostel Cafeteria and fruit shop are located in front of Tipu Hall and Iqbal Hall, which comprehensively meet the needs of the students and provide the catering services till late at night.

The computer lab in Iqbal Hall has several computers with Internet connection used extensively by the students to surf the net for their studies and research. The service is being provided to the students after class timings. A large number of English and Urdu Newspapers are provided in the each of the hostels. Telephone extensions from the main exchange of the University having telephone numbers 99211374, 99211449 (Iqbal Hall: 257) are available in two main hostels. In addition to it, direct incoming number 99211420 is available in Iqbal Hall.

Accommodation Facilities: With opening of new departments and degree programs, the number of students increased substantially. Additionally 4 residential facilities at Ravi campus have been developed. The available seats in each hostel and currently residing status are as under:

NAME OF HOSTEL	NAME OF HOSTEL ADMINISTRATION		CAPACITY	RESIDING
Hall Warden: Prof. Dr. Masood Rabbani				
Jinnah Hall, City Campus	Mr. Shahid Abbas Assoc. Hall Warden / HS	Dr. Hassan Riaz Resident Tutor	165	185
Iqbal Hall, City Campus	Dr. Muhammad Ashfaq Hall Superintendent	Dr. Ishtiaq Ahmad Resident Tutor	160	160
Seth Sarwar Hall, City Campus	Dr. Jalees A. Bhatti Hall Superintendent	Dr. Tanvir Hussain Resident Tutor	96	96
Tipu Hall, City Campus	Dr. Atif Hanif, Hall Superintendent	Dr. Sajid Umar Resident Tutor	45	60
Sir Syed Hall, City Campus			30	30
Fatima Hall & Khadijah Hall, City Campus	Ms. Sehrish Faryal, Acting Hall Superintendent (girls)	Ms. Sehrish Faryal, RT	83	135

UNIVERSITY SPORTS

Sports and game facilities are available to the students. there are playgrounds for Hockey, Football, Volleyball, Badminton, Tennis and Basketball.

1. The University Sports clubs including Tennis, Indoor Games, Athletics, Cricket, Football, Hockey, Volleyball, Badminton, Table Tannis, Basketball, Body Building, Judo Karate, Handball, Boxing, Squash and Hiking Club.
2. Each Club has President and Vice-President who are staff members.
3. The president organizes the teams, arranges games and matches and helps the Members of the Club in getting necessary facilities.
4. Secretatries and Captains of the Clubs assist the presidents in their work. They are elected amongst the players.
5. Inter-Tutorial Group Tournaments and Sport Championships are held annually. Prized are awarded to the winners.
6. The presidents of various Clubs from the University Sports committee, the Chairman and the Secretaries are elected every year.

UNIVERSITY MOSQUE

For the convenience of the resident students and the staff, a mosque was built on the University Campus in 1950. The University has employed an Imran and Moazzan for the mosque. The air-conditioned mosque has been expanded recently to accommodate the growing number of "Namazies" in the mosque.

INFORMATION TECHNOLOGY (IT) CENTER

To meet the challenges of day to day improvement in the knowledge, Information (IT) had emerged as an essential tool for the growth in every field of life, To strengthen the Livestock Sector as well as Veterinary and Animal Husbandry Sciences, the UVAS has taken very progressive steps in order to adopt this latest technology. For this purpose an IT Center has been established in the university.

In this connection, since the last three years, with the collaboration of HEC, UVAS has spend a large amount do develop the IT infrastructure and serve the faculty members, staff and students of the University in the best and latest possible ways. At the moment, University has internet facility @ 16 Kbps bandwidth for students, staff, faculty members and researchers. The University Departments have been connected with the Fiber Optic backbone. The eight computer labs having 250 PCs in different labs, library and hostels have been installed. The facilities of Internet, printing, scanning and CD writing are available in the Labs. Training programs are being continuously arranged by IT Center to meet the need of trained/skilled manpower for UVAS and various public and private organizations.

IT Center manages the overall IT infrastructure of the university like network development, expansion and maintenance, providing maintenance/trouble shooting services (network, hardware and software) to all departments, Software Development, Data base Management & Website Development and 24-hours Internet facility.

IT CENTER STAFF

Rizwan Saleem Director

M.Sc. (Computer Science)

Aqib Inam(Software manager)

M.Sc(computer Science)

Nadeem Ahmad System Engineer

M.Sc. (Computer Science)

Zeeshan Ali(web master)

(M.sc- IT)

IT Administrators

Imran Younas Chohan (Network Engineer)

1. Abrar Hussain
2. Sher Ali
3. Irfan Younas
4. Muhammad Tayyab Akram
5. Yasir Ameen
6. Rehmat Ali

I solemnly declare that:

1. The particulars given in this form are correct to the best of my knowledge and belief and I have not concealed anything.
2. I have not taken admission in any Postgraduate course previously.
3. I have been never convicted by a court of law nor has a case ever been registered against me.
4. I shall not indulge in any activity, which is subversive or prejudicial to the interest of the University, throughout the period of my study, and shall abide by the rules of the University, framed from time to time.
5. If anything is found contrary to above against me, the University shall have the right to cancel my admission.
6. I will pay the capitation fee, if due.

Dated: _____

Signature of Applicant

INSTRUCTIONS

Attested copies of the following documents from a Gazetted Officer must accompany the application:

- a. Matriculation Certificate.
- b. Intermediate Certificate.
- c. Detailed marks certificate/ Transcripts or D.V.M., B.Sc (Hons.) AH, MBBS, BDS, B.Pharm/ Pharm D, M. Sc. Life-Sciences Or any other equivalent Degree/ M. Phil, M. Sc (Hons.).
- d. Migration Certificate in case of those applicants who are graduates of Universities other than the University of Veterinary and Animal Sciences, Lahore
- e. Character Certificate duly signed by the Head of the Institution last attended on the prescribed Form.
- f. Nomination/Permission from the Head of the Institution/Organization/Government Department (for employees only).
- g. Two copies of passport size of recent photograph.
- h. Copy of National Identity Card.
- i. Copy of Domicile Certificate.
- j. Separate application Form is required for each discipline.
- k. Column # 10 must be filled by each candidate giving facts of the employment. Concealment of facts and / or falls statement will lead to cancellation of admission at any stage.
- l. Incomplete application forms and those received after due date shall not be entertained.
- m. At the time of 1st enrollment a certificate from the University Resident Medical Officer to the effect that he is free from any communicable disease or mental or physical disability which is likely to stand in the way of his pursuing the chosen field of study.