



Postgraduate Prospectus

Regular Admission

2024-25

University of Veterinary & Animal Sciences, Lahore

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 was started as a Veterinary School in 1882 and later it was raised to the status of the Punjab Veterinary College by the end of the 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, Lahore. It was an obvious testimony of the fact that the Government is committed to achieve the objective of institutional arrangement for further research, human resource development and poverty alleviation.

VISION OF A UNIVERSITY

The University aspires to be the nation's leading Public Sector University with global recognition due to its quality in teaching and research, civic engagement and economic development.

MISSION OF THE DIRECTORATE OF ADVANCED STUDIES

To encourage and assist fresh 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.



MESSAGE FROM THE VICE CHANCELLOR

The University of Veterinary & Animal Sciences, Lahore is one of the oldest Veterinary Institutions in Asia, having 142 glorious years of historical legacy. UVAS always strives to ascend in Global rankings therefore, it has been recognized remarkably by international and national ranking agencies in their different categories of ranking of the universities. It is shared with great pleasure that UVAS has been ranked among 801-1000 universities of the world while securing 9th position among Public Sector Universities of Pakistan and particularly stood 3rd among the Universities in Punjab by Times Higher Education (THE) World University Ranking 2024. UVAS has been ranked among 251-300 universities by THE Asia University Rankings



2024. It is pertinent to mention that UVAS improved the ranking band during current year 2024 as compared to previous year-2023. Besides, the UVAS has also been ranked among 401-600 universities of the world in its latest THE Impact Rankings 2024. It is a matter of pride that UVAS secured a significant position in the category “Veterinary Science” and stands among 51-70 best universities of the world in this subject ranking by QS World University Rankings by Subject 2024. The HEC Islamabad declared the UVAS among top 10 universities of the Pakistan and 4th best university in sports rankings among all public sector universities of Pakistan. UVAS also has several numbers of International students from Asian and African countries.

Being flagship University of country’s Livestock sector, UVAS has fully realized the needs of the sector and initiated relevant degree programs, research projects, technology centers and services to meet the challenges of growing industries, farming communities and stakeholders. In addition, UVAS has always taken the responsibility of serving the humanity and livestock whenever country faced natural disasters *viz* Earthquake of 2005, COVID-19, flood situations of 2010, 2014 and 2022. Due to vital role in provision of relief activities particularly in flood-affected areas of Pakistan in 2022, UVAS stood 2nd among top 50 selected Higher Education Institutions of Pakistan by the Prime

Minister Office. Furthermore, Chancellor/ Governor Punjab appreciated UVAS for playing the leading role in Flood Relief & Assistance Campaign 2022 in a befitting manner.

I am delighted that the quality and reputation of research has continued to grow across the university. The university won 64 competitive research grants worth Rs. 396.56 million includes 14 foreign funded (80.5 million) and 50 locally funded (316.06 million) projects. This evidences the research culture and its significance in innovation and economic growth. Parallel with R&D, institutional and sectoral development is also a key indicator of progress. This year UVAS has concluded three development initiatives of worth Rs. 386 million with generous support of L&DD, Punjab. These endeavors encompassed the capacity building of more than 2,000 dairy farmers 8 industry stakeholders on milk value chain, 02 male & female student hostels of 100 capacity each at Ravi Campus Pattoki and fortifying the academic facilities at Para Veterinary Institute, Layyah. Additionally, a development project namely strengthening of KBCMA CVAS, Narowal of Rs. 2,880 million was awarded to UVAS funded by HEC, with exceptional efforts of Principal KBCMA, CVAS Narowal. Also, the strengthening of academic 08 allied facilities at CVAS, Jhang of Rs. 185 million from L&DD Punjab has also been approved and being executed progressively.

The commercialization of research and expertise from this University generates significant economic growth and business opportunities within country. Our research-focused teaching ensures our students receive the highest quality education, which introduces them to the frontiers of knowledge and provides them with the skills and discipline to contribute fully to whatever career they follow. We have a strong professional orientation with a focus on academic excellence and graduate employability. For these reasons, UVAS graduates are highly sought after both locally and internationally. By working closely with our communities, we are proud to play a leadership role in enhancing economic prosperity, contributing to improvements in the health and well-being of our nation.

UVAS has five campuses, including City Campus Lahore, Ravi Campus Pattoki, CVAS Jhang, KBCMA CVAS Narowal and Para Veterinary Institute at district Layyah. Besides that, there is one Avian Research and Training Center Ferozpur Road, Lahore. There are two (02) affiliated institutes situated at Lahore and Sahiwal. Besides, UVAS has five faculties offering market driven 85 professional degrees, including 34 M. Phil and 26 Ph.D degree programs. UVAS has developed state of the art clinics, teaching, training, research and diagnostic facilities. The role and contribution of this institution in imparting quality education and conducting high standard research in the field of Livestock, Poultry, Fisheries,

Wildlife, Pharmaceutics, Biological Sciences and Life Sciences & Business Management in general are now well recognized nationally and internationally.

UVAS students on one hand demonstrate academic excellence while on the other hand they are actively engaged in co-curricular and extra-curricular activities. Many of the UVAS students engage in social welfare, community development and innovative services through thirty (30) clubs and societies run by students themselves and patronized by faculty members. These clubs and societies have put in extra-ordinary efforts to prove their social responsibility and provide opportunities for the students to polish their skills and divulge hidden talent. Our students and staff have extended their social services to wide ranging activities like flood relief, awareness campaigns, animal welfare, civic engagement, community development etc.

In this background, I welcome you as a postgraduate student in this university. Programs launched by this University require hard work, commitment and require you to stay on the campus and at your experimental/research 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 trained for it.

I assure you, if you work honestly, diligently and devotedly to improve your knowledge and professional skills, the University faculty and administration shall provide you all support 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 and shine as a distinct star in the realm of your profession.

Meritorious Prof. Dr. Muhammad Younus (DLA.I, T.I)
Vice Chancellor

MESSAGE FROM THE DIRECTOR ADVANCED STUDIES

Directorate of Advanced Studies & Research came into existence along with the University in July 2002. Directorate of Advanced Studies and Directorate of Research work together since the up-gradation of the College of Veterinary Sciences into the University of Veterinary & Animal Sciences, Lahore. In March 2007, Directorate of Advanced Studies became independent and making progress with full spirit. This Directorate is the custodian of all postgraduate degree programs and deals with administrative matters of postgraduate students. Higher Education is imperative to the development of a nation and the universities are considered to be the main source of higher education, research and human resource development. Consequently, skilled man power is produced to work in the industrial and other technological sectors.



The postgraduate scholars are expected to produce leadership qualities in themselves and practice higher ethical values like honesty, truthfulness, contentment and hence develop a balanced personality in terms of their mental and physical faculties.

UVAS has five faculties offering market driven 85 professional degrees, including 34 M. Phil and 26 Ph.D degree programs. Currently 965 MPhil and 293 PhD students are enrolled in various disciplines. UVAS has awarded degrees to 505 Ph. D and 5050 MPhil students until now. This institution has 365 faculty members, among them 256 are Ph. D in their fields of specialization. Recently, university faculty has published 600 research papers in HEC recognized and impact factor journals. UVAS is successfully executing one hundred twenty three (123) ongoing Research Projects of worth Rs.1.34 Billion funded by various national and international funding agencies. UVAS has developed 65 international and 115 national linkages with academia and industries.

UVAS is highly privileged on the diversity of her students' background and geographical association. UVAS focuses on individual mentoring. This directorate makes all arrangements to provide postgraduate students, a conducive environment for study and research. At the same time, I would like to

emphasize that as a postgraduate, students should aim to become and experts in their field of study, so that they could serve the nation in a befitting manner. They are also expected to develop a holistic approach towards scientific solutions to the problems particularly of the Livestock Sector and become the scientific leaders of the nation.

I welcome all the prospective postgraduate students across the globe and wish them best of luck for their stay at the UVAS and ever after.

Dr. Sakhra Mahmood
Director

DIRECTORATE OF ADVANCED STUDIES

STAFF MEMBERS

- i. Dr. Sakhra Mahmood**
Director
- ii. Dr. Syed Bilal Ahmed Shah**
Assistant Director
- iii. Shafqat Bashir Minhas**
Assistant
- iv. Rehman Nayyer**
Assistant
- v. Tahir Mehmood**
Assistant
- vi. Kalsoom Nawaz**
Senior Clerk
- vii. Subhan Shahid**
Senior Clerk
- viii. Tehreem Siddiqui**
Junior Clerk
- ix. Sardar Ali**
Qasid
- x. Muhammad Umar**
Naib Qasid

Advanced Studies & Research Board Meeting Glimpses



ELIGIBILITY CRITERIA FOR REGULAR SEMESTER ADMISSION 2024-25

Sr. No.	Post-Graduate Degree Program	Eligibility Criteria
1.	MICROBIOLOGY	<p>M. Phil: BS. (Hons.) Applied Microbiology /Microbiology, BS. (Hons.) Biotechnology, DVM, MBBS, BDS, MLT.</p> <p>Ph. D: M. Sc. (Hons.)/M. Phil Microbiology, Biotechnology. Epidemiology & Public Health</p>
2.	PATHOLOGY	<p>M. Phil: DVM, MBBS, BDS, BS Applied Microbiology, DND, Pharm-D, MLT</p> <p>Ph. D: M.Phil Pathology, M. Phil Veterinary Sciences, M. Phil MLT, M. Phil DND, M.Phil Biotechnology and M.Phil Molecular Biology with deficiency courses.</p>
3.	PARASITOLOGY	<p>Phil: DVM, MBBS, MLT, BS (Hons.) Zoology, BS (Hons.) Biological Sciences, Microbiology.</p> <p>Ph.D: M. Phil Parasitology/ Veterinary Sciences, Medical Science with basic degree of MBBS/ DVM, Zoology, Microbiology, Biological Sciences.</p>
4.	THERIOGENOLOGY	<p>M.Phil: DVM</p> <p>Ph.D: M.Phil in Veterinary Science</p>
5.	CLINICAL MEDICINE	<p>M. Phil: DVM</p> <p>Ph. D: M. Phil in Veterinary Science</p>
6.	VETERINARY SURGERY	<p>M. Phil: DVM</p> <p>Ph. D: M. Phil in Veterinary Science</p>
7.	PET ANIMAL PRACTICES	<p>M. Phil: DVM</p>
8.	EPIDEMIOLOGY & PUBLIC HEALTH	<p>M. Phil: DVM (Registered with PVMC), MBBS (Registered with PMDC or PMC), BS (Hons.)</p>

		<p>Microbiology.</p> <p>Ph. D: MPhil degree holders in the discipline of Epidemiology and Public Health, One Health, MPH, MPhil in Epidemiology and Biostatistics, MPhil in Community Medicine, or any other relevant field, with a basic degree DVM (registered with PVMC), MBBS/BDS (registered with PMDC or PMC), BS (Hons.) in Microbiology, Bachelor of Nursing (4-year degree registered with PNC), or any allied health professional degree (registered with the relevant council)</p>
9.	ONE HEALTH	<p>M. Phil: DVM (Registered with PVMC), MBBS (Registered with PMDC or PMC), Pharm-D (Registered with PCP), BS (Hons.) Microbiology, BS (Hons.) Environmental Sciences, BS (Hons.) Nutrition and Dietetics, BS (Hons.) Poultry Science or Bachelor of Nursing (04 years degree registered with PNC)</p>
10.	ANATOMY & HISTOLOGY	<p>M. Phil: DVM, MBBS, BDS/DPT/ BS (Hons.) Zoology/ BS (Hons.) Biological Sciences OR related disciplines (with Anatomy & Histology courses).</p> <p>Ph. D: M.Sc (Hons.)/ M.Phil in Anatomy & Histology/Anatomy/Histology/Zoology OR related disciplines (with Anatomy & Histology courses).</p>
11.	FOOD & NUTRITION	<p>M. Phil: Sixteen (16) years of education BS/B. Sc. (Hons.) with major Food and Nutrition, Human Nutrition, Nutrition and Dietetics, Doctor of Nutrition and Dietetics (DND) .</p> <p>Ph. D: M. Phil. /M. Sc. (Hons.) Food and Nutrition, Food Science, Public Health, Food Safety.</p>
12.	FOOD SAFETY AND CONTROL	<p>M. Phil: B.Sc. (Hons.) / M.Sc. Food Science and Technology, Dairy Technology, Food and Nutrition, DVM, Microbiology, Poultry, Fisheries</p>

		& Aquaculture, Biochemistry & Biotechnology, Pharm D.
13.	PHARMACOLOGY & TOXICOLOGY	<p>M. Phil: DVM, Pharm-D, MBBS, BDS, BEMS, Anesthesiology, DPT, DND, BS (Hons.) Nutrition and Dietetics, BS (Hon.) Applied Microbiology, BS (Hons.) Nursing, BS (Hons.) Environmental Sciences, BS (Hons.) Biological Sciences, BS (Hons.) Biochemistry, BS (Hons.) Medical Laboratory Technology and other relevant degree having courses of Pharmacology and Toxicology.</p> <p>Ph. D: M. Phil in Pharmacology, M. Phil Pharmacology & Toxicology.</p>
14.	PHYSIOLOGY	<p>M. Phil: DVM, MBBS, Pharm-D, Doctor of Nutrition and Dietetics, BS Hons. Zoology, BS Hons. Biological Sciences, BS Hons. Nutrition and Dietetics, BS Hons. Physiology, BDS, MSc Zoology, DPT, BS. Biochemistry, BS Cardiac Perfusion, BS Hons. Medical Laboratory Technology, BS Hons. Respiratory Therapy, BS. Renal and Dialysis Technology. BHMS</p> <p>Ph. D: M.Phil in Physiology or 18 years of education with basic degree in DVM,MBBS, Pharm D, Doctor of Nutrition and Dietetics, BS (Hons.) Nutrition and Dietetics, BS (Hons.) Zoology, BS (Hons.) Biological Sciences, BS. (Hons.) Physiology, BS. (Hons.) Cardiac Perfusion and DPT.</p>
15.	PHARMACEUTICS	<p>M. Phil: Pharm-D/ B. Pharm registered with Pharmacy Council</p> <p>Ph. D: M. Phil in Pharmaceutics</p>
16.	PHARMACEUTICAL CHEMISTRY	<p>M. Phil: Pharm-D/ B. Pharm registered with Pharmacy Council</p>
17.	PHARMACY PRACTICE	<p>M. Phil: Pharm-D/ B. Pharm registered with Pharmacy Council</p>
18.	PHARMACOLOGY &	<p>M. Phil: Pharm-D/ B. Pharm registered with</p>

	THERAPEUTICS	Pharmacy Council
19.	BIOCHEMISTRY	<p>M. Phil: DVM, MBBS, M.Sc /BS (Hons.) in Biochemistry, Molecular Biology, Biotechnology, BS Hons Biological Sciences, Chemistry (with specialization in biochemistry)</p> <p>Ph.D: M.Phil/M.Sc (Hons.) Biochemistry, Molecular Biology, Biotechnology</p>
20.	MOLECULAR BIOLOGY & BIOTECHNOLOGY	<p>M. Phil: DVM, MBBS, M.Sc /BS (Hons.) in Molecular Biology, Biotechnology, Biochemistry, Biological Sciences, Zoology, Genetics, MLT from HEC recognized institute.</p> <p>Ph.D: M.Phil/M.Sc (Hons.); Molecular Biology, Biotechnology, Biochemistry, Forensic Sciences, Eighteen year of education with basic degree DVM, MBBS, BDS (registered with PVMC, PMC or PMDC).</p>
21.	ENVIRONMENTAL SCIENCES	<p>M. Phil: BS (Hons.) Environmental Sciences or Environmental Engineering (4 Year Program), BS Hons. Agriculture, Agri. Engg., Animal Sciences, Microbiology, DVM, MBBS, M. Sc. Botany, Chemistry, Biochemistry, Zoology, Microbiology, Engineering.</p>
22.	POULTRY PRODUCTION	<p>M. Phil: DVM, BS (Hons.) Poultry Science, Animal Science, Animal Husbandry, B. Sc. (Hons.) Zoology, M.Sc. Zoology</p> <p>Ph. D: M. Sc (Hons.)/ M. Phil in Veterinary & Animal Sciences</p>
23.	DAIRY TECHNOLOGY	<p>M. Phil: DVM, BS (Hons.) Dairy Technology, Food Science and Technology, Nutrition & Dietetics, Food & Nutrition, Engineering, Biochemistry, Biotechnology, Animal Sciences, Chemistry, BS (Hons.) Biological Sciences, Dairy Science, Animal Husbandry, BS (Hons) Zoology, Microbiology, Bioinformatics.</p> <p>Ph. D: M.Sc. (Hons.) in any science discipline/ M. Phil Dairy Technology, Food & Nutrition, Food Safety</p>

		& Control, Food Technology, Food Engineering, Chemistry, Biochemistry, Biotechnology, Livestock Management, Animal Husbandry and other related degree program. Chemistry, Genetics, Zoology, Animal Sciences, Microbiology, Dairy Science.
24.	LIVESTOCK MANAGEMENT	M. Phil: DVM/B.Sc (Hons.) AH, BS (Hons) Animal Science. Ph. D: M. Phil / M.Sc (Hons) in Animal/ Veterinary Sciences
25.	ANIMAL BREEDING & GENETICS	M. Phil: DVM/BS in Animal Science, Poultry Science Ph. D: M.Sc (Hons)/ M. Phil in Animal Breeding & Genetics, MPhil Genetics, M. Phil / M.Sc. (Hons) in Animal/ Veterinary Sciences
26.	GENETICS	M. Phil: DVM/B.Sc (Hons.) AH, BS (Hons.) Genetics/ Poultry Science/ Biological Science/ Zoology/Biotechnology/Botany/MLT
27.	ANIMAL NUTRITION	M. Phil: DVM Ph. D: DVM with M.Phil in Animal Nutrition.
28.	MEAT SCIENCE & TECHNOLOGY	M. Phil: DVM , B. Sc. (Hons)/BS Animal Science, Poultry Production, Applied Microbiology, BS Food Science and Nutrition, Food Science & Technology, Agriculture with major Food Technology, Food Engineering, B. Sc. (Hons.)/M. Sc. Zoology Ph. D: M.Phil. in the discipline of Meat Science and Technology, M.Phil/MS in Animal Sciences, Food Science and Technology and Poultry Science
29.	FISHERIES & AQUACULTURE	M.Phil: BS (Hons.) /M.Sc Fisheries & Aquaculture, Zoology, Applied Zoology, Wetland Management, Wildlife & Ecology, DVM, Environmental Sciences, BS (Hons.) Biological Sciences & Allied Subjects (Prasitology, Anatomy & Histology, Microbiology) Ph.D: M.Sc (Hons.)/MS/ M.Phil in Fisheries &

		Aquaculture, Zoology, Applied Zoology, Wildlife & Ecology, Environmental Sciences, Biological Sciences & Allied Subjects (Prasitology, Anatomy & Histology, Microbiology)
30.	WILDLIFE & ECOLOGY	<p>M.Phil: BS (Hons.) in Wildlife & Ecology, Zoology, Fisheries & Aquaculture, Environmental Sciences, Natural Resource Management, BS (Hons.) Biological Sciences, DVM, Agriculture, Forestry, Botany and allied subjects. M. Sc. in Wildlife & Ecology/ Management, Zoology, Biology, Geography (B. Sc. with Botany, Zoology & Geography), Wetland Management, Fisheries & Aquaculture, and Botany.</p> <p>Ph. D: M.Sc. (Hons.)/MS /M. Phil in Zoology, Wildlife, Ecology, Biological Sciences, Ecology & Natural Resource Management, Range Management, Forestry, Botany.</p>
31.	ZOOLOGY	<p>M. Phil: BS (Hons.)/ M. Sc. in Zoology, Fisheries and Aquaculture, BS (Hons.) Biological Sciences, Applied Microbiology, MBBS, BDS, DVM, M.Sc. Parasitology, Anatomy, Physiology.</p> <p>Ph. D: M.Sc. (Hons.)/MS/M.Phil. in Zoology, Fisheries & Aquaculture, Wildlife & Ecology, Parasitology, Anatomy, Physiology, Wildlife & Range Management.</p>
32.	BOTANY	<p>M. Phil: BS Botany, MSc Botany, BS Biological Sciences.</p> <p>Ph. D: M. Phil Botany</p>
33.	BUSINESS MANAGEMENT	<p>M.Phil: 16 years of education in Business Management Administration i.e. BBA, B.com (Hons.)/MBA from HEC recognized University</p> <p>Ph. D: Ms/MPhil Business Management, Business Administration, Management Science, Management Marketing, Finance, Supply Chain and Retail Management, Banking and Finance, Accounting and Finance, Financial Management,</p>

DIRECTORATE OF ADVANCED STUDIES

		Accounting and Analytics, International Trade, Human Resource Management, Insurance and Risk Management, Total Quality Management, Quality Management, Islamic Banking & Finance, Business Analytics.
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ALLOCATION OF SEATS FOR POSTGRADUATE REGULAR ADMISSION 2024-25

Sr. No.	Disciplines	M. Phil		Ph.D	
		Morning	Evening	Morning	Evening
Faculty of Veterinary Sciences					
1.	Microbiology	37	20	16	05
2.	Pathology	35	-	08	-
3.	Parasitology	21	02	13	01
4.	Theriogenology	15	15	10	10
5.	Clinical Medicine	16	-	10	-
6.	Veterinary Surgery	11	-	05	-
7.	Pet Animal Practices	10	-	-	-
8.	Epidemiology & Public Health	08	-	05	-
9.	One Health	08	-	-	-
Faculty of Biosciences					
10.	Anatomy & Histology	18	-	08	
11.	Food & Nutrition	15	-	06	-
12.	Food Safety & Control	04	-		-
13.	Pharmacology & Toxicology	25	-	10	-
14.	Physiology	12	-	05	-
15.	Pharmaceutics	10	-	10	-
16.	Pharmaceutical Chemistry	10	-	-	-
17.	Pharmacology & Therapeutics	10	-	-	-
18.	Pharmacy Practice	10	-	-	-

19.	Biochemistry	13	-	07	-
20.	Molecular Biology & Biotechnology	13	-	11	-
21.	Environmental Sciences	20	10	-	-
Faculty of Animal Production & Technology					
22.	Poultry Production	15	-	05	-
23.	Dairy Technology	15	-	07	-
24.	Livestock Management	20	-	10	-
25.	Animal Breeding & Genetics	12	-	06	-
26.	Genetics	05	-	-	-
27.	Animal Nutrition	13	-	07	-
28.	Meat Science & Technology	15	-	05	-
Faculty of Fisheries & Wildlife					
29.	Fisheries & Aquaculture	15	-	05	-
30.	Wildlife & Ecology	15	-	05	-
31.	Zoology	30	-	15	-
32.	Botany	20	-	15	-
Faculty of Life Sciences & Business Management					
33	Business Management	25	25	07	-
	Business Management (weekend)	25	-	-	-
Jhang Campus					
1.	Pathology	15	-	-	-
2.	Microbiology	14	-	-	-
3.	Parasitology	10	-	-	-
4.	Clinical Medicine	20	-	-	-
5.	Biochemistry	15	-	-	-

Narowal Campus					
1.	Microbiology	09			
2.	Pathology	09			

GENERAL RULES AND REGULATIONS FOR ADMISSION

The following postgraduate degree programs are being offered:

A. M.Phil

B. Ph. D

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 eight semesters for whole time students
- (ii). The duration 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 eight semesters

Status of Student	Min	Max
Full Time Student	4	8
Part Time Student	6	8

- (iii). The medium of instructions and examinations shall be English.

Eligibility

16 years of schooling or 4 years education (120 credit hours) after HSSC /F.A /F.Sc./Grade12 equivalents. Minimum 2nd Div. 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 and only registered candidates (all degrees) from concerned council like PVMC, PMDC, Punjab Pharmacy Council, Nursing Council, National Council for Tib etc. The candidates need to fulfill the departmental eligibility criteria in letter and spirit. If the CGPA/Percentage is not mentioned on the transcript, the candidate must produce equivalent weightage from the parent university. In case of foreign degree, candidate must produce an Equivalence Certificate from HEC, Islamabad.

Furthermore, university reserves the right to excuse any candidate for admission without giving any reason.

Note: Candidates will have to qualify the GRE/HAT General to be conducted by UVAS, Lahore. Qualifying score is 50%.

M.Phil DEGREE PROGRAM DISCIPLINES:

Lahore Campus:

Anatomy & Histology, Physiology , Parasitology, Epidemiology & Public Health , One Health, Theriogenology, Pathology, Clinical Medicine, Veterinary Surgery, Food Safety and Control, Microbiology, Environmental Sciences, Molecular Biology and Biotechnology, Biochemistry, Pet Animal Practices, Pharmacology & Toxicology, Food and Nutrition, Pharmaceutics, Pharmaceutical Chemistry, Pharmacology & Therapeutics, Pharmacy Practice, Meat Science & Technology and Business Management.

Ravi Campus, Pattoki

Animal Nutrition, Poultry Production, Livestock Management, Genetics, Animal Breeding & Genetics, Dairy Technology, Fisheries & Aquaculture, Wildlife & Ecology, Zoology and Botany.

Jhang Campus:

Microbiology, Parasitology, Clinical Medicine, Pathology, Biochemistry.

Narowal Campus:

Microbiology, Pathology

B. 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 sixteen semesters for whole-time students. In case of University employees admitted as part time students, the duration shall not be less than eight semesters and more than sixteen semesters.

Status of Student	Min	Max
Full Time Student	6	16
Part Time Student	8	16

Eligibility

The candidates must have Master's degree (M.Sc. Hons./M.Phil) in related field of study with minimum of 1st Division (60%) according to annual system or not less than CGPA 3.00/4.00 according to semester system from HEC recognized universities and only registered candidates (all degrees including Bachelor's and Master's) from concerned councils like PVMC, PMDC, Punjab Pharmacy Council, Nursing Council, National Council for Tib etc. will be eligible. The candidates need to fulfill the departmental eligibility criteria in letter and spirit. If the CGPA/Percentage is not mentioned on the transcript, the candidate must produce equivalent weightage from the parent university. In case of foreign degree, candidate must produce an Equivalence Certificate from HEC, Islamabad. Furthermore, university reserves the right to excuse any candidate for admission without giving any reason.

Candidates will have to qualify the GRE/HAT General to be conducted by UVAS, Lahore. Qualifying score is 60%.

Ph.D. DEGREE PROGRAM DISCIPLINES:

Lahore Campus:

Pharmacology & Toxicology, Physiology, Anatomy & Histology, Biochemistry, Molecular Biology and Biotechnology, Microbiology, Pathology, Parasitology, Theriogenology, Clinical Medicine, Veterinary Surgery, Epidemiology and Public Health, Food & Nutrition, Pharmaceutics, Business Management and Meat Science & Technology.

Ravi Campus Pattoki:

Animal Nutrition, Livestock Management, Animal Breeding & Genetics, Poultry Production, Dairy Technology, Wildlife & Ecology, Fisheries & Aquaculture, Genetics, Zoology and Botany.

Government Employees:

1. The employees of the Government/other agencies nominated for the degree of Doctor of Philosophy at this University shall have to take NOC and study leave to pursue studies as a regular student, failing which he/she shall not be admitted. Furthermore, if any postgraduate student gets job will be required to intimate university and submit NOC and study leave immediately to continue his/her studies, failing which his/her admission shall stand cancelled as admissible in UVAS rules and regulations

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 the prescribed form after each semester to the Director QEC through the Chairman of the Department/Dean/Director concerned

(Explanation: In case their progress is not satisfactory, they will be called during the 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 instructions and examinations shall be English.
4. There will also be a Supplementary Semester of 8 to 10 weeks (Summer Semester) each year as part of an academic year which shall be optional. Students, who desire to take up failed courses as approved in their course work programs under the rules, may enroll during this semester. It shall not count towards residential requirements.

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 UVAS GRE / HAT General for M.Phil (Qualifying score 50%) and Ph.D (Qualifying score 60%).

Submission of Admission Application

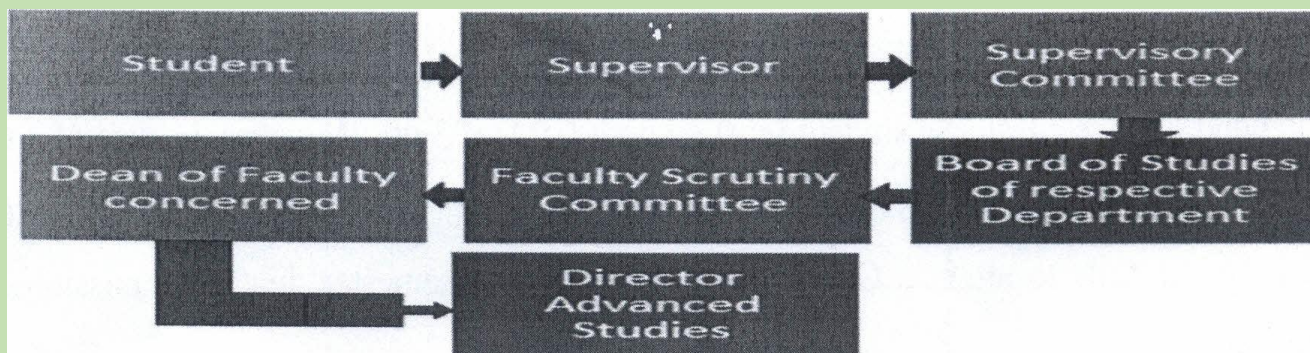
Prospectus can be downloaded from the university website www.uvas.edu.pk. Application form can be submitted online through the UVAS website and the challan form of an amount of Rs. 2500/- per form and Rs. 500/- for additional discipline will be generated with the application form and amount can be deposited at any branch of Bank of Alfalah, in an Online Account. Applications complete in all respects should reach in the Directorate of Advanced Studies, UVAS, Lahore through postal/courier services only within the prescribed period of time as notified by the University. Incomplete application or those received after the due date shall not be entertained and be rejected without any notice.

GUIDELINES FOR POSTGRADUATE STUDENTS

A. Guidelines for M.Phil Students

1. DVM (4 years degree program) students' seeking admission to Faculty of Animal Production & Technology will have to study deficiency courses offered by the concerned Department
2. To complete enrollment formalities in each semester, the student will submit dues & enrollment form complete in all respects in the Directorate of Advanced Studies
3. Ordinarily, a full time student shall not be enrolled for more than 16 and less than 10 credits in a semester except for the last semester
4. 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
5. 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
6. 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
7. For the award of the degree, a student must obtain CGPA at least 2.50
8. Submission of Course Work Program and constitution of their Supervisory Committee is due at the end of 1st semester
9. Submission of Synopsis to the Directorate of Advanced Studies is due at the end of the 2nd semester

10. The route of Synopsis approval will be as under:



(i). Synopsis is required to be successfully defended in the Departmental Board of Studies (DBoS) then it will be submitted before Faculty Synopsis Scrutiny Committee. If the Faculty Scrutiny Committee does not suggest any change, the Dean concerned will forward Synopsis to Director Advanced Studies (DAS) for approval (for M.Phil) and further by the Advanced Studies and Research Board (for Ph.D).

11. If the Faculty Scrutiny Committee suggests any change, the Dean will send the Synopsis back to the Chairperson of the concerned Department in order to ask the student to make suggested changes in the Synopsis. After making the changes, Chairperson of the Department will send the Synopsis to Convener, Faculty Scrutiny Committee for onward submission to Director Advanced Studies. (In case of Ph.D, approval from Advanced Studies & Research Board is mandatory).

12. Discontinuation of Semester = Student can discontinue the Semester only once, but only after first semester (for MPhil)

13. Cancellation of Semester= Can cancel only once during MPhil program after successful completion of 1st semester but not in last semester. If he/she desires for readmission, he/she will be required to apply for readmission before the expiry of 2 years (04 semesters)

14. Submission of Semifinal/Final Thesis = During the 4th (regular) Semester

15. Thesis Examination (Viva Voce) = After fulfilling all academic and administrative requirements

B. GUIDELINE FOR PhD SCHOLARS

- i. To complete enrollment formalities in each semester, the student will submit dues and enrollment form complete in all respects
- ii. Ordinarily, a whole time student shall not be enrolled for more than 12 and less than 8 credits in a semester except in the last semester
- iii. 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
- iv. Submission of Course Work Program will be due at the end of the 1st semester
- v. Submission of Synopsis to the Directorate of Advanced Studies is due at the end of the 2nd semester

COMPREHENSIVE EXAMS:

- i. 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.
- ii. 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 (E-30) by depositing Examination Fee within a week of scheduled Enrollment. 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 at the first attempt
- iii. To pass the Comprehensive Examination, a student must obtain not less than grade “**B**” in the written and the oral parts, separately
- iv. A student shall not be eligible to sit in the oral part, unless he has qualified in the written part of the Examination
- v. 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.

- vi. 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. Henceforth, he/she will be required to seek fresh admission subject to condition his/her previous courses will not be revalidated.
- vii. A student who has passed the comprehensive examination shall be deemed to have become a candidate for admission to Ph.D degree
- viii. Discontinuation of Semester = Can discontinue only once during PhD Program but after 2nd semester.
- ix. Cancellation of Semester= Can cancel only once during PhD program after successful completion of 2nd semester but not in last semester. If he/she desires for readmission, he/she will be required to apply for readmission before the expiry of 2 years (04 semesters)

SUBMISSION OF PhD SYNOPSIS

- i. Submission of Synopsis to Advanced Studies & Research Board = During 2nd semester

SUBMISSION OF PhD SEMI FINAL/FINAL THESIS:

- i. 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.
- ii. Thesis will be sent abroad for evaluation by two external examiners from technologically advanced countries.

GENERAL INSTRUCTIONS FOR POSTGRADUATE STUDENTS

- i. 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.
- ii. 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 respective Dean shall have to be obtained for conducting that course. The Board decided that approval of respective Dean 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 respective Dean
- iii. All students are required to submit their Course Work Program during 1st Semester and Synopsis during 2nd Semester.
- iv. 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.
- v. An approved' course, not offered for four semesters consecutively, shall stand deleted from the list of approved courses of the department concerned.
- vi. 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.
- vii. 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.
- viii. Only HEC approved academically qualified and competent teachers by virtue of their experience in the related field should be allowed to supervise the work of Ph.D. students.

- ix. 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.
- x. 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.
- xi. Compulsory courses like Statistics and Biochemistry shall be counted towards major field and minor field respectively as under statutes 4(b) relating to the postgraduate students.
- xii. There will be no "D" grade for the deficiency courses and students will be marked A, B, C and F.
- xiii. 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.
- xiv. 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.
- xv. 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.
- xvi. 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.

Course Work (Sample)



UNIVERSITY OF VETERINARY & ANIMAL SCIENCES, LAHORE

Course Work Program for M.Phil/ Ph.D in (Discipline Name)

Department: _____

Registration No: _____

Name of Student: _____

Signature of Student: _____

Login I.D: _____

Date of Admission: _____

Supervisory Committee:

1. (Name)

Supervisor: _____

2. -do-

(Co-Supervisor if any): _____

3. -do-

Member: _____

4. -do-

Member: _____

Course No.	Title of the Course	Minimum Credit Hours Required	
		M. Phil	Ph. D
A)	Major Courses (with compulsory Statistics)	21	18
B)	Minor Courses (with compulsory Biochemistry)	08	06
C)	Research and Thesis	6	24
D)	Total	35	48

Dean

Faculty of _____
UVAS, Lahore

Chairman

Department of _____
UVAS, Lahore

Director Advanced Studies
UVAS, Lahore



Course Work (Template)

UNIVERSITY OF VETERINARY & ANIMAL SCIENCES, LAHORE

Course Work Program for M.Phil/ Ph.D in (Discipline Name)

Department: _____

Registration No: _____

Name of Student: _____

Signature of Student: _____

Login I.D: _____

Date of Admission: _____

Supervisory Committee:

1. (Name)

Supervisor: _____

2. -do-

(Co-Supervisor if any): _____

3. -do-

Member: _____

4. -do-

Member: _____

A) MAJOR COURSES

Course No.	Title of Course	Credit Hours
MED-01031	Biotechnology in Animal Health	4(3-1)
MED-01034	Advanced Dairy Herd Health	4(3-1)
MED-01036	Camel Health and Diseases	4(3-1)
MED-01037	Medicine PG Clinic I	1(0-1)
MED-01038	Medicine PG Clinic II	1(0-1)
MED-01039	Advanced Readings in Veterinary Medicine	1(1-0)
STAT-01002	Experimental Design (PhD)	3(1-2)
TOTAL	Ph.D	18

B) MINOR COURSES

Course No.	Title of Course	Credit Hours
BIOC- 01031	Advanced Biochemical Techniques	3(1-2)
MICR-01031	Clinical Microbiology	3(1-2)
TOTAL	Ph.D	06

C) Research and Thesis (Major) for Ph.D

24

D) Total Credit Hours for Ph.D

48

Dean

Faculty of _____
UVAS, Lahore

Chairman

Department of _____
UVAS, Lahore

Director Advanced Studies
UVAS, Lahore

GUIDELINE FOR SYNOPSIS WRITING (SAMPLE)

1- Approved Format of Synopsis Write-Up

- Single side print of paper in the whole body of Synopsis
- Font: Times New Roman, Size 12
- Double line spacing and both right and left justified margins must be used
- Page layout should be with Normal Margins (1" Top, Bottom, Right and Left)
- Page size should be A4 (8.27" x 11.69")

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

What the present study is expected to contribute to the existing scientific knowledge on the subject/
topic.

REVIEW OF LITERATURE (New page)

No. of minimum latest reviews for M.Phil Synopsis = 15

No. of minimum latest reviews for Ph.D Synopsis = 25

Reviews should be arranged in paragraph style, chronological order and be split up under sub-headings in case of Ph.D Synopsis

Only desperately required old references/reviews should be added

STATEMENT OF PROBLEM (New page)

MATERIALS & METHODS (New page)

- i. Experimental design should be clearly mentioned with references
- ii. It should be in a logical order including following information:
- iii. Experimental Animals/ Birds (Information about their origin, rearing etc.)
- iv. Selection criteria - Species/ Age/ Sex! Health Status
- v. Experimental Design (Sample size, grouping of animals/birds - No. of Groups, Positive and Negative controls, etc.)
- vi. Techniques for collection of samples (e.g. sampling material, mode of transportation preservation, examination and identification etc.)
- vii. What statistical model would be applied to present project?

SUMMARY (New page)

It should include the following:

- i. Background
- ii. Hypothesis
- iii. Methodology
- iv. Statistical Design
- v. Outcome

LITERATURE CITED (New page)

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

GUIDELINES 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.

UVAS LOGO

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

OF

MASTER OF PHILOSOPHY/DOCTOR OF PHILOSOPHY (FONT 15)

IN

NAME OF THE DISCIPLINE

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

YEAR* (FONT 14)

*YEAR OF SUBMISSION OF HARD BIND THESIS

TITLE OF THESIS IN TWO TO THREE LINES (Font 16)

NAME OF STUDENT (Font 15)

REGISTRATION NO. (Font 15)



UNIVERSITY OF VETERINARY AND
ANIMAL SCIENCES LAHORE

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

OF

MASTER/DOCTOR OF PHILOSOPHY

(15 Font)

IN

NAME OF DISCIPLINE

UNIVERSITY OF VETERINARY AND ANIMAL SCIENCES

LAHORE (Font 16)

2022* (Font 14)

***Year of Submission of Final Hard Bind Thesis**

To,

**The Controller of Examinations,
University of Veterinary and Animal Sciences,
Lahore.**

We, the Supervisory Committee, certify that the content and form of the thesis submitted by _____, Regd. No. _____, have been found satisfactory and recommend it to be processed for evaluation by the External Examiner(s) for the award of the degree.

SUPERVISORY COMMITTEE:

Supervisor: -----
(Name)

Co-Supervisor -----
(Name)

Member: -----
(Name)

Member: -----
(Name)

CONTENTS

DEDICATION (The page of Dedication is optional)	i	(New Page)
ACKNOWLEDGMENTS (Brief and relevant)	ii	(New Page)
TABLE OF CONTENTS	iii	(New Page)
LIST OF TABLES	iv	(New Page)
LIST OF FIGURES	vi	(New Page)

SR. NO.	CHAPTERS	PAGE NO.
1.	INTRODUCTION	1
2.	REVIEW OF LITERATURE	3
3.	MATERIALS AND METHODS	18
4.	RESULTS	29
5.	DISCUSSION	73
6.	SUMMARY	89
7.	LITERATURE CITED	91

LIST OF TABLES (New Page)

TABLE NO.	TITLE	PAGE NO.
3.1		
3.2		
4.1		
4.2		
4.3		

LIST OF FIGURES (New Page)

FIGURE NO.	TITLE	PAGE NO.
3.2		
3.2		
3.3		
4.1		
4.2		

Instructions for the Synopsis / Thesis Write-Up Style

1. In the whole body of thesis / synopsis font Times New Roman, size 12, double line spacing and both right and left justified margins must be used
2. Page layout should be with Normal Margins (1" Top, Bottom, Right and Left), Size of the page should be A4 (8.27" x 11.69")
3. Single side of the page will be used for printing in the whole body of Thesis
4. To reduce the errors, whole document (Microsoft Program) should be typed while using the Show/Hide formatting symbol (¶)
5. Title of thesis should be same as Synopsis Memorandum
6. Roman page numbering (i-v) should be started at Dedication Page and Arabic page numbering (1,2,3...) should be started from Introduction to Literature Cited
7. *et al.* in the citation should be *in italics*
8. Captions for the Tables and Figures should be bold
9. Thesis should be written in chronological order (arrangement of events in their order of occurrence in time i.e. earliest to latest)
10. Review of Literature should be in paragraph form. Each paragraph should classify and evaluate the themes of the texts that are relevant to your thesis. Statement of Problem with objectives should be written at the end in the Review of Literature
11. Only authenticated scientific website should be quoted as a reference
12. In-text reference: In the body of the document (Introduction, Review of Literature, Materials and Methods and Discussion), refer to authors as follows: Smith and Jones (1992) or Smith and Jones (1990, 1992). If the sentence structure requires that the authors' names be included in parentheses, the proper format is (Smith and Jones 1982; Jones, 1988a, b; Jones *et al.* 1993). Where there are more than two authors of one article, the first author's name is followed by the abbreviation *et al.* (Smith *et al.* 1982). More than one article listed in the same sentence of text must be in chronological order first and alphabetical order for two publications in the same year (Annexure I)
13. In the Literature Cited section: all references cited in the body of the document should be enlisted (see Annexure I).

- a) References shall first be listed alphabetically by author(s) "last name(s)", and then chronologically
 - b) The year of publication follows the authors' names. As with text citations, two or more publications by the same author or set of authors in the same year shall be differentiated by adding lowercase letters after the date. The dates for papers with the same first author that would be abbreviated in the text as *et al.*, even though the second and subsequent authors differ, shall also be differentiated by letters.
 - c) All authors "names" must appear in the Literature Cited section.
 - d) Journals shall be abbreviated according to the conventional ISO abbreviations given in the journals database of the National Library of Medicine (<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=journals>); One-word titles must be spelled out
 - e) Following information must be provided for each reference: Author or authors' Year of publication; Title of paper/book; Abbreviated name of journal; Volume (issue number); inclusive pages. For books and proceedings, name of publisher and location is needed
14. Header should carry heading of the chapter at the right end except 1st page and Footer should carry the page number in the center
 15. Page numbering will be started from Introduction onward
 16. Heading of all the chapters (INTRODUCTION, MATERIALS AND METHODS etc) should be as per sample shown below with font size CHAPTER (Font 12 Times New Roman) and INTRODUCTION (Font 14, Times New Roman)
 17. CSE Citation Sequence Style (UVAS Style) with hanging indent will be used for quoting references preferably by Endnote

PhD Thesis New Format (Paper Format)

Advanced Studies & Research Board has approved the new Ph.D Thesis format along with existing thesis format. The new format is as under:

- Dedication (Optional)
- Acknowledgments (Brief and relevant)
- List of Tables
- List of Figures
- List of Appendices
- Abstract (without headings)

Chapter 1. Introduction (General Information)

Chapter 2. Review of Literature (References)

Chapter 3. Experiment 1: (Introduction, Materials and Methods, Results, Discussion and References, Tables and Figures)

Chapter 4. Experiment 2: (Introduction, Materials and Methods, Results, Discussion and References, Tables and Figures)

Chapter 5. Experiment 3: (Introduction, Materials and Methods, Results, Discussion and References, Tables and Figures)

Chapter 6. Summary (without headings)

CHAPTER 7

LITERATURE CITED

- Bassett TJ, Zueli KB. 2000. Environmental discourses and the Ivorian Savanna. *Ann Assoc Am Geogr.* 90(1): 67-95.
- Cochran WW, Mouritsen H, Wikelski M. 2004 Apr 16. Migrating songbirds recalibrate their magnetic compass from twilight cues. *Science.* 304: 405-408.
- Evans S, Smith J. 2000. Ecotourism in tropical rainforests: an environmental management option for threatened resources? In: Font X, Tribe J, editors. *Forest tourism and recreation: case studies in environmental management.* 4th ed. Wallingford (GB): CABI Publishing. p. 127-142.
- Field IC, Bradshaw CJA, Burton HR, Sumner MD, Hindell MA. 2005. Resource partitioning through oceanic segregation of foraging juvenile southern elephant seals (*Mirounga leonina*). *Oecologia.* 142: 127-133.
- Grossman E. 2006. High tech trash: digital devices, hidden toxics, and human health [Internet]. Washington (DC): Island Press; [cited 2008 Jul 22]. Available from: <http://site.ebrary.com/login.ezproxy.library.ualberta.ca/lib/albertaac/Doc?id=1018-2341>
- Moore D. 2002. Fungal control of pests. In: Pimental D, editor. *Encyclopedia of pest management.* New York (NY): Marcel Dekker. p. 320-324.
- NCBI Bovine genome resources [Internet]. [date unknown]. Bethesda (MD): National Center for Biotechnology Information [NCBI]; [cited 2004 Dec 22]. Available from: <http://www.ncbi.nlm.nih.gov/genome/guide/cow/>
- Roberts C, Varty B, Lucas V. 2004. *Writing for the biological sciences.* 10th ed. Toronto (ON): Addison-Wesley. p. 73-76.
- Sarkar T, Zhao W, Sarkar NH. 1995. Expression of jun oncogene in rodent and human breast tumors. *J Biology* [Internet]. [cited 2004 Dec 22]; 1(1): [about 8 screens]. Available from: <http://epress.comlw3jbio/voll/sarkar/sarkar.html>
- Shakelford RT. 1978. *Surgery of the alimentary tract.* Philadelphia (PA): W.B. Saunders. Chapter 2, Esophagoscopy; p. 29-40.

- Smart 1M. 2005. Ecological sampling techniques: species-area relationships and species diversity. BIO 251 Laboratory Handouts. Camrose (AB): Augustana Faculty, University of Alberta.
- Troyer G. Sensory phantoms: dealing with the loss of a limb [Internet]. 2009. [Place of publication unknown]: Canadian Broadcasting Corporation [updated 2009 Jan 5; cited 2009 Jan 13] . Available from: www.cbc.ca/health/story/2009/01105/f-troyer-phantompain.html
- Wagner FH. 1980. Wildlife of the deserts. New York (NY): H.N. Abrams. 231 p.
- World health report 2004: changing .history [Internet]. 2004. Geneva (CH): World Health Organization [WHO]; [cited 2008 Jul 22]. 170 p. Available from: http://www.who.int/entity/whr/2004/en/report04_en.pdf
- Wykoff WR. 2002. Measuring and modeling surface area of ponderosa pine needles. Can J For Res. 32: 1-8.
- Yencho GC, McCord PH, Haynes KG. 2008. Internal heat necrosis of potato - a review. Am J Potato Res [Internet]. [cited 2008 Jul 22]; 85(1): 69-76. Available from: <http://www.springerlink.com/login.ezproxy.library.ualberta.ca/content/915131u45576313I/fulltext.html>

**UNIVERSITY FACULTIES / INSTITUTES / COLLEGES OFFERING
POSTGRADUATE DEGREE PROGRAMS**

A. FACULTY OF VETERINARY SCIENCE

- i. Department of Veterinary Medicine
- ii. Department of Veterinary Surgery
- iii. Department of Small Animal Clinical Sciences
- iv. Institute of Microbiology
- v. Department of Parasitology
- vi. Department of Pathology
- vii. Department of Epidemiology & Public Health
- viii. Department of Theriogenology

B. FACULTY OF ANIMAL PRODUCTION & TECHNOLOGY

- i. Department of Animal Nutrition
- ii. Department of Dairy Technology
- iii. Department of Livestock Management
- iv. Department of Animal Breeding and Genetics
- v. Department of Poultry Production
- vi. Department of Meat Science & Technology
- vii. 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
- v. Department of Food Sciences & Human Nutrition
 - a. Food and Nutrition
 - b. Food Safety and Control
- vi. Department of Environmental Sciences

INSTITUTE OF BIOCHEMISTRY & BIOTECHNOLOGY

- i. Molecular Biology & Biotechnology, Forensic Science
- ii. Biochemistry

INSTITUTE OF PHARMACEUTICAL SCIENCES

- a. Pharmaceutics
- b. Pharmaceutical Chemistry
- c. Pharmacology & Therapeutics
- d. Pharmacy Practice

D. FACULTY OF FISHERIES & WILDLIFE

- i. Department of Fisheries & Aquaculture
 - a. Zoology
 - b. Fisheries and Aquaculture
- ii. Department of Wildlife and Ecology
- iii. Department of Biological Sciences
 - a. Discipline of Botany

E. FACULTY OF LIFE SCIENCES BUSINESS MANAGEMENT

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

F. JHANG CAMPUS:

- i. Department of Pathobiology
 - a) Microbiology
 - b) Parasitology
 - c) Pathology
- ii. Department of Clinical Sciences
 - a) Clinical Medicine
- iii. Department of Basic Sciences
 - b) Biochemistry.

iv. Department of Animal Sciences

v. Department of Social Sciences

G. NAROWAL CAMPUS:

i. Department of Pathobiology

a) Microbiology

b) Pathology

ii. Department of Clinical Sciences

iii. Department of Basic Sciences

iv. Department of Animal Sciences

v. Department of Social Sciences

FACULTY OF VETERINARY SCIENCE

Faculty Overview:

<https://uvas.edu.pk/academics/faculties/FVS/overview/>

Dean's Message

<https://uvas.edu.pk/academics/faculties/FVS/dean/>

Department of Veterinary Medicine (DVM)

<https://uvas.edu.pk/academics/faculties/FVS/clinical-medicine/>

Department of Veterinary Surgery

<https://uvas.edu.pk/academics/faculties/FVS/VSPS/index.php>

Department of Small Animal Clinical Sciences

<https://uvas.edu.pk/academics/faculties/FVS/SACS/>

Department of Parasitology

<https://uvas.edu.pk/academics/faculties/FVS/dep-parasitology/>

Department of Pathology

<https://uvas.edu.pk/academics/faculties/FVS/pathology/>

Department of Theriogenology

<https://uvas.edu.pk/academics/faculties/FVS/theriogenology/>

Department of Epidemiology & Public Health

<https://uvas.edu.pk/academics/faculties/FVS/epidemiology-public-health/>

Institute of Microbiology

<https://uvas.edu.pk/institutes/microbiology/index.htm>

FACULTY OF BIO-SCIENCES

Faculty Overview

<https://uvas.edu.pk/academics/faculties/FBS/overview/>

Dean's Message

<https://uvas.edu.pk/academics/faculties/FBS/dean/>

Institute of Biochemistry & Biotechnology (IBBT)

<https://uvas.edu.pk/institutes/bio-biochemistry/index.html>

Institute of Pharmaceutical Sciences (IPS)

<https://uvas.edu.pk/institutes/ips/index.htm>

Department of Anatomy and Histology

<https://uvas.edu.pk/academics/faculties/FBS/anatomy/>

Department of Pharmacology & Toxicology

<https://uvas.edu.pk/academics/faculties/FBS/pharmacology/>

Department of Physiology

<https://uvas.edu.pk/academics/faculties/FBS/physiology/index.htm>

Department of Food Science & Human Nutrition (FSHN)

<https://uvas.edu.pk/academics/faculties/FBS/Food-science-human-nutrition/>

Department of Environmental Sciences

<https://uvas.edu.pk/academics/faculties/FBS/ES/index.htm>

FACULTY OF ANIMAL PRODUCTION & TECHNOLOGY

DEPARTMENT OF ANIMAL NUTRITION

Faculty Overview

<https://uvas.edu.pk/academics/faculties/FAPT/overview/>

Dean's Message

<https://uvas.edu.pk/academics/faculties/FAPT/dean/>

Department of Livestock Management

<https://uvas.edu.pk/academics/faculties/FAPT/livestock-management/index.htm>

Department of Animal Breeding & Technology

<https://uvas.edu.pk/academics/faculties/FAPT/Animal-breeding/index.php>

Department of Poultry Production

<https://uvas.edu.pk/academics/faculties/FAPT/PP/>

Department of Animal Nutrition

<https://uvas.edu.pk/academics/faculties/FAPT/animal-nutrition/>

Department of Dairy Technology

<https://uvas.edu.pk/academics/faculties/FAPT/DT/index.htm>

Department of Meat Science & Technology

https://uvas.edu.pk/academics/faculties/FAPT/Meat_Tech/index.htm

FACULTY OF FISHERIES AND WILDLIFE

Faculty Overview

<https://uvas.edu.pk/academics/faculties/faculty-fisheries/overview/>

Dean's Message

<https://uvas.edu.pk/academics/faculties/faculty-fisheries/dean/>

Department of Fisheries & Aquaculture

<https://uvas.edu.pk/academics/faculties/faculty-fisheries/fisheries-aqua/>

Department of Wildlife & Ecology

<https://uvas.edu.pk/academics/faculties/faculty-fisheries/Wildlife-Ecology/>

Department of Biological Sciences

<https://uvas.edu.pk/academics/faculties/faculty-fisheries/Biological-Sciences/index.php>

FACULTY OF LIFE SCIENCES BUSINESS MANAGEMENT (FLSBM)

UVAS Business School

<https://uvas.edu.pk/academics/faculties/FLSBM/index.php>

Department of Economics and Business Management

https://uvas.edu.pk/academics/faculties/FLSBM/eco_business_management/index.php

COLLEGE OF VETERINARY & ANIMAL SCIENCES, JHANG

Principal's Message

https://uvas.edu.pk/other_campuses/CVAS/index.htm

Department of Pathobiology

https://uvas.edu.pk/other_campuses/CVAS/departments/pathobiology/index.htm

Department of Clinical Sciences

https://uvas.edu.pk/other_campuses/CVAS/departments/clinical-science/index.htm

Department of Basic Sciences

https://uvas.edu.pk/other_campuses/CVAS/departments/basic-sciences/index.htm

Department of Animal Sciences

https://uvas.edu.pk/other_campuses/CVAS/departments/animal-sciences/index.htm

**KHAN BAHADAR CHOUDHRY MUSHTAQ AHMED COLLEGE OF
VETERINARY & ANIMAL SCIENCES, NAROWAL**

Principal's Message

https://uvas.edu.pk/other_campuses/Narowal/principal-message.htm

Department of Pathobiology

https://uvas.edu.pk/other_campuses/Narowal/departments/pathobiology/

UNIVERSITY LIBRARY

https://uvas.edu.pk/uvas_libraries/

INFORMATION TECHNOLOGY (I.T) CENTER

<https://uvas.edu.pk/centers/IT-center/index.htm>

UVAS HOSTELS

<https://uvas.edu.pk/society-club/hostel.htm>

DIRECTORATE OF SPORTS

<https://uvas.edu.pk/society-club/sports.htm>