Department of Anatomy

Study Guide for M. Phil. Anatomy

Sharif Medical & Dental College, Lahore

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PREFACE

This study guide aims to help students fully comprehend the curriculum and its objectives. Textbooks are widely regarded as the most important learning resource, they are augmented by facilitation and practical guidance. With a well-designed study guide, a student is acquainted with the curriculum and assessment modalities. And shall have insight into the timeline of the academic year.

The annual schedule of M.Phil. Anatomyis as per guidelines provided by the UHS. The duration of the M.Phil. (Anatomy) course is of two years. Postgraduate students shall be taught Anatomy (compulsory) and 1st minor (elective) subjects in their firstacademic year. The research work and thesis writing shall be completed in 2nd academic year with 2nd minor (elective) subject. The Anatomy Department has created a course plan that fits our institution's vision and the UHS guidelines. This study guide includes a comprehensive list of the sections to be taught in the department, the time allocated for each, and the teaching techniques employed such as demonstrations, lectures, journal club meetings,presentations, workshops and research. The schedule of the assessments planned for the entire year has also been highlighted along with the marks distribution for the professional examinations. Learning resoources are attached at the end.

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VISION & MISSION OF UHS

Qualitative and Quantitative Revolution in Medical Education and Research through Evolution, thereby improving Health Care delivery to Populace.

UHS shall be the innovative global center of excellence in learning and research, supporting a community of scholars and professionals committed to serving society, promoting the development of students to reach their true potential in becoming competent, ethical, caring, and inquiring health professionals for the benefit of the country and the wider world.

VISION & MISSION OF PGMI

Vision

"To be a leading institution in postgraduate medical education, fostering excellence, innovation, and compassionate healthcare leadership through transformative learning and research."

Mission

Sharif Postgraduate Medical Institution is dedicated to advancing healthcare through excellence in postgraduate medical education, research, and clinical practice. Our mission is to cultivate competent, compassionate, and ethical healthcare professionals who contribute to the betterment of society through **community-oriented**, **high-quality patient care**, **impactful research**, and **lifelong** learning.

We are committed to fostering an environment of innovation, collaboration, and professional growth, ensuring our postgraduates are equipped to address national and global healthcare challenges with expertise and integrity.

GENERAL OVERVIEW

Goals of M.Phil. Anatomy Program

1. **Competency Development**: The fundamental requirement of these curricula is to apply the knowledge from the basic disciplines in every day. The graduate will be able to apply to medical practice biomedical scientific principles, methods and knowledge relating to: General Anatomy, Micro Anatomy, Developmental Anatomy and Regional Anatomy. Therefore, the resident can explain normal human structure and functions.
2. **Enhanced Access to Specialty Training**: Provide a well-structured pathway to advanced professional training, distinguishing it from other basic medical subjects.
3. **Flexible Learning Framework**: Offer residents the flexibility to benefit from mentorship under a diverse team of experienced instructors, fostering a holistic learning environment.
4. **Research and Scholarly Contribution**: Foster an academic culture by enabling residents to undertake impactful research projects, critically appraise scientific literature, and contribute to the advancement of medical science through publications and presentations at professional forums.

This program is designed to ensure excellence in medical expertise, academic rigor, and research innovation, producing highly competent Anatomists.

Aims and Objectives

Afterthe course, the PG trainee will be able to

- Deliver good communication and teaching skills to graduate and postgraduate students
- Train PG students in research methodologies and enable them to conduct research independently for in-depth study
- Connect anatomical knowledge to clinical practices, enhancing the understanding of human diseases from anatomical perspectives.

- Encourage collaboration with other disciplines like pathology, molecular biology and human genetics.

Alignment of objectives with university mission statement

The key objectives are consistent with UHS mission, values and strategic vision. This is achieved by skilled learning, research and innovation and feedback evaluation of programs for continuous improvement.

TIME ALLOCATION FOR ACADEMIC ACTIVITIES

Duration of M.Phil. Anatomy:	2 years
Total Credit Hours (as required by PMDC):	30
Course work credit hours:	24
Research work/thesis:	6
Working days:	8:30 am to 2:30 pm (except Friday)
	Friday: 8:30 am to 12:30 pm

PLANNED TEACHING ACTIVITIES OFM.PHIL. ANATOMY

In the1st academic year, PMDC has assigned 30hours to the compulsory subject (Anatomy). To help postgraduate students, these hours are distributed among numerous modes of information transfer (MITs). These MITs are intended to assist students to correlate normal anatomical structures to their clinical importance

macroscopically, microscopically, and developmentally, since the study of anatomy is divided intosections of gross anatomy, microanatomy (Histology), general anatomy, and developmental anatomy (embryology).

Large Group Interactive Sessions (LGIS)

The total number of hours allotted for LGIS has been divided across the general anatomy, embryology, neuroanatomy, and microanatomy sections, totaling 30 hours. The Professor, Associate Professors, and Assistant Professors will deliver these lectures. The students are directed to prepare presentations and participate accordingly. The presentations will list the objectives of the lecture at the start to focus on the study from the recommended books.

Practical classes

In the first year of their coursework, there will be one practical class every week, focused on histology. The class is 2 hours long and the students are taught one component of normal human histology each week. The students are given the task to study the tissue thoroughly and are then instructed to observe the slides under a microscope.

Small-Group Discussions (SGDs)

SGDs are scheduled four times a week and consist of various activities such as dissection, demonstrations of dissected specimens and models, presentations, assignments, and gross anatomy classes. All the demonstrations are interactive with aim of developing oral proficiency and expertise in the subject. All these demonstrations are supervised by Associate Professor or Assistant Professor. The students are directed to observe the dissected specimens to understand the

knowledge of the normal gross anatomy structures, bones, and radiology to become competent teachers, facilitators and researchers.

Problem based learning (PBL)

Learning process is driven by a problem relevant to the field of Anatomy and multidisciplinary approaches including pathology, molecular biology physiology and genetics are required to solve it by working in a group.

Journal Club Meetings

Journal club meetings will be held once a week. Students will be directed to search out recent anatomy-related articles, present and discuss them with their colleagues. This practice aims to enhance ideas that can be applied to the attendee's research work.

Biostatistics

Biostatistics lectures will be held twice a week and delivered by expert statisticians. These lectures aim to provide a strong background of research methodology and equip the students with statistical skills so that the students will be able to collect, analyze the data, and interpret the results in the context of human health.

Research and Thesis Writing

Research and thesis writing is completed by the end of 2nd academic year. Supervisors and co-supervisors will guide the students throughout the research. After multiple reviews of the thesis by supervisors and co-supervisors, final copy is submitted to assessors for evaluation. One from outside Pakistan and two from

within Pakistan. Upon approval by the assessors final copy will be submitted to the examination branch of the university. A panel of examiners will be selected by the University for Public Defense which include one internal and two externals.

Mandatory Workshops and Conferences

Computer skills (teaching strategy – hands on workshop) will be organized so that students are able to

- Develop basic skills in operating software
- To present scientific data at national and international level

COURSE DESCRIPTION

Nomenclature of the Degree Program

The proposed degree program is designated as **M.Phil. Anatomy**, a globally recognized and established nomenclature upheld for several decades.

Course Title

Master of Philosophy

Training Center

The program's training will be conducted in the Department of Anatomy at Sharif Medical and Dental College, Lahore, accredited by the University of Health Sciences (UHS), Lahore.

Program Duration and Structure

The M.Phil. Anatomy spans two (2) years, encompassing structured training under the supervision of accredited faculty within recognized departments.

1. Course work (First Year):

- Completion of course work of one major (compulsory) subject and one (1st) minor (elective) subject.
- Development of a research project and preparation of a synopsis.

2. Research thesis writing (Final Year):

- Submission and approval of the research synopsis by the Advanced Studies

and Research Board (ASRB).
- Completion of second minor
- Completion of research work and thesis writing.

3. Competency-Based Framework:

- The program is structured to ensure the development of both generic and specialty-specific competencies, monitored through Continuous Internal Assessments.

Admission Criteria:

Applications will be invited through advertisements in print and electronic media, clearly specifying deadlines and entry examination schedules.

Eligibility Requirements:

1. **Educational Qualification**: MBBS/BDS or an equivalent qualification recognized by the Pakistan Medical and Dental Council (PMDC).
2. **House Job Experience**:
    - A valid certificate confirming one year of House Job in a PMDC-recognized institution.
3. **PMDC Registration**: A valid certificate of permanent or provisional registration with PMDC is mandatory.

Registration and Enrollment

- The trainee-to-supervisor ratio shall not exceed **2:1 per annum** for all postgraduate programs.
- Trainees are enrolled and subsequently registered with UHS as per university regulations.

Accreditation Requirements for Training Institutions

Institutions offering the M.Phil. Anatomy program must ensure compliance with the following standards:

A. Faculty

- Availability of adequately qualified teaching staff, meeting PMDC guidelines.

B. Infrastructure and Facilities

- Sufficient infrastructure, including classrooms equipped with audiovisual aids, demonstration rooms, multimedia and postgraduate laboratories.

C. Library Resources

- Well-equipped departmental libraries containing up-to-date editions of recommended texts, reference books, and national and international journals.

Monitoring and Compliance:

- Accreditation may be **temporarily or permanently suspended** by the University if institutions fail to meet prescribed standards for training.
- Institutions must submit comprehensive training plans for resident education and maintain detailed monthly documentation of training activities and evaluations.
- The University reserves the right to conduct **surprise inspections** to ensure compliance and take appropriate corrective actions where necessary.

This proposal highlights the M.Phil. Anatomy program's alignment with international best practices and UHS regulations. The structured training, rigorous assessment mechanisms, and adherence to quality standards aim to cultivate highly skilled professionals in the field of basic medical sciences.

Curriculum design

Besides academic Anatomy curriculum, the following is integrated into the curriculum

- Research and literature review according to modern sciences.
- Educators capable of teaching medical and anatomical discipline.
- Leadership and professionalism

Teaching Modalities

- Lectures.
- Seminar presentations and journal club presentations.
- Group discussions.
- Grand rounds.
- Clinico-pathological conferences.
- SEQ as assignments on the content areas.
- Skill teaching by giving demonstrations and presentations
- Self-study, assignments, and use of the internet.

Admission Process

Eligibility --> Entry Exam --> Selection --> Enrollment at UHS

Year 1 (Part 1)

- Orientation

- course work major and 1st minor subject

- Research Synopsis Approval

Examination of major and 1st minor

Year 2 (Part 2)

- Research Synopsis Approval by ASRB

- Research work and thesis writing under Supervisor

Defence and 2nd minor subject Examination

Completion

Degree Awarded (M.Phil. Anatomy)

TRAINING PROGRAM FOR DEPARTMENT OF ANATOMY

Course Work (First Year)

Mode of teaching curriculum

Annual System

Main objectives

- Assigning responsibilities of taking demonstrations, practicals and lectures to undergraduate students
- Attending and participating in mandatory workshops, conferences and seminars
- Peer assigned learning
- Problem-based learning (PBL)

Responsibilities of postgraduate trainees

The PG trainees should be

- Lifelong learner
- Researcher
- Educator
- Presenter at national and international level

Major subject (Anatomy)

Includes General anatomy, Gross anatomy, Histology and Embryology

Elective (First Minor)

Students will select one of the following subjects as a minor subject

General Pathology

Physiology

Course Content of Major Subject (Anatomy)

General Anatomy

Schedule of General Anatomy Lectures

S. No	Topic Lecture
1.	Brief History and Different Disciplines of Anatomy
2.	Body Organization, Skin
3.	Bone
4.	Cartilage
5.	Joint
6.	Muscles
7.	Tendon, Bursae, Aponeurosis, Fascia, Ligaments
8.	Cardio Vascular System
9.	Lymphatic System
10.	Nervous System
11.	Autonomic Nervous System
12.	**Test**

Schedule ofEmbryology Lectures

S. No	Topic Lecture
1.	Cell Division – Mitosis, Meiosis
2.	Female Reproductive Cycle
3.	Gametogenesis
4.	Fertilization
5.	Gastrulation
6.	Notocord
7.	Neurulation
8.	Somites
9.	Intraembryonic Coelom
10.	Chorionic Villi
11.	Folding of Embryo
12.	Derivatives of 3 Germ Layers, Estimation of Fetal Age
13.	Placenta, PlacentalCirculation& Malformations

14.	Fetal Membranes
15.	Multiple Pregnancies
16.	Perinatology
17.	Teratogenesis& Genetic Abnormalities
18.	**Test**
19.	Pharyngeal Arches,
20.	Pharyngeal pouches and applied
21.	Thyroid gland, Thymus, Parathyroid
22.	Tongue & salivary glands
23.	Face
24.	Nasal cavities & Para nasal sinuses
25.	Palate
26.	Tooth, Congenital Anomalies
27.	Esophagus, Lungs
28.	Larynx, trachea
29.	Skull
30.	Spinal cord
31.	CNS
32.	ANS,PNS
33.	Eye
34.	Ear
35.	**Test**

Schedule of Histology Lectures

S. No	Lecture Topics	Practical topic
1.	Introduction, Cell	Microscope + Staining Techniques
2.	Cell organelles	Slide staining
3.	Nucleus	Artifacts, cell shapes
4.	Epithelium-I	Epithelim
5.	Glands-I	Glandular epithelium
6.	Connective Tissue Proper	Connective tissue
7.	Immune System	Spleen
8.	**Test**	**OSPE**

9.	Lymphoid Organs	Tonsils, lymph node
10.	Integumentary system	Thick and thin skin
11.	Cartilage	Cartilage
12.	Bone	Bone
13.	Muscle	Muscles
14.	Blood	Erythrocytes, neutrophils, lymphocytes
15.	Nervous Tissue	Nerve, ganglia
16.	Cerebrum, cerebellum, spinal cord	Cerebrum, cerebellum, spinal cord
17.	Circulatory system	Vein, artery
18.	**Test**	**OSPE**
19.	Respiratory system	Larynx, trachea, epiglottis
20.	Gastrointestinal system	Gastrointestinal system
21.	Endocrine System	Endocrine System
22.	Urinary system	Urinary system
23.	Male reproductive system	Male reproductive system
24.	Female reproductive system	Female reproductive system
25.	Special senses	Special senses
26.	**Test**	**OSPE**

Schedule of Neuroanatomy Lectures

S. No	Topic of lecture	Topic of practical
1.	Classification of nervous system	Processing and staining of nervous tissue
2.	Receptors, neurons, synapses	Cross section of cervical spinal cord
3.	Spinal cord and contents of vertebral canal	Cross section of thoracic spinal cord
4.	Spinal cord: regional gross structure, distribution of neurons in grey matter	Cross section of lumber spinal cord
5.	Pyramidal system	Rexedlaminae of spinal cord
6.	Extrapyramidal system	Dissection of spinal cord
7.	Blood supply of spinal cord	Infarct hemorrhages on CT scan
8.	Lesion of spinal cord	MRI spine

9.	Meninges of brain and spinal cord	Meninges of brain
10.	**Test**	**OSPE**
11.	Medulla oblongata	Medulla cross-section
12.	Pons	Pons cross section
13.	Midbrain	Midbrain cross section
14.	Cranial nerves 1, 2, 8	Connections of colliculi
15.	Cranial nerves 5,7	Cranial nerve examination
16.	Cranial nerves 3,4,6,12	Cranial nerve examination
17.	Cerebellum	Cerebellum (specimen/model)
18.	Cerebrum	Cerebrum (specimen/model)
19.	Blood supply of brain and spinal cord	CT brain
20.	**Test**	**OSPE**
21.	Visual pathway	Revision
22.	Auditory pathway	Revision
23.	Vestibular pathway	
24.	Thalamus	
25.	Hypothalamus	
26.	Subthalamus, metathalamus, epithalamus	
27.	Basal nuclei	
28.	Limbic system	
29.	Reticular system	
30.	Autonomic system	
31.	Pain pathway	
32.	CSF and ventricular system	
33.	**Test**	

Gross Anatomy

Upper Limb Teaching Schedule

S. No	Topic of presentation			
	Day1	**Day2**	**Day 3**	**Day4**
1.	Pectoral region	Axilla	Scapular region	Arm
2.	Arm	Forearm	Forearm	Forearm
3.	Hand	Hand	Hand	Shoulder girdle
4.	Shoulder joint	Elbow joint	Wrist joint	Hip joint
5.	Smaller joints of hands	Lymphatic drainage of upper limb	Venous drainage of upper limb	**Test**

LowerLimb Teaching Schedule

S .No	Topic of presentation			
	Day1	**Day2**	**Day 3**	**Day4**
6.	Front of thigh	Front of thigh	Medial side of thigh	Gluteal region
7.	Gluteal region	Popliteal fossa	Back of thigh	Front of leg
8.	Lateral and medial side of thigh	Back of leg	Dorsum of foot	Sole of foot
9.	Sole of foot	Venous drainage of lower limb	Lymphatic drainage of lower limb	Hip joint
10.	Knee joint	Ankle joint	Smaller joints of foot & arches of foot	**Test**

Head & NeckTeaching Schedule

S. No	Topic of presentation			
	Day1	**Day2**	**Day 3**	**Day4**
11.	Skull	Scalp and Face	Parotid gland & Parotid Region	Temporal & Infratemporal fossa
12.	Orbit and its contents,	2nd Cranial nerve & testing	Muscles of mastication & Mandibular nerve	Temporomandibular joint & Clinical correlates
13.	Cranial Cavity	Pterygopalatine fossa and Ganglion	Maxillary Artery & Nerve	Meninges, Sub-Arachnoid granulations Sub-Arachnoid Cistern
14.	Dural venous sinuses, Emissary veins, Hypophysiscerebri	3rd , 4th& 6th Cranial nerves&testing	Ciliary ganglion, Lacrimal apparatus, Deep cervical fascia	11th Cranial nerve, deep cervical fascia
15.	Triangles of neck	Triangles of neck	Cervical vertebrae & its joints	Supra &infrahyoid muscles, Vertebral artery
16.	Prevertebral muscles & Scalene muscles	Cervical plexus & Cervical Sympathetic Trunk	Thyroid, parathyroid & Thymus gland	Subclavian artery
17.	Venous and lymphatic drainage of the neck	Submandibular gland	Nasal cavity, Nasal septum, 1st C.N	Sublingual gland &Submandibular ganglion
18.	Paranasal sinuses, Oral cavity	Soft palate and its muscles	Pharynx	Larynx
19.	Tongue, 10th and 12th Cranial nerve	Ear	**Test**	OSPE

Thorax Teaching Schedule

S. No	Topic of presentation			
	Day1	**Day2**	**Day 3**	**Day4**
20.	Walls of thorax	Thoracic cavity	Lungs	Lungs
21.	Mediastinum	Mediastinum	Pericardium	Heart
22.	Heart	Aorta	Superior vena cava	Pulmonary trunk
23.	Trachea	Thoracic duct	**Test**	**OSPE**

Abdomen & PelvisTeaching Schedule

S. No	Topic of presentation			
	Day1	**Day2**	**Day 3**	**Day4**
24.	Anterior Abdominal wall	Anterior Abdominal wall	Peritoneum	Peritoneum
25.	Oesophagus	Stomach	Stomach	Small intestine
26.	Small intestine	Large intestine	Large intestine	Coeliac trunk
27.	Superior mesenteric artery and vein	Ingerior mesenteric artery and vein	Liver	Liver
28.	Gall bladder	Pancreas	Spleen	Kidney & ureter
29.	Kidney & ureter	Suprarenal glands	Posterior abdominal wall	Posterior abdominal wall
30.	Perineum	Perineum	Pelvic floor	Pelvic cavity
31.	Urinary bladder	Urethra	Female reproductive organs	Female reproductive organs
32.	Male reproductive organs	Male reproductive organs	Rectum and anal canal	Rectum and anal canal
33.	Pelvic wall	Joints of pelvis	**Test**	**OSPE**

Biostatistics and Research Methods

S. No	Topic Lecture
1.	Orientation about QEC Department Introduction to Biostatistics and Research
2.	Steps of Research
3.	Selection of Research Topic and Literature Review
4.	Study Design Observational and Experimental
5.	Installation of SPSS 20 and EndNote 7 software
6.	Sample Size Determination
7.	Sampling Techniques Types of Data and variables Measurement Scales Descriptive Statistics, Graphs And Charts
8.	**Mid-Test of Biostatistics**
9.	Presentations
10.	Analysis of Numerical data Parametric Tests
11.	Non-parametric Tests
12.	Hands-on SPSS Training Session

13.	Correlation Analysis
14.	Analysis of Categorical Data
15.	Hands-on SPSS Training Session
16.	Discussion
17.	**Test**

Mandatory workshops and conferences

Computer skills (teaching strategy – hands on workshop)

Main objectives

Develop basic skills in operating softwares

Able to present scientific data at national and international level

TIME TABLE 1ST YEAR BDS SMDC, LAHORE

SHARIF MEDICAL & DENTAL COLLEGE

TIME TABLE M. PHIL (ANATOMY)

S.M&D.C No/ /Path/ /2024 Dated:

Day & Time	08:30am - 09:30am	09:30am - 10:30am	10:30am - 11:30am	11:30am - 02:30pm	
Monday	Developmental Anatomy Lecture	Self Direct Learning	Developmental Anatomy Practical	Teaching & Traning Dissection Hall	
Tuesday	08:30am - 09:30am	09:30am - 10:30am	10:30am - 11:30am		01:30am - 02:30pm
	Gross Anatomy Lecture	Neuroanatomy Lecture	Teaching & Traning Dissection Hall		Physiology Lecture
Wednesday	08:30am - 09:30am	09:30am - 10:30am	10:30am - 11:30am	11:30am - 02:30pm	
	Gross Anatomy Lecture	Microbiology Lecture	Biostatistics Lecture	Teaching & Traning Dissection Hall	
Thursday	08:30am - 09:30am	09:30am - 10:30am	10:30am - 11:30am		01:30am - 02:30pm
	Gross Anatomy Lecture	CPC	Teaching & Traning Dissection Hall		Physiology Lecture
Friday	08:30am - 09:30am	09:30am - 10:30am	10:30am - 11:30am	11:30am - 12:30pm	
	Student Presentations	Research Writing	Neuroanatomy Practical	Teaching & Traning Dissection Hall	----------
Saturday	08:30am - 09:30am	09:30am - 10:30am	10:30am - 11:30am	11:30am - 02:30pm	
	Jourbnal Club	Microbiology Lecture	Microbiology Practical	Dissection Dissection Hall	

ASSESSMENT PLAN

Following modes of assessment are planned for 1st academic year of M.Phil.in the subject of Anatomy. This plan has been designed keeping in view the university curriculum and hopefully will facilitate the students in preparing for professional examinations in the subject.

Component Tests:

These will be conducted at the completion of every Component (General Anatomy/Embryology/Histology). The test will comprise of MCQs and SEQs on the pattern of university examinations.

Practical OSPE Tests

To prepare the students for practical examinations at least two OSPE tests will be conducted on the pattern of university examinations.

Pre-annual Exam

This will be undertaken in coordination with elective departments, exactly following the format of university professional examinations. It will comprise of MCQs, SEQs, OSPE and Viva voce.

Comprehensive Examination

The comprehensive exam assesses the student's competency and is conducted by the university according to the UHS pattern at the end of First year.

Table of Specification

Major compulsory course:

MCQs	SEQs	Practical & Viva Voce	Total
150	150	100	400

1st Minor (elective) course:

1st Minor	MCQs	Total
Physiology/General Pathology	100	100

OSPE

Gross Anatomy, Neuroanatomy and Embryology.

1. Total No. of stations 10, each station will have 2.5 marks and 05identification spots.
2. Each station shall be given 2 min(20 minutes).
3. Total marks shall be 25

Histology OSPE

1. There shall be 10 slides fixed on 10 microscopes.
2. They will move from one to the next slide in a predetermined direction.
3. For each station one minute shall be given, students will give point/points of identifications for each slide
4. Total number of identifications spots 10
    a. Each spot will be given 01 mark (0.5 marks for identification and 2 points of identification, 0.25 marks each
    b. Total marks allocated shall be: 10

STAFF CONTACTS ANATOMY DEPARTMENT

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RESEARCH WORK (2nd YEAR)

Preparation and approval of synopsis

Students will finalize their topic of research and prepare synopsis as per format of UHS under the guidance of supervisor and co supervisors. The students then get approval of their synopsis from Academic and Research Supervisory Committee (ARSC), Ethical Review Board (ERB), and board of advanced study and Research Board (ASRB).

Second Minor (elective) Course Work

Minor subject provide students with an opportunity to gain knowledge and explore connections between different disciplines. It will help students to diversify their research and flexibility to explore different theoretical frameworks or methodologies, which can enrich their research.

The students will elect one of the following subjects as a second minor

- Microbiology
- Immunology
- Chemical Pathology
- Cytogenetics and Molecular Biology

Thesis and Research work

After passing and completion of course work and passing of comprehensive examination with more 60% marks, the students will be allowed to do their research.

Thesis supervision

- Supervisor & co-supervisors should be the full-time faculty members of the university and must be from the specialty that the student is enrolled.
- Eligibility of the Supervisor/co-supervisor will be in line with the

HEC/PM&DC guidelines.

- Principal may also appoint a co-supervisor from any other related department to provide the link if the research is of an interdisciplinary nature or if the research is being undertaken in collaboration with another organization.

Thesis writing policy

The thesis submitted by the students should meet the criteria given by UHS. It must include

- Title page
- Abstract
- Abbreviations
- Contents

List of Tables& Figures(where applicable)

Literature review

Material and Methods

Results

Discussion (including Conclusion(s),

Limitations of the study

Recommendation(s)

References / Bibliography / Literature Cited

Thesis Evaluation

The thesis will be presented by the student in the Thesis Review Committee. After the satisfactory report of the TRC, the student shall submit four copies of his/her thesis written in a prescribed format to the university examination department. The thesis will be reviewed by at least two external national and one international examiner who is also a subject specialist. Each examiner will be provided with an electronic copy of the thesis and, acting independently, is required to provide the

Controller of Examinations within two months of receipt of the thesis, with a written report on the quality of the thesis. If there is no response from the examiner in two months after two reminders, the examiner will be replaced.

Thesis Defense

Thesis defense is an oral examination and student present and defend his/her thesis before a committee designed by UHS, include supervisor and two external examiners. The defense assesses the students understanding of their research and its significance. At the end of session committee members will decide whether thesis is acceptable, revision is needed or thesis require further work. Degree of M.Phil Anatomy is awarded to the successful students.

Examination

At the end of second year comprehensive exam of second minor subject will be conducted by UHS.

Table of Specification

Second minor course:

2nd Minor	MCQs	Total
Genetics/Microbiology/Immunology	100	100

Thesis Examination

The thesis examination will be held after research work, thesis writing and final corrected copies are submitted to the University.

Thesis Defense	Viva	Total
Research Topic	200	200

PMDC Requirements at completion of Degree

All PG students after completing their M. Phil Anatomy degree shall be registered by the Council (PMDC).

PRESCRIBED TEXT BOOKS & REFERENCES

RECOMMENDED BOOKS (Latest Edition):

1. Last Regional Anatomy and Applied by McMinn (Churchill Livingstone)
2. Clinically Oriented Anatomy by Keith L. Moore (Lippincott, Williams & Wilkins)
3. Grey's Anatomy by Williams (Churchill Livingstone)
4. The Developing Human by Keith L. Moore (Saunders)
5. Medical Embryology by Jan Langmann (Williams & Wilkins)
6. Baily's Text Book of Histology by Wilfred M. (Coopenhaver, Kelly Wood)
7. Functional Histology by Borysenko, Bringer (Little Brown & co)
8. Wheater Functional Histology by B. Young and H. Heath (Churchill Livingstone)
9. Histology: Atext and Atlas by M.H. Ross (Williams & Wilkins)
10. Genetics in Medicine: By J.S. Thompson & W.B. Saunders
11. Human Neuroanatomy by J. Stuin& M. B. Carpenter
12. Clinical Neuroanatomy by Richard S. Snell (Williams & Wilkins)
13. Histochemistry Theorectical and applied by Anttony Guy Everson. Pearse (Churchill Livingstone)
14. Histopathological Technic &Prac. Histochemistry by Ralph Dougall, Lillie
15. Biological microtechnique by Sandersons J (1994)
16. British Journal of Anatomy
17. Journal of Ultrastructural Research
18. Anatomical Records
19. ActaAnatomica
20. Journal of medical Genetics

Website: http://www.uhs.edu.pk/academics//anatomy.html