



DEPARTMENT OF BIOCHEMISTRY

LIAQUAT UNIVERSITY OF MEDICAL & HEALTH SCIENCES, JAMSHORO

Dated: 18-09-2025

CURRICULUM OF M.PHIL (BIOCHEMISTRY)

Major & Minor

DURATION

Two Academic Years

Major Subject

BIOCHEMISTRY

Minor Subject

1. Physiology
2. Pharmacology
3. Pathology
 - i) Microbiology
 - ii) General Pathology
 - iii) Haematology

CREDIT HOURS

for M.Phil Biochemistry Major / Minor

DURATION

02 Years Program

TWO YEARS	M.PHIL PROGRAM	30 CREDIT HOURS
Course work		24 Credit Hours
Research & Thesis		06 Credit Hours
PART-I	Major-I (Biochemistry)	08 Credit Hours
	Minor-I (Physiology) Minor-II (Pharmacology) Minor-III (Pathology) i) Microbiology ii) General Pathology iii) Haematology	04 Credit Hours
PART-II	Major-I (Biochemistry)	08 Credit

		Hours
	Minor-I (Physiology) Minor-II (Pharmacology) Minor-III (Pathology) i) Microbiology ii) General Pathology iii) Haematology	04 Credit Hours

PROTOCOL OF EXAMINATION OF M.Phil

TWO YEARS PROGRAM

UNIVERSITY EXAMINATION AT THE END OF FIRST YEAR

ELIGIBILITY

- ▶ Passing marks for Major subject is 65%, if below 65% candidate will repeat the course.
- ▶ Passing marks for Minor subject is 65%.
- ▶ Attendance should be 80%.

Pattern of Examination:

Major (Part-I)	No. of Questions	Marks	Time
• Paper I	100 MCQ (One Best Type)	100	2 Hours
• Practical and Viva Voce		100	

Criteria of Passing:

- Passing marks in each paper will be 65%
- Passing marks in Viva voce / practical will be 65%

Examiners for Practical and Viva Voce: One or Two External & Chairman/ Chairperson will be as Co-ordinator of Examination.

Pattern of Examination:

Minor – I	No. of Questions	Marks	Time
• Paper I	100 MCQ (One Best Type)	100	2 Hours
• Practical and Viva Voce		100	

Criteria of Passing:

- Passing marks in each paper will be 65%
- Passing marks in Viva voce / practical will be 65%

Examiners for Practical and Viva Voce: One or Two External & Chairman/ Chairperson will be as Co-ordinator of Examination.

UNIVERSITY EXAMINATION AT THE END OF SECOND YEAR

ELIGIBILITY

- ▶ Passing marks for Major subject is 65%, if below 65% candidate will repeat the course.
- ▶ Passing marks for Minor subject is 65%.
- ▶ Approval of Synopsis by the Board of Advance Studies & Research.
- ▶ Attendance should be 80%.

Pattern of Examination:

Major (Part-II)	No. of Questions	Marks	Time
• Paper I	100 MCQ (One Best Type)	100	2 Hours
• Practical and Viva Voce		100	

Criteria of Passing:

- Passing marks in each paper will be 65%
- Passing marks in Viva voce / practical will be 65%

Examiners for Practical and Viva Voce: One or Two External & Chairman/ Chairperson will be as Co-ordinator of Examination.

Pattern of Examination:

Minor – II	No. of Questions	Marks	Time
• Paper I	100 MCQ (One Best Type)	100	2 Hours
• Practical and Viva Voce		100	

Criteria of Passing:

- Passing marks in each paper will be 65%
- Passing marks in Viva voce / practical will be 65%

Examiners for Practical and Viva Voce: One Internal & One External & Chairman/ Chairperson will be as Co-ordinator of Examination.

FINAL UNIVERSITY EXAMINATION AFTER SECOND YEAR

Thesis Examination and Evaluation at the end of Second Year

Thesis Defense University Examination: Five examiners will conduct examination.

- Chairman/ Chairperson will be as co-ordinator of Thesis defense Examination
- Three External Examiners of Major Subject

Each examiner will examine the thesis of 100 marks and viva voce of 100 marks (Passing Marks 65%)

Eligibility of appearing in Thesis Examination: (In Defense of Thesis)

- Candidate will present at least two seminars based on his / her research work. These seminars will be open to all academic faculty members. The first should be an indication of the research which has been carried out in the particular field. The second will outline the progress, scope and achievements of the work in hand.
- The candidate will submit a thesis based on research work carried out on the approved topic in their Major discipline.
- Cleared Part-I & Part-II comprehensive examination.
- Cleared foundation courses.
- Candidates whose thesis have been evaluated by the examiners and reported as “accepted” by the examiners shall appear in examination.

Evidence is available of acceptance of two articles for publication in journals abstracted in index Medicus or other internationally recognized indices. These articles should be based on the research work done.

RECOMMENDED BOOKS / JOURNALS

1. Textbook of Biochemistry Harper
2. Textbook of Biochemistry Lippincott.
3. Textbook of Biochemistry Chatterjea
4. Textbook of Biochemistry Satyanaryan (For Minor Students)

COURSE CONTENT FOR
M.Phil (BIOCHEMISTRY) PART-I(MAJOR)

Sr.#	Topic
01	Chemistry of the Cell & Biophysics
02	Acid base balance & disorders
03	Chemistry of Carbohydrate/ Digestion absorption
04	Chemistry of Lipid/ Digestion absorption
05	Chemistry of Amino Acid and Protein / Digestion absorption
06	Chemistry of Nucleic Acid and Genetics (Information Flow in the Cell)
07	Enzymes
08	Vitamins and their abnormalities
09	Endocrinology

PRACTICAL-I (In Biochemistry Laboratory)	
01	Practicals of Carbohydrates (Measurements In Body fluids)
02	Practicals of Proteins (Measurements of Proteins and AAs in body fluids) Determination of A/G ration in serum
03	Practicals of Lipids (Estimation of Total Cholesterol in Blood)

04	Urine Analysis
----	----------------

M.Phil (BIOCHEMISTRY) PART-II MAJOR)

SR.#	TOPICS
01	Bioenergetics and Energy Transformation
02	Metabolism and applied Biochemistry of Carbohydrates
03	Metabolism and applied Biochemistry of Proteins
04	Metabolism and applied Biochemistry of lipids
05	Mineral metabolism and Nutrition
06	Clinical enzymology
07	Special cell function tests (LFT, RFT,TFT)
08	Porphyrin & Hemoglobin

PRACTICAL-II (In Research Laboratory)-Analytical Techniques	
01	UV-Visible spectrophotometry, Fluorometry
02	pH meter, Micro lab 300,
03	Colorimetry, Flame Photometry, Atomic absorption-Spectrophotometry
04	Chromatography, Centrifugation & Electrophoresis
05	PCR & ELISA

M.Phil (BIOCHEMISTRY) PART-II (MINOR)

SR.#	TOPICS
01	Chemistry of the Cell, Biophysics and Acid Base Balance
02	Chemistry of Carbohydrate
03	Chemistry of Lipid
04	Chemistry of Amino Acid and Protein
05	Chemistry of Nucleic Acid and Genetics (Information Flow in the Cell)
06	Enzymes
07	Vitamin
08	Porphyrin & Hemoglobin
09	Mineral Metabolism & Nutrition

PRACTICALS (In Biochemistry Laboratory)	
01	Practicals of Carbohydrates (Measurements In Body fluids)
02	Practicals of Proteins (Measurements of Proteins and AAs in body fluids) Determination of A/G ration in serum
03	Practicals of Lipids (Estimation of Total Cholesterol in Blood)
04	Urine Analysis

PROF.DR. MUBINA LAGHARI

CHAIRPERSON

DEPARTMENT OF BIOCHEMISTRY

