To
The Chairperson
Medical Education Unit (MEU)
HIMSR
New Delhi

Date:07/11/2025

Subject: Proposal for Elective Course in Biochemistry

Dear Sir/Madam.

I propose the following elective course for approval:

S.no.	Title of Elective	Supervisor	Co-Supervisor	Number of Students Intake
1	Risk management in pre-analytical, analytical and post analytical stages of investigations in clinical biochemistry lab.	Dr. Jaspreet Kaur	Dr Asif Ali Ms. Shazia Bano	2-5
2	Quality control basics and its importance in clinical and endocrinology lab.	Dr. Sana Alam	Dr Huda Naaz Dr. Tahreem Afroz	2-5
3	Mammalian cell culture basics and its application in research and development.	Dr. Kailash Chandra	Dr. Ariz Anwar	2-3
4	Mastering ELISA and electrophoresis technique: unveiling their clinical significance for precision diagnostics	Dr. Bhumika Upadhyay	Mr. Rizwan Khan	2-5

Kindly consider this proposal for approval.

Sincerely,

Dr. Jaspreet Kaur
Professor & HOD
Department of Biochemistry

Dr. JASPREET KAUR
Professor & HOD, Biochemistry
HIMSR & HAHC Hospital
New Delhi-110062

Electives in Department Of Biochemistry
Hamdard Institute of Medical Science and Research and
Associated HAHC Hospital, New Delhi

Date:07/11/25

S. No.	Name of Elective	Risk Management in pre-analytical, analytical and post-analytical stages of investigations in Clinical Biochemistry Lab
1.	Block	I
2.	Department/area	Biochemistry
3.	Name of mentor/supervisor	Dr. Jaspreet Kaur, Professor & HOD, Biochemistry, HIMSR
4.	Co-Supervisor	1.Dr. Asif Ali, Senior resident, Biochemistry, HIMSR 2. Ms. Shazia Bano, Tutor, Biochemistry, HIMSR
5.	Number of students intake	2–5
6.	Method of selection (if applicable)	Interview / as per the policy of HIMSR
7.	Objectives	• **Concept of quality indicators** **Pre-analytical Phase:** risk identification, assessment and mitigation. **Area of focus:** a) Patient preparation b) Sample collection c) Transport of sample

		d) Preparation for analysis and storage **Analytical Phase:** risk identification, assessment and mitigation. **Area of focus:** a) Receiving and processing of samples b) Sample rejection record maintained c) Instruments (IQ, OQ, PQ) daily, weekly, and monthly maintenance

Dr. Asif Ali

SR , Biochemistry, HIMSR

(Co-supervisor)

Dr. Jaspreet Kaur

Professor & HOD, Biochemistry,HIMSR

(Supervisor)

Dr. JASPREET KAUR
Professor & HOD, Biochemistry
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Shazia Bano

Ms. Shazia Bano

Tutor, Biochemistry, HIMSR

(Co-supervisor)

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S. No.	Name of Elective	**Quality control basics and its importance in clinical and endocrinology labs.**
1.	Block	I
2.	Department/area	Biochemistry
3.	Name of mentor/supervisor	Dr. Sana Alam, Professor, Biochemistry, HIMSR
4.	Co-Supervisor	1.Dr. Huda Naaz, Assistant Professor, Biochemistry, HIMSR 2. Dr. Tahreem Afroz, Tutor, Biochemistry, HIMSR
5.	Number of students intake	2–5
6.	Method of selection (if applicable)	Interview / as per the policy of HIMSR
7.	Objectives	• Overview of clinical biochemistry and endocrinology laboratory, machines (Beckman Coulter AU480, Architect i1000SR, Bio-Rad D-10, Roche 9180 electrolyte analyzer), their principle and functioning. • Proper SOPs for machine working and quality control testing. • Universal precautions for dealing with Q.C. aliquots and human samples.

		• Preparation of both levels i.e. level-1 and level-2 in labs. • Demonstration of different types of Q.C. i.e. internal and external quality control. • Hands-on training and dealing with machines. • Preservation, freezing, and thawing of Q.C. samples.

Dr. Huda Naaz

Assistant Professor , Biochemistry, HIMSR

(Co-supervisor)

Dr. Sana Alam

Professor , Biochemistry,HIMSR

(Supervisor)

Dr. SANA ALAM
Professor
HIMSR & HAHC Hospital
New Delhi-110062

Dr. Tahreem Afroz

Tutor, Biochemistry, HIMSR

(Co-supervisor)

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S. No	Name of elective	Mammalian Cell Culture Basics and its Application in Research and Development
1.	Block	I
2.	Department/Area	Biochemistry
3.	Name of mentor/supervisor	Dr. Kailash Chandra, Associate Professor, Biochemistry, HIMSR
4.	Co-supervisor	Dr. Ariz Anwar, Tutor, Biochemistry, HIMSR
5.	Number of students intake	2–3
6.	Method of selection (if applicable)	Interview / as per the policy of HIMSR
7.	Objectives	• Overview of cell culture laboratory, equipment, and applications • Aseptic techniques and good cell culture practice (GCCP) • Demonstration of different cell types, equipment used in cell culture laboratory, and their application in research • Preparation of media

		• Hands-on training in mammalian cell culture techniques, passaging, and maintenance of cell lines • Cryopreservation (freezing and thawing of cell lines) • Subculturing, determination of confluency, cell counting, and viability testing
8.	**Expected outcomes**	• Successfully maintain cultures of animal cells and established cell lines with good viability and minimal contamination. • Students will be trained for cell culture, including preparation and evaluation. • Media, cryopreservation and recovery, and assessment of cell growth/health. • Students will be trained in various equipment used in cell culture and biomedical research. • Recognize and troubleshoot problems common to routine cell culture.
9.	**Assessment**	Feedback / Viva voce
10.	**Log book**	A Google Form for the day-to-day activity will be filled by students, and the record for the same will be maintained in Excel.

Dr.Ariz Anwar

Tutor, Biochemistry, HIMSR

(Co-supervisor)

Dr. Kailash Chandra

Associate Professor, Biochemistry,

HIMSR

(Supervisor)

Dr. KAILASH CHANDRA
Associate Professor, Biochemistry
HIMSR Jamia Hamdard
New Delhi-110062

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S. No.	Name of Elective	"Mastering ELISA and Electrophoresis technique: Unveiling Their Clinical Significance for Precision Diagnostics!"
1.	Block	I
2.	Department/area	Biochemistry
3.	Name of mentor/supervisor	Dr. Bhumika Upadhyay, Assistant Professor, Biochemistry, HIMSR
4.	Co-Supervisor	1. Mr. Rizwan Khan, Tutor, Biochemistry, HIMSR
5.	Number of students intake	2–5
6.	Method of selection (if applicable)	Interview / as per the policy of HIMSR
7.	Objectives	1. **Understand Fundamental Principles:** Gain in-depth knowledge of the principles behind ELISA and electrophoresis techniques and their role in clinical diagnostics. 2. **Hands-On Skill Development:** Develop practical expertise in performing ELISA and electrophoresis with accuracy and precision. 3. **Interpretation of Results:** Learn to analyze and interpret results obtained from ELISA and electrophoresis to identify their clinical relevance. 4. **Enhance Diagnostic Application:** Explore the application of these techniques in diagnosing

		diseases, monitoring biomarkers, and advancing clinical research. 5. **Ensure Quality and Accuracy:** Understand the importance of quality control, troubleshooting, and standardization in achieving reliable and reproducible results.
8.	Expected outcomes	**Proficiency in Techniques:** Participants will gain hands-on expertise in performing ELISA and electrophoresis, enabling them to conduct experiments.

Mr. Rizwan Khan
Tutor, Biochemistry, HIMSR

(Co-supervisor)

Dr. Bhumika Upadhyay
Assistant Professor, Biochemistry,
HIMSR

(Supervisor)

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