DOW UNIVERSITY OF HEALTH SCIENCES

SCHOOL OF POSTGRADUATE STUDIES

MPHIL IN PHYSIOLOGY

PROGRAM SPECIFICATION 2025-26

Unveiling the M.Phil. Physiology Program: A Gateway to Teaching and Research Excellence	
INTRODUCTION OF INSTITUTE & PROGRAM	The M.Phil. program in Physiology offered by Dow University of Health Sciences (DUHS) is tailored for medical professionals seeking deeper insights into human physiology. Delivered through the School of Post-Graduate Studies, this program adopts a unique modular format, accommodating the diverse needs of aspiring educators and researchers. **Highlighted features include:** **Tailored for Medical Professionals:** Recognizing students' medical backgrounds, the program builds upon this foundation for advanced exploration of physiological concepts. **Modular Flexibility:** With a modular format, students have a wide range of course options, enabling them to align their studies with their specific research interests and career goals in Physiology. **Bridging Medicine and Research:** The program facilitates a comprehensive understanding of human health and disease, bridging clinical medicine with research at the molecular level. **Modern Biomedical Techniques:** Emphasizing contemporary techniques in biomedicine, the curriculum provides hands-on experience with advanced tools, preparing students for cutting-edge research. **Sharpening Critical Thinking Skills:** Beyond knowledge dissemination, the program actively nurtures essential skills for future research success, including synthesis, analysis, and decision-making. **Triple Threat Graduates:** Graduates emerge as well-rounded professionals capable of excelling as subject specialists, researchers, and resource persons in teaching and research settings. **Comprehensive Learning Experience:** The program structure integrates coursework and an original research thesis component. While coursework establishes a strong foundation in advanced physiological concepts, the research thesis allows students to delve deeply into specific areas of interest, gaining valuable research experience. Overall, the DUHS M.Phil. Physiology program offers a unique opportunity for medical professionals to acquire the knowledge, skills, and methodologies necessary for success in teaching, research, and meaningful contributions to the field of physiological sciences.

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Course Title (HEC)	M.Phil. in Physiology
Course Duration	2 – 4 Years
Type of Study	Full time
Study System	Semester system
Total Credit Hours	Total C.H. 30
Credit Hours Distribution –Semester Wise	12 Credit hours each for 2 semesters of course work, 06 credit hours for thesis
Study Hours Distribution	Study per Semester = 16 weeks Examination = 2 weeks Semester Break = 2 weeks Working Days = 8:30am - 3:00pm (except Friday)
Teaching Hours Distribution	Lecture hours/ Facilitation / Self Directed Studies/ Lab training/ Internship
Modules Detail with Credit Hours	See Appendix I
Assessment of Student	Continuous Internal Assessment = 30 % Final Examination = 70% Total = 100%
Teaching Institution	School of Post Graduate Studies
Degree Awarding Institution	Dow University of Health Sciences, Karachi

APPENDIX - I

Modules with Credit Hours				
Year	**Semester**	**Title of Course**	**Course Credit**	**Credit Hrs.**
1st	I	Medical Genetics	HBMS 701	2
		Fundamentals of Molecular Biology	HBMS 703	2
		Research Methodology	HBMS 705	2
		Biostatistics in Health and Medicine	HBMS 707	2
		Epidemiology	HBMS 709	2
		Instrumentation Techniques	HBMS 711	2
	II	Cellular & Clinical Neurophysiology	701	3
		Cardio-Respiratory Physiology	703	3
		Renal & GIT Physiology	702	3
		Clinical Endocrinology & Reproduction	704	3
		Internship	HBMS 712	NCH
2nd	III	Internship	HBMS 713	NCH
		Research work	HBMS 799	6
	IV	Research work & Submission of Thesis		
		Internship	HBMS 714	NCH
TOTAL CREDIT HOURS				**30**

DUHS MPhil Physiology Program: Learning Outcomes

The MPhil Physiology program at DUHS aims to cultivate well-rounded graduates equipped for success in teaching, research, and contributing to the advancement of physiological sciences. To achieve this, the program emphasizes a strong foundation in advanced physiological principles, coupled with the development of critical research and communication skills. Here's a detailed breakdown of the program's learning outcomes:

1. Comprehensive Understanding of Physiology:

- **Molecular and Cellular Mechanisms:** Graduates will demonstrate a thorough grasp of physiological processes at the molecular and cellular level. This includes understanding the function of various biomolecules, cellular signaling pathways, and how these mechanisms contribute to organ system physiology.
- **Organ Systems Integration:** Students will be able to integrate their knowledge of individual organ systems (e.g., cardiovascular, respiratory, nervous) and understand how they interact and function as a whole to maintain human health.
- **Homeostasis and Disease:** The program emphasizes the concept of homeostasis and how physiological systems respond to maintain it. Graduates will gain a deep understanding of how these mechanisms can become dysregulated, leading to various disease states.

2. Mastery of Modern Biomedical Techniques:

- **Advanced Laboratory Techniques:** The program equips students with hands-on experience in utilizing cutting-edge biomedical techniques like molecular biology tools, electrophysiology, and advanced microscopy. Graduates will be proficient in applying these techniques to address research questions in Physiology.
- **Data Analysis and Interpretation:** Students develop strong skills in data analysis using various statistical methods and bioinformatics tools. They will learn to interpret data critically, draw sound conclusions, and identify limitations of their research.
- **Critical Evaluation of Literature:** The program emphasizes the importance of staying abreast of current research advancements. Graduates will be adept at critically evaluating scientific literature, identifying strengths and weaknesses of published research, and integrating these findings into their own work.

3. Rigorous Research Skills:

- **Research Design and Methodology:** Students gain the ability to design well-defined research projects in Physiology. This includes formulating clear research questions, selecting appropriate methodologies, and developing sound experimental designs.
- **Independent Research Conduct:** The program culminates in an original research thesis, where students independently conduct research under the guidance of faculty advisors. This allows them to gain in-depth experience in all stages of the research process, from project conceptualization to data collection, analysis, and interpretation.
- **Effective Communication of Research:** Graduates develop strong scientific communication skills, allowing them to present their research findings effectively through written reports, oral presentations, and scientific posters.

4. Enhanced Teaching and Communication Skills:

- **Curriculum Development:** Students learn how to develop engaging and effective teaching materials for various levels of Physiology education. They will be able to tailor their teaching approaches to suit the needs of diverse learners.
- **Clear and Concise Communication:** The program emphasizes clear and concise communication of complex physiological concepts. Graduates will be able to explain these concepts effectively to both students and colleagues from different backgrounds.
- **Educational Resource Evaluation:** Students develop the ability to critically evaluate and utilize existing educational resources like textbooks, online platforms, and digital tools to enhance teaching and learning within the field of Physiology.

5. Professional Development:

- **Critical Thinking and Problem-Solving:** The program fosters critical thinking skills necessary for research success. Graduates will be adept at analyzing complex scientific problems, formulating hypotheses, and designing strategies to address them.
- **Effective Collaboration:** Collaboration is emphasized throughout the program, as students work together on projects and learn to communicate effectively with fellow researchers and healthcare professionals.
- **Ethical Conduct:** Graduates will develop a strong understanding of ethical principles in research and teaching activities. They will be committed to maintaining the highest ethical standards throughout their careers.