

# 1. Introduction

The University of Health Sciences was established with the main objective of providing a leading resource for education and training in health sciences and health care as well as medical research. The University regulates and coordinates the activities of medical education and research throughout the province of Punjab.

The University is making concerted efforts to improve the quality of medical education at all levels and bringing it at par with international standards. Scientific conferences, research seminars, and workshops on themes related to medical education are held regularly at the University campus.

The mission of the University of Health Sciences is to develop an intellectually conducive environment providing excellence and innovation in medical education and research to produce competent and community oriented doctors, dentists, nurses, biomedical engineers and paramedics.

## **The goals of the university are:**

- To impart knowledge and skills to health service personnel capable of providing community oriented multi-disciplinary patient-centered care.
- To produce and train researchers and specialists in basic, clinical and related disciplines.
- To establish continuing professional development programmes for in-service medical personnel.

## **International Linkages**

The university has developed collaboration and affiliation with a number of international and foreign organizations including:

- *The World Health Organization*
- *General Medical Council of UK*
- *United States Medical Licensing Authority*
- *Medical Council of Ireland*

Whereas, collaborative linkages with University of Manchester, UK and St. George's Hospital Medical School, London are in final stages. The recent agreement of University of Health Sciences, Lahore with the Texas, Health Sciences Centre at Houston has opened new avenues of

professional excellence and inputs in the field of Biomedical Engineering.

### **Affiliated Institutions**

1. Allama Iqbal Medical College, Lahore
2. Nishtar Medical College, Multan
3. Punjab Medical College, Faisalabad
4. Quaid-i-Azam Medical College, Bahawalpur
5. Rawalpindi Medical College, Rawalpindi
6. Sheikh Zayed Medical College, Rahim Yar Khan
7. Services Institute of Medical Sciences, Lahore
8. School of Allied Health Sciences, Lahore
9. de` Montmorency College of Dentistry, Lahore
10. Dental Section, Nishtar Medical College, Multan
11. Lahore Medical & Dental College
12. FMH College of Medicine & Dentistry, Lahore
13. Wah Medical College, Wah
14. ACE Institute of Sciences, Lahore
15. Institute of Public Health, Lahore
16. Punjab Institute of Cardiology, Lahore
17. Postgraduate Medical Institute, Lahore
18. Armed Forces Postgraduate Medical Institute, Rawalpindi
19. Postgraduate College of Nursing, Lahore
20. Punjab Institute of Mental Health, Lahore

## **2. MSc Biomedical Engineering (BME) Programme**

The Biomedical Engineering (BME) programme leading to MSc degree offers students with different backgrounds, an opportunity of postgraduate education and training in the emerging discipline of biomedical engineering.

The MSc BME programme at the UHS has been developed and structured to integrate engineering with medicine to solve our health related problems and enhance our quality of life. Biomedical Engineering being a relatively new multidisciplinary area, is expected to grow in years to come. New devices, algorithms and complex systems will be developed that will impact the improvement of medical practice and health care.

The MSc BME degree will equip the students with the skills and experience to plan, design, fabricate and maintain systems and equipments that are used in all fields of health care. The students are expected to gain education in both engineering and medical sciences with a strong emphasis on practical skills.

The MSc BME programme at the UHS shall be conducted with the active collaboration of University of Engineering and Technology (UET), Biosciences Division, Pakistan Atomic Energy Commission (PAEC) and Institute of Nuclear Medicine and Oncology, Lahore (INMOL), and other affiliated health sciences institutions.

### **Job Opportunities**

Graduates with MSc in BME can find themselves working in medical and engineering institutions, hospitals and industry, on a range of application areas including design, production or maintenance of sophisticated patient care monitoring, diagnostic and therapeutic medical equipments and sensory or control systems.

Persons holding an MSc degree in BME will also be suited to join internationally funded projects of community medicine, patient health care, mobile hospitals, etc. The MSc degree will also prepare candidates to pursue a PhD programme in BME within the country and abroad.

### **Course Overview**

#### *First Academic Year*

<b>CODE</b>	<b>TITLE</b>
<b>BME 501</b>	Foundation of Biomedical Engineering
<b>BME 502</b>	Bio-mechanics
<b>BME 503</b>	Bio-materials
<b>BME 504</b>	Applications of Biomedical Engineering
<b>BME 505</b>	Practicals, Viva & Log Book

## *Second Academic Year*

<b>CODE</b>	<b>TITLE</b>
<b>BME 506</b>	Biomedical Instrumentation
<b>BME 507</b>	Biosignal Analysis
<b>BME 508</b>	Safety, Protection and Quality Assurance.
<b>BME 509</b>	Practicals, Viva and Log Book
<b>BME 510</b>	Research Project

## Thesis/Dissertation

In addition to the course work the candidate shall be required to submit a dissertation/thesis. A supervisor shall be appointed for each candidate for his research thesis.

## Internship

The students will be required to alternate studies with training in industry and other institutions and organizations as an interne. The internship is an integral part of MSc BME. This programme comprises two compulsory internships of a duration of six weeks each, in the summer of the 1<sup>st</sup> and 2<sup>nd</sup> year of their degree programme. Students will be placed in leading national and multinational companies, and healthcare institutions.

## 3. Admission

Admission to MSc BME shall be made according to the schedule advertised in the leading news papers and the list of selected candidates shall be displayed on the University notice board. The admission to the programme is granted strictly on merit and in accordance with the rules and policies of the University.

Applications on prescribed form with requisite documents, complete in all respects should be submitted to the Registrar, University of Health Sciences, Lahore, by the due date. Incomplete applications shall not be entertained. The admission of foreign students will be made on merit. Merit list will be prepared by the admission committee and its decision shall be final.

## Eligibility

A candidate seeking admission in UHS Master's degree programme must fulfil the following requirements:

He/she has passed BSc Engineering or MBBS examination securing at least 50% marks in aggregate in the following disciplines for the HEC/PEC/PMDC recognized Universities/colleges:

- BSc Electronics Engineering
- BSc Electrical Engineering
- BSc Biomedical Engineering
- BSc Mechatronics Engineering
- BSc Computer Engineering
- MBBS

## Interview and Test

A written admission test followed by interview may be held by the university on specified dates.

## 4. Fee & Other Charges

The university fee and other dues must be paid on the dates notified by the University.

### *Fee Schedule for MSc Biomedical Engineering*

<b>1<sup>st</sup> Year</b>	
Admission Fee	1,000/-
Tuition Fee (Per Annum) *	12,000/-
Verification charges	500/-
Registration Fee	4,500/-
Security (Refundable)	2,000/-
Library Fund	1,000/-
Laboratory Charges	1,000/-
<b>Total</b>	<b>22,000/-</b>
<b>2<sup>nd</sup> Year</b>	
Tuition Fee (Per Annum) *	12,000/-
Library Fund	1,000/-
Laboratory Charges	2,000/-
<b>Total</b>	<b>15,000/-</b>

\* Tuition fee to be paid biannually in advance

## 5. Contacting UHS

Enquiries may be made in person or by telephone, fax or e-mail.

Telephone # : (92-42) 9231304-09 Ext. 314

Fax # : (92-42) 9230870

UAN : 111-33-33-66

E-mail : [info@uhs.edu.pk](mailto:info@uhs.edu.pk)

### **Mailing Address:**

#### **University of Health Sciences, Lahore**

Khayaban-e-Jamia Punjab, Lahore 54600, Pakistan

Website: <http://www.uhs.edu.pk>