



# PROSPECTUS 2020

MIRPUR UNIVERSITY OF SCIENCE AND  
TECHNOLOGY (MUST), MIRPUR AJK

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





# MUST

## VISION & MISSION

### VISION

To be a superior teaching and research Institution, having transformative impact on society and acting as a knowledge corridor between Azad Jammu & Kashmir, Pakistan and rest of the World.

### MISSION

MUST is committed to all-encompassing growth of its students, besides enabling them to tap the world of knowledge and assume leadership role in the future through a process of continual innovation in education, research, creativity, technological advancement and entrepreneurship.



# MUST CORE VALUES

Leadership Development

Academic Excellence and  
Advancement on Merit

01

Pluralism and Diversity

Creativity and Innovation

02

Academic Freedom  
and Freedom of Thought

Service with Integrity

Ethically Acceptable  
Standards of Conduct

03

Environmental Sustainability

Inclusiveness and Openness

Non-Discrimination

04

Learner-centric and  
Personalized Learning

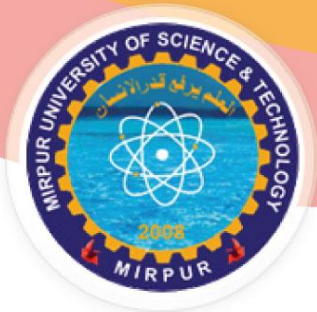
Transform lives

Collegial Environment  
and Dignity of Labour

05

Fairness and Equality

Outreach and Community-  
building



## MESSAGE FROM THE CHANCELLOR

The Mirpur University of Science and Technology (MUST) is imparting state of the art education in Azad Jammu and Kashmir. Though, in MUST, the bulk of the students are from Azad Kashmir, it is a matter of great satisfaction that many from different parts of Pakistan are also part of its faculty and student community. Over the years, MUST have laid down foundations for developing competencies in cutting edge scientific and disciplines. But, in addition to focusing on its core specializations, it is also developing fast into a centre for quality education in social sciences and humanities. MUST is rapidly investing in research and innovation and its products are being appreciated and recognized in the academic community. This is possible because of its emphasis on faculty development programmes and creation of an enabling environment for productive learning that would prepare students for professions in the ever-changing markets. MUST is also emerging as a pioneer in new technologies such as Artificial Intelligence, Internet of Things, Robotics and Cloud

Computing. This gives it a head-start to meet the challenges of the future. For all these achievements, I would congratulate the Vice-chancellor as well as members of his efficient team for their meticulous planning and diligence. In the wake of the COVID-19 outbreak, the biggest challenge for the academia has been to shift from traditional campus-based teaching to the digital mode of education. I commend the University leadership for their tremendous efforts in meeting this challenge with success. I also felicitate MUST for being ranked first in HEC's list of top Universities of Azad Jammu & Kashmir for online readiness. This is an impressive achievement despite resource constraints. I feel immense pleasure in acknowledging that MUST has expanded its digital infrastructure in a short span of time. Its next outreach initiative would up-grade the existing online teaching platforms for students living in remote areas. I appreciate the readiness of the faculty, administration and staff to enable students to achieve academic excellence in diverse fields.

I wish you all more success!

**Sardar Mohammad Masood Khan**  
President of Azad Jammu and Kashmir/  
Chancellor MUST



## MESSAGE FROM THE VICE CHANCELLOR

I am proud to be the Vice Chancellor of Mirpur University of Science & Technology (MUST), Mirpur. This is a time of unprecedented change over in the higher education worldwide. As well as expanding itself with a view to providing higher education opportunities to masses at doorsteps, quality of education remains MUST's a priority goal. In this regard, we have recently established Faculty of Health & Medical Sciences in addition to startup of other nine new departments in various Faculties. We have also extensively revised our curricula with a view to incorporating latest development and trends in the respective fields of study. MUST makes sure that an ideal environment conducive to learning exists at all campuses. International collaboration with top ranking universities is what we actively pursue in order to provide international exposure to our students and faculty and promote joint research. We take pride in our highly qualified faculty who made their appearance at international forums by publishing quality research. Our students remain our top most priority. MUST is willing to go any far to protect their future and are working hard to maintain quality education and provide facilities to our students in the face of the Covid 19 pandemic. I am happy to share that as a fruit of a joint effort we have among the top universities of the country, and first in the State, in HEC's ranking of universities for their online readiness. I take this opportunity to congratulate all faculty and staff without whose effort this would not have been possible.

MUST stand ready to harness its digital resources if this pandemic situation exists. We have put all the arrangements in place in this regard. I am thankful to the Chancellor of MUST, Sardar Masood Khan for his continuous support in our effort to uplift the standards of education at MUST. I am positive we would achieve further heights under his dynamic leadership and vision. I am also grateful to Higher Education Commission (HEC) for their providing guidelines and support in building university's wide-ranging rollout of Microsoft Teams for online teaching. This, for sure, allowed us to outreach students in remote areas and continue teaching unhindered. I believe that communities play a key role in building higher education institutions. I would take this opportunity to urge upon the members of the community and philanthropists to come forward and strengthen our hands, in whatever capacity they can, in implementing our initiatives relating to different foundations, endowments, social campaigns, and, more importantly, university infrastructure development. Our Vision 2025 envisages widening of academic activities and infrastructure development. I am pleased to share that the PC-I for Pallandri has already been approved by DDWP (HEC), while the PC-I for Bhimber Campus has also been submitted. As the Vice-Chancellor of MUST, I am determined to create an environment that provides favorable environment to each and every student and staff to meet their professional needs and aspirations. I assure you that your experience at MUST will be an asset for the rest of your life.

I welcome you all to Mirpur University of Science and Technology and look forward to seeing you soon on the campus.

**(Prof. Dr. Maqsood Ahmed)**  
Vice Chancellor

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## About The State of Azad Jammu & Kashmir

**Azad Jammu and Kashmir** is the political entity Within the Pakistani-controlled part of the former Princely state of Jammu and Kashmir. It borders Indian administered Jammu and Kashmir to the east (separated from it by the Line of Control), Khyber Pakhtun khwa province to the west, Gilgit-Baltistan to the north, and the Punjab province to the south. With its capital at Muzaffarabad, Azad Jammu and Kashmir covers an area of 13,297 square kilometers (5134 square miles) and has an estimated population of about four million. Azad Jammu and Kashmir (AJK) is a self-governing state under Pakistani control, but under Pakistan's constitution the state is not actually part of Pakistan. Azad Kashmir has its own elected president, prime minister, legislature, high court, and official flag. The state is administratively divided into three divisions which, in turn, are divided into ten districts namely, Mirpur, Kotli, Bhimber, Muzaffarabad, Hattian, Neelum, Poonch, Sudhnuti, Haveli, and Bagh. These ten districts are further subdivided into 29 subdivisions. The people's participation in the political and socio economic development is ensured through the elected

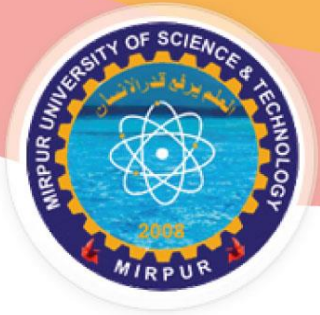


Banjonsa Lake Rawlakot

institutions of the Azad Jammu & Kashmir Legislative Assembly comprising of 41 directly and 8 indirectly elected members and the Azad Jammu & Kashmir Council with six elected members. Azad Kashmir's financial matters, i.e., budget and tax affairs, are dealt with by the Azad Jammu and Kashmir Council rather than by Pakistan's Central Board of Revenue.

The Azad Jammu and Kashmir Council is a supreme body consisting of 11 members, six from the government of Azad





Jammu and Kashmir and five from the government of Pakistan. Its chairman/chief executive is the president of Pakistan. Other members of the council are the President and the Prime minister of Azad Kashmir and a few other AJK ministers. The literacy rate in Azad Kashmir is more than 64%, which is significantly higher than the national average of Pakistan. At

present the gross enrolment rate at primary level is 95% for boys and 88% for girls (between the ages of 5-9). Urdu is the official language of Azad Jammu and Kashmir. However, due to the area's diverse cultural blend, many languages are spoken by different populations, including Pahari, Potwari.



Neelum Valley



Mangla Fort



The northern part of Azad Jammu and Kashmir encompasses the lower part of the Himalayas, including Hari Parbat peak in the Neelum Valley is the highest peak in the state. Fertile, green, mountainous valleys are characteristic of Azad Kashmir's geography, making it one of the most beautiful regions on the subcontinent. The region receives rainfall in both winter and summer. Muzaffarabad and Patton are among the wettest areas of the state. Throughout most of the region, the average rainfall exceeds 1400 mm, with the highest average rainfall occurring near Muzaffarabad (around 1800 mm). During the summer season, monsoon floods of the Jhelum and Neelum rivers are common, due to high rainfall and melting snow.

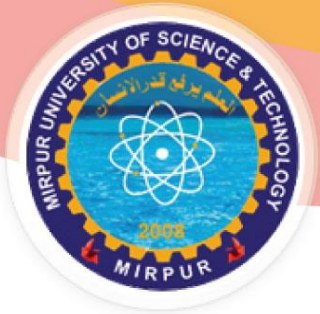
Azad Jammu & Kashmir is very rich in natural beauty. Its snow-covered peaks, dense forests, winding rivers, turbulent foaming streams, wheat-scented valleys, velvet green plateaus and climate varying from arctic to tropical, all join together to make it an excellent tourist attraction. Splendid vallies of Neelum, Jhelum, Leepa, Sudhan Gali, Banjosa, Rawalakot, Paniola, Datot, Tolipir and many more have magical attraction for

visitors. Azad Jammu & Kashmir is a fascinating land of diverse people, languages & cultures.

Agriculture is a major part of Azad Kashmir's economy. Low-lying areas that have high populations grow crops like barley, mangoes, millet, corn (maize), and wheat, and also raise cattle. In the elevated areas that are less populated and more spread-out, forestry, corn, and livestock are the main sources of income.

There are mineral and marble resources in Azad Kashmir close to Mirpur and Muzaffarabad. There are also graphite deposits at Mohriwali. There are also reservoirs of low-grade coal, chalk, bauxite, and zircon. Commensurate with its natural beauty, Kashmir is famous for its rich and varied cultural heritage. Handicrafts are famous all over the world.

In addition to agriculture, textiles, arts and crafts, remittances by British Pakistanis have played a major role in the economy of Azad Kashmir.



## About the University

Mirpur University of Science & Technology (MUST) established in 2008 was formerly a constituent college of University of Azad Jammu and Kashmir as University College of Engineering & Technology (UCET Mirpur). MUST is a state-run Public-Sector University and the President of Azad Jammu & Kashmir is the Chancellor of the University. The Vice Chancellor is the executive head and manages the university functions.

The university is situated in the culturally rich city Mirpur that is also the economic hub of the state of Azad Jammu & Kashmir. The university is playing a leading role to impart quality education in the country. Mirpur University of Science & Technology (MUST) is presently located in three campuses, the main one is situated on Allama Iqbal Road opposite to the District Courts.



There are seven departments namely: Electrical Engineering, Computer System Engineering, Electrical Technology, Power, Software, Civil and Mechanical under faculty of Engineering, five Departments under faculty of Sciences namely:



Biotechnology, Chemistry, CS&IT, Mathematics, Physics, Statistics and four departments of faculty of Arts namely: Islamic Studies, Law, Education, and Business Administration are working. Directorate of Student Affairs, Board of Advanced Studies and Research, ORIC, Sports and NTC offices are also in city campus.

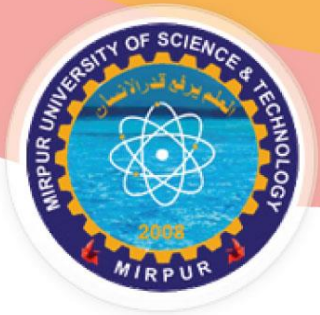
This City Campus is the main hub of education due to which its buildings are designed in this way that it comprises of the Central Library, auditorium, hostels, mosque, student cafeterias, some outdoor sports facilities, big lecture halls, conference halls, spacious labs, parking zone are some of the facilities available in the city campus.

The second campus is located on Allama Iqbal Road adjacent to Girls Degree College. In this campus there is an administrative block, department of Home Economics and Zoology. The girl's hostel is also located in this campus.

The University has also started sub campuses at Bhimber and Pallandri. Bhimber campus is offering programs in English, Economics and Botany.



Bhimber Campus



Palandri campus is offering degree programs in Hotel & Tourism, Forestry, Education, International relations, History and Physics.



Palandri Campus

MUST always looks forward to welcoming successful performers being only one institution in territory of Azad

Kashmir for teaching and training Graduates in Engineering, Sciences and in Social Sciences & Humanities. The University as an institution of higher learning is devoted to promote the general advancement of knowledge and understanding and the development of every student to his/her highest potential so that each may make the maximum contribution to the improvement of the standards, mores, and scientific and cultural climate of all people. In this standpoint MUST in collaboration with HEC has offered 92 Need based scholarships worth 10.609 million for students securing good positions in class but financial hardships are the main encumbrance in their studies. This scheme will be continued in the forth coming session and the number of scholarships will be 100 in this time so that needy but talented student could avail maximum opportunity.

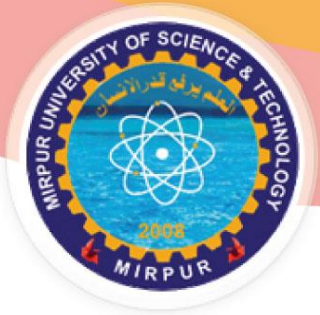


In pursuit of excellence in education, and to enhance the skills of their graduates MUST dedicates itself to adopting a curriculum that embodies and promotes academic specialization and professional education while maintaining a continuous process of institutional self-assessment and adaptation to meet the rapidly changing needs of society.

MUST provide its own internet facility along with its own internal Network so that all students can access it from their own departments and for this purpose NTC was established. The University intends holding online Courses in collaboration with other Universities both local and foreign. These courses could be on subjects in which required expertise is not available. Interactive desktop video conferencing for discussions on research topics can also be one of the possible future developments with a view to enhance facilities for higher education and research in the state of Azad Jammu & Kashmir

and the adjoining areas, in the field of Science & Technology. Commendable services rendered by these institutions are praiseworthy. The students having been bestowed upon degrees in their respective disciplines, mentioned above, are ardently serving the nation, and the humanity at large, at home and abroad. The new status heralds a new sign of revolutionary uplift of education.

Evidently, there are certain requirements, rather pressing ones; first and foremost is that of land. Out of total requirement of 5000 Kanals, 4800 Kanals have already been awarded. University shall be shifted to its new location; a picturesque spot Sainse, 15 kilometres away from the city on the main Mirpur-Bhimber road. It may fulfil the requirements of future expansion at least for five decades. The calm and peaceful environment is conducive to academic and research activities.



The new university with the name of MUST is really a beginning of new era in terms of imparting quality education. Ours is a propitious transformation from smaller to bigger, from lower to higher and from better to the best in the real sense of the term. Our qualified staff is devoted to the very cause of sublime and perfection. The veteran staff, embodiment of professionalism, is involved in class work along with research and other scholarly activities. Living in this age of marvellous scientific and technological achievements, advancements in these fields are intrinsically of paramount importance. Mirpur University of Science & Technology (MUST), Mirpur AJK differs in its character from AJ&K University Muzaffarabad by its high powered body "Senate"; a body with full integrity of formulating statutes, rules and regulations, purchasing,

## **Organizational Setup**

maintaining and disposing of moveable and immovable property, creation and abolition of posts and maintenance of academic and administrative disciplines. Such a body is non-existent in AJ&K University.

Our new born university, MUST is endeavouring its best to take up the challenges of the day and come up to the national expectations and aspirations. We are equipping our laboratories with modern apparatus so that we may be able to quench the thirst of our students for knowledge. The MUST is determined to produce such graduates as to prove the grist to the mill of the nation. Enhancement of standard is our pivotal goal and we are doing our best to make the MUST worthy by all standards. It will touch the ecstasy of prominence in a short extent of time.



- Chancellor
- Vice Chancellor
- Dean Faculty of Social Sciences & Humanities
- Dean Faculty of Engineering & Technology
- Dean Faculty of Natural & Applied Sciences
- Convener Faculty of Health & Medical Sciences
- Registrar
- Controller of Examinations
- Treasurer
- Director of AS & RB
- Director QEC
- Director ORIC
- Director Planning & Development
- Director NTC
- Director Student's Affairs
- Director Sports
- Provost Hostels

Sardar Mohammad Masood Khan  
Prof. Dr. Maqsood Ahmed  
Prof. Dr. Maqsood Ahmed  
Prof. Dr. Anwar Khitab  
Prof. Dr. Shaukat Mahmood  
Prof. Dr. Maqsood Ahmed  
Engr. Muhammad Waris  
Dr. Arshad Farooq  
Dr. Aamir Saghir  
Dr. Javeed Akhtar  
Dr. Imtiaz Ahmed  
Mr. Asif Javed  
Muhammad Iqbal Ch  
Imtiaz Ahmad Bhat  
Dr. Asghar Ali  
Engr. Muhammad Shabir Mirza  
Dr. Ilyas Minhas

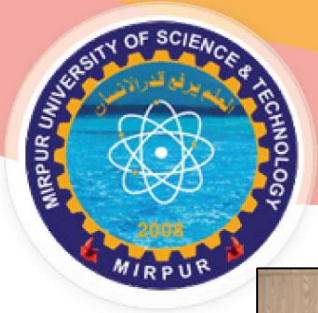






## Highlights of convocation 2020





### MUST activities at a glance





# FACULTY OF ENGINEERING AND TECHNOLOGY



### **Dean Faculty of Engineering & Technology**

Prof. Dr. Anwar Khitab

Tel: +92-5827-961008

E-mail: [dean.engineering@must.edu.pk](mailto:dean.engineering@must.edu.pk)

### **Dean's Message:**

The Faculty of Engineering and Technology is committed to producing highly competent engineers in the fields of Electrical, Mechanical, Civil, Computer Systems and Software Engineering along with extremely important branch "Technology". For this purpose of catering nation's need for technologists, Bachelor Program in Electrical and Civil Technology has been started. The Faculty emphasizes to fulfill the need of the nation and the humanity at large in the fields of Engineering and Technology with discernment, determination, rationale, intension, vigilance and enthusiasm. The faculty promises to achieve its SMART objectives with full velour and spirit. Our objectives are achievable, sustainable, measurable, realistic and time bound. The faculty is exercising a self-assessment program introduced by Higher Education Commission for Quality Enhancement. We have full commitment to meet the Pakistan Engineering Council's and HEC educational standards. All the engineering programs are accredited with Pakistan Engineering Council under level-II Washington accord. Our outcome is expected to compete the graduates of top Universities of the world. This goal is being accomplished through highly qualified, experienced faculty, well equipped laboratories and fully stuffed library: conventional as well as e-library. Students have opportunity to avail the most modern institutional facilities to bloom into competent engineers.



# DEPARTMENT OF **CIVIL ENGINEERING**

## Program Vision

Endeavour to provide quality education in the field of Civil Engineering for the development of the human resource with professional ethics that would contribute towards a better civilized

## Degree Programs Offered

B.Sc. Civil Engineering

M.Sc. Structural Engineering



**Chairperson:**

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E-mail: [chairman.ce@must.edu.pk](mailto:chairman.ce@must.edu.pk)

**Message from Chairperson:**

On behalf of our faculty, staff and students, I welcome you to the website of the Civil Engineering Department (CED) at the Mirpur University of Science and Technology (MUST). During the last 11 years, CED has established a tradition of preparing successful graduates, who have made important contributions to the development of our civil infrastructure and the built environment. Our accomplished alumni hold posts in renowned public and private departments like PWD, WAPDA, NESPAK, and educational institutes within Azad Jammu and Kashmir, Pakistan, and the rest of the world. They contribute to society by engaging in policy making and through successful careers in academia and industry leadership.

CED continuously molds its curriculum and prepares our undergraduate and graduate students to be productive engineers and responsible citizens in the changing environment of the 21st century. We offer an undergraduate degree in civil engineering, which is based on OBE (Outcome Based Education) system and is duly accredited by the Pakistan Engineering Council. In addition, there are opportunities for graduate study at the master's levels in Civil Structural Engineering.

We are excited about the future of our profession and the important role our department will continue to play in this rapidly advancing field. I invite you to explore our website for a closer look at our programs, research efforts, faculty, and other helpful information.



**Faculty members of Civil Engineering**



## Faculty Member

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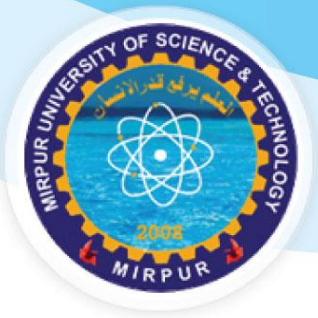
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\*On leave abroad

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## **B.SC. CIVIL ENGINEERING**

Civil Engineering (CE) is an evergreen discipline and its demand exists throughout the world. Civil engineers cater to the national needs for buildings, highways, dams, bridges, irrigation network and water supply systems, and are the world's largest users of building materials. Department of Civil Engineering is actively engaged in disseminating civil engineering education for the last eleven years. The



Department offers full-time course of four years' duration leading to the bachelor's degree in Civil Engineering. The department also offers graduate course of study leading to M.Sc. Structural Engineering.

The Civil Engineering Department offers a bachelor's degree program that develops the necessary skills and competency required to design and implement in the construction industry. In the bachelor's course, emphasis is laid on the fundamental concepts and principles, which inbuilt the basis of civil engineering practices. The department serves the community by producing quality Civil Engineers capable of addressing solutions to the challenging problems being faced at National/International level. These engineers also play a pivotal role to the research sector of the country owing to its multidisciplinary in nature and wide scope. Therefore, the aim of the department is to produce qualified graduates, competitive to serve as technically qualified workforce to the



industry and academia, in corporate sector and government organizations, globally.

## Program Mission

Civil Engineering Department is committed to impart contemporary Civil Engineering education, socioeconomic development through quality graduates capable of playing leadership role through the process of continual innovation, research, creativity and entrepreneurship.

## Program Educational Objectives (PEOs)

➤ **PEO-1:** To impart professionalism, ethics and sustainable development in Civil Engineering Profession

- **PEO-2:** To possess a general education and understanding of global demands of Civil engineering markets by carrying out analysis, design, management and execution of civil Engineering projects.
- **PEO-3:** To extend their knowledge by effective communication skills, team work and intra disciplinary tasks.
- **PEO-4:** To promote knowledge corridor and unity between different races and cultures to engage in life learning process.



## Program Learning Outcomes (PLOs)

Sr. #.	PLO	Description
1.	<b>Engineering Knowledge</b>	An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
2.	<b>Problem Analysis</b>	An ability to identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences
3.	<b>Design/Development of Solutions</b>	An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
4.	<b>Investigation</b>	An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions
5.	<b>Modern Tool Usage</b>	An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities, with an understanding of the limitations.
6.	<b>The Engineer and Society</b>	An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.





Sr. #.	PLO	Description
7.	<b>Environment and Sustainability</b>	An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
8.	<b>Ethics</b>	Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
9.	<b>Individual and Team Work</b>	An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.
10.	<b>Communication:</b>	An ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11.	<b>Project Management:</b>	An ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.
12.	<b>Lifelong Learning</b>	An ability to recognize the importance of and pursue lifelong learning in the broader context of innovation and technological developments.



### **Admission Criterion:**

1. F.Sc.(Pre Engineering) or Equivalent with Mathematics, Physics and Chemistry & minimum of 60% marks and also must qualify the Entry Test of the University.

**OR**

2. 3 Year post Matric Diploma of Associate Engineer (DAE) in Civil Technology with minimum of 60% marks and must qualify the Entry Test conducted by the University. (Only against Reserved Seat for DAE's)

### **Scholarships Offered:**

The following scholarships are available to the students offered by MUST as well as other donor organizations;

- (a) MUST Need Based Scholarship
- (b) HEC Need Based Scholarship
- (c) EHSAAAS Undergraduate Scholarship Program
- (d) HBL Foundation Scholarship
- (e) Punjab Education Endowment Fund
- (f) Student Guardian Insurance Scheme
- (g) Kashmir Council Scholarship
- (h) Teachers Foundation Scholarship
- (i) Fauji Foundation Scholarship
- (j) Teachers Foundation Scholarship.



## Scheme of Studies

Semester - I (15 Cr.)				
Course Code	Course Title	Th. Cr.	Lab Cr.	Total Cr.
CIV-1131	Engineering Materials	2	1	3
CIV-1132	Engineering Drawing	1	2	3
COM-1105	Computer Fundamentals	0	1	1
CIV-1133	Basic Electromechanical Engineering	2	1	3
ENG-1407	Functional English	2	0	2
MAT-1115	Applied Calculus/Math-I	3	0	3
	<b>Total</b>	<b>10</b>	<b>5</b>	<b>15</b>
Semester - II (19Cr.)				
Course Code	Course Title	Th. Cr.	Lab Cr.	Total Cr.
CIV-1234	Engineering Survey	2	1	3
CIV-1235	Engineering Geology & Seismology	3	0	3
CIV-1236	Properties of Concrete	1	1	2
ARA-1201	Arabic	1	0	2
PKS-1217	Pakistan & Kashmir Studies	2	0	2
CIV-1237	Engineering Mechanics	3	1	4
MAT-1215	Applied Differential Equations/Math II	3	0	3
	<b>Total</b>	<b>15</b>	<b>3</b>	<b>18</b>



<b>Semester - III (15 Cr.)</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Th. Cr.</b>	<b>Lab Cr.</b>	<b>Total Cr.</b>
COM-2305	Computer Programming	1	1	2
CIV-2334	Advanced Engineering Survey	2	1	3
CIV-2338	Strength of Materials-I	2	1	3
CIV-2332	Civil Engineering Drawing & Graphics	1	2	3
ISL-2312	Islamic Studies	1	0	1
MAT-2315	Numerical Analysis/Math-III	3	0	3
	<b>Total</b>	<b>10</b>	<b>5</b>	<b>15</b>
<b>Semester - IV (19Cr.)</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Th. Cr.</b>	<b>Lab Cr.</b>	<b>Total Cr.</b>
CIV-2439	Quantity Surveying & Cost Estimation	2	1	3
CIV-2440	Soil Mechanics-I	3	1	4
CIV-2441	Theory of Structures-I	3	0	3
CIV-2442	Fluid Mechanics	3	1	4
CIV-2443	Geoinformatics	1	1	2
MAT-2415	Probability & Statistics/Math-IV	3	0	3
	<b>Total</b>	<b>15</b>	<b>4</b>	<b>19</b>



<b>Semester - V (19Cr.)</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Th. Cr.</b>	<b>Lab Cr.</b>	<b>Total Cr.</b>
CIV-3541	Theory of Structures-II	3	0	3
CIV-3544	Engineering Hydrology	2	1	3
CIV-3542	Advanced Fluid Mechanics	2	1	3
CIV-3538	Strength of Materials-II	3	1	4
ENG-3507	Business Communication	1	1	2
CIV-3545	Construction Engineering & Management	3	1	4
	<b>Total</b>	<b>14</b>	<b>5</b>	<b>19</b>
<b>Semester - VI (17Cr.)</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Th. Cr.</b>	<b>Lab Cr.</b>	<b>Total Cr.</b>
CIV-3646	Transportation Engineering – I	3	0	3
CIV-3647	Environmental Engineering-I	2	1	3
CIV-3648	Hydraulics Engineering	2	1	3
CIV-3649	Reinforced Concrete Design-I	3	0	3
CIV-3650	Steel Structures	3	0	3
CIV-3651	Architecture and Town Planning	2	0	2
	<b>Total</b>	<b>15</b>	<b>2</b>	<b>17</b>



<b>Semester - VII (18Cr.)</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Th. Cr.</b>	<b>Lab Cr.</b>	<b>Total Cr.</b>
CIV-4747	Environmental Engineering-II	2	0	2
CIV-4746	Transportation Engineering-II	3	1	4
CIV-4740	Soil Mechanics-II	2	1	3
CIV-4749	Reinforced Concrete Design-II	2	1	3
CIV-4752	Civil Engineering Project	0	3	3
ETRE-4708	Entrepreneurship	3	0	3
	<b>Total</b>	<b>12</b>	<b>6</b>	<b>18</b>
<b>Semester - VIII (15Cr.)</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Th. Cr.</b>	<b>Lab Cr.</b>	<b>Total Cr.</b>
CIV-4853	Irrigation Engineering	2	1	3
CIV-4854	Foundation Engineering	2	0	2
CIV-4855	Structural & Earthquake Engineering	3	0	3
CIV-4856	Engineering Economics	2	0	2
CIV-4857	Disaster Management	2	0	2
CIV-4752	Civil Engineering Project	0	3	3
	<b>Total</b>	<b>11</b>	<b>4</b>	<b>15</b>
	<b>Grand Total</b>	<b>102</b>	<b>34</b>	<b>136</b>



## Laboratories:

The department of civil engineering is continuously enhancing its laboratory facilities to meet with undergraduate program requirements as per Pakistan Engineering Council's guidelines. The details of laboratory equipment are as follows:

Sr.	Name of Laboratory	Lab(s) of Courses
1	<b>Transportation Engineering Laboratory</b>	1. Transportation Engineering-I 2. Transportation Engineering-II
2	<b>Computer Aided Design Laboratory</b>	1. Computer Fundamentals 2. Building Construction Drawing & Graphics (Autocad) 3. Computer Programming
3	<b>Fluid Mechanics and Hydraulics Engineering Lab</b>	1. Fluid Mechanics 2. Advanced Fluid Mechanics 3. Hydraulics Engineering 4. Engineering Hydrology 5. Irrigation Engineering
4	<b>Concrete Testing Laboratory</b>	1. Plain and Reinforced Concrete-I 2. Plain and Reinforced Concrete-II 3. Properties of Concrete
5	<b>Geotechnical Engineering Laboratory</b>	1. Geo-Technical Engineering-I 2. Geo-Technical Engineering-II 3. Foundation and Pavement Engineering



## Alumni Comments

To pursue Civil Engineering was my profound objective and MUST helped me attaining my pretention. Civil Engineering Department is an utmost professional outfit consisting of a highly competent faculty and desirable lab and research facilities. I successfully managed to compete for induction in Pakistan's most reputable organization due to demanding skills and numerous academic aspects incorporated by Civil Engineering Department (MUST). I recommend the Young aspirants of Civil Engineering for this highly professional institute



**IRFAN HAIDER**  
**Session: 2011-15**

I am honoured to share my experience as proud alumni. The strength of department lies in its highly qualified and experienced faculty, well-designed academic programs; supported by the state of art academic facilities such as fully equipped labs, libraries, lecture halls, video conferencing facilities, auditorium and seminar halls. The expertise, knowledge and skills of the teachers are outstanding. I am proud to say that today wherever I am, it is because of MUST, The Department of Civil Engineering and my teachers.



**M. IBRAR KHAN**  
**Session: 2010-14**





## MS STRUCTURAL ENGINEERING

The MS program in Civil Engineering emphasizes the practical applications of Structural Engineering. The program offers engineers the opportunity to advance their skills in these specialized areas. The successful MS graduates may develop their careers in Research and Development, Industry, Academia, Consultancy Organizations both nationally as well as internationally.

### Admission Criterion:

- B.Sc. Civil Engineering with at least 1<sup>st</sup> division or CGPA of 3.0/4.0 with no 3<sup>rd</sup> division in the Academic Carrier.
- Registered with Pakistan Engineering Council
- GAT (General) with at least qualifying score.
- University Entrance Test.

### Duration:

The normal duration of M.Sc. Structural Engineering is two years (four semesters) with maximum duration up to four years (eight semesters).



## Scheme of Studies:

<b>Compulsory Courses (21 Cr. Hr.)</b>			
<b>Sr. #</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Cr. Hr.</b>
1.	CE-101	Computer Methods in Structural Engineering	03
2.	STR-201	Advanced Structural Analysis	03
3.	STR-203	Properties of Structural Materials	03
4.	STR-209	Structural Dynamics and Earthquake Engineering	03
5.	STR-212	Repair, Maintenance, Strengthening and Retrofitting of Structures	03
6.	CE-102	Research Thesis	06

<b>Elective Courses (09 Cr. Hr.)</b>			
<b>Sr. #</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Cr. Hr.</b>
1.	STR-202	Seismic Design of Structures	3
2.	STR-204	Bridge Engineering	3
3.	STR-205	Advanced Design of Structures	3
4.	STR-206	Finite Element Methods	3
5.	STR-207	Advanced Strength of Materials	3
6.	STR-208	Advanced Steel Structures	3
7.	STR-210	Advanced Reinforced Concrete	3
8.	STR-211	Pre-Stressed Concrete	3
9.	WRI-302	Hydraulic Structures	3



10.	GTF-402	Dam Engineering	3
11.	GTF-403	Foundation Engineering	3
12.	TRP-501	Pavement Analysis and Design	3
13.	TRP-505	Railway Engineering	3
14.	TRP-506	Advanced Traffic Engineering and Management	3
15.	CEM-703	Construction Projects Scheduling and Control	3
16.	CEM-704	Safety Management in Construction	3
17.	CE-121	Nanotechnology in Engineering	3
18.	CE-122	Research Methodology and Statistical Analysis	3

### Alumni Comments

I am very privileged to have been a part of MUST. During my studies at MUST, I got the true essence of scholarship through the university's approach of teaching from first principles while preparing students to push the limits in state-of-the-art. All the necessary tools required for a successful academic career were available in addition to extra-curricular activities. I would surely like to thank MUST for the training given to me. I will always be a proud Alumnus of MUST.



**HASSAN RIAZ**  
**Session: 2016-18**



**SOCIETY OF CIVIL ENGINEERING MUST  
EXECUTIVE BODY  
2018-2020**

 DR. ANWAR KHATIB President	 NAVEED-UL-REHMAN Secretary	 ENGR. BILAL NISAR Treasurer	 ENGR. SOHAIB Member		
 MOHSIN BAIDIL Member	 GHANIYA SALEEM Member	 LALA ISMAIL Member	 ADIL NAROOF Member	 H. OMER HAMDAD Member	 AHMAD ULLAH Member
 ANSHAD HAZA CH Member	 GOHAR FARWAR Member	 JUNAID ASHRAF Member	 ARSLAN FAROOQ Member	 JAWEDULLAH KHAN Member	 YOUSUF USMANI Member

**SOCIETY OF CIVIL ENGINEERING MUST**





# DEPARTMENT OF **COMPUTER SYSTEM ENGINEERING**

## **Program Mission**

The Department of Computer Systems Engineering "To educate students with broad and in-depth knowledge of emerging technologies in computer systems engineering enabling them to be effective problem solver, entrepreneur and life-long learners to meet technological advancement and career, social and related challenges".

## **Degree Programs Offered**

B.S-Computer System Engineering  
MS-Computer System Engineering



**Chairperson:**

Engr. Dr. Naeem Iqbal Ratyal

Tel: +92-5827-960037

E-mail: [chairman.cse@must.edu.pk](mailto:chairman.cse@must.edu.pk)

**Message from Chairperson:**

Computer Systems Engineering is the most flourishing department at Mirpur University of Science and Technology. The department aspires to provide students with the in-demand skills of the industry, so that they can excel in their professions. The department is committed to achieve excellence in teaching and inculcating confidence in students. The principle goal is to engage students in the latest technologies and skills by exposing them to the committed faculty and well-equipped labs. Our motivation is to nurture their technical and leadership skills. On completion of degree, successful students have a wide range of options to embark their career. The major employers of Computer Systems Engineering Graduates are: Mobile Companies, PTCL, KRL, Pakistan Navy, PIA, NADRA, Passport Offices, Air Force, Stock Exchanges, Railway, Atomic Energy Commission, Software Developer Companies, Banks and various other organizations. Also, on successful completion of graduation students are eligible to apply for Masters/Post Graduate programs.



## Faculty Members

### Engr. Dr. Naeem Iqbal Ratyal

**Designation:** Associate Professor & Chairperson

**Qualification:** PhD(EE)

**Area of interest:** Image Processing

**Email:** chairman.cse@must.edu.pk

### Engr. M. Umair Javed Alam Sundhu (on study leave)

**Designation:** Assistant Professor

**Qualification:** PhD (CSE) in progress

**Area of interest:** Computer Architecture

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### Engr. Abdul Basit Awan

**Designation:** Assistant Professor

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**Area of interest:** Control Systems

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### Engr. Dr. Muhammad Waqar Aslam (on leave)

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### Engr. Muhammad Usman Khan

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### Engr. Bilal Ahmed

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**Qualification:** MS(EE)

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## Faculty Members

### Engr. Raja Muhammad Basharat Manzoor

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**Area of interest:** Signal Processing

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### Engr. Dr. Muhammad Ashfaq

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**Area of interest:** Image Processing

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### Engr. Qasim Yaqoob

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### Engr. Dr. Wahab Ali Gulzar

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### Engr. Waqas Riaz

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### Engr. Jibran Gul

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**Qualification:** MS(EE)

**Area of interest:** Data Mining, Software Quality Assurance

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## Faculty Members

### Engr. Hafiz Ata-ul- Mustafa Ahtisham

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### Engr. Sahrish Abid

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### Engr. Hafeez Ahmed

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### Engr. Sajid Hussain (on study leave)

**Designation:** Lecturer

**Qualification:** PhD (CSE) in progress

**Area of interest:** Parallel processing

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### Engr. Muhammad Abuzar (on study leave)

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**Qualification:** PhD (CSE) in progress

**Area of interest:** Parallel Processing, Compiler design

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## Lab Engineers

### Engr. Muhammad Waqas

**Designation:** Lecturer/Lab. Engineer

**Qualification:** MS(CSE)

**Area of interest:** Machine Learning, Pattern recognition

**E-mail:** engr.waqas.cse@must.edu.pk

### Engr. Haleema Sadia

**Designation:** Lab. Engineer

**Qualification:** MS(CSE)

**Area of interest:** Computer Architecture

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### Engr. Safeena Razaq

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**Qualification:** MS(CSE)

**Area of interest:** Pattern Recognition

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### Engr. Tahir Subhani

**Designation:** Lab. Engineer

**Qualification:** MS(CSE)

**Area of interest:** Computer Networks, Machine Learning

**E-mail:** tahir.cse@must.edu.pk



## **B.Sc. Computer System Engineering**

The department of Computer System Engineering has been established in 2005, since then it is continuously expanded and is on the road of progress. It is the pioneer department in its field in the state of AJ&K and has been imparting useful and erudite workforce to the nation. The facilities and opportunities to faculty and students are exemplary.

The Department's mission is to provide the best quality education in Computer Systems Engineering centered around the skills and opportunities provided to the graduates in terms of core competencies such as engineering design skills, analytical skills, and critical and independent thinking skills to address the need of the industry, the society, and the introduction of new strategic computer industries.

### **Program Educational Objectives (PEO's)**

1. Be able to address real life problems by translating learned engineering knowledge for designing and implementing computing systems.

2. Be able to apply in-depth computer systems engineering knowledge to identify and solve technical challenges fulfilling the needs of the society with consideration of the environmental impact and ethical values.
3. Be able to lead as an individual or contribute as a team member and continually adapt with the upcoming trends of technology by continuous professional development for meeting individual and societal goals.

### **Program Learning Outcomes (PLO's)**

**1: Engineering Knowledge:** An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

**2: Problem Analysis:** An ability to identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.



**3: Design/Development of Solutions:** An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

**4: Investigation:** An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions.

**5: Modern Tool Usage:** An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.

**6: The Engineer and Society:** An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent

responsibilities relevant to professional engineering practice and solution to complex engineering problems.

**7: Environment and Sustainability:** ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.

**8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

**9: Individual and Teamwork:** An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.

**10: Communication:** An ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.



**11: Project Management:** An ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.

**12: Lifelong Learning:** An ability to recognize importance of and pursue lifelong learning in the broader context of innovation and technological developments.

### Admission Requirements

1. F.Sc. Pre-Engineering/ICS (Math, Physics, Computer Science) at least 60 % mark  
OR
2. 3 Year post metric Diploma of Associate Engineer in relevant field with minimum of 60% (Only against Reserved Seat for DAE's)
3. An Entry Test conducted by the University



### Scheme of Study (B.Sc. Computer System Engineering)

<b>Minimum Duration:</b>		8 Semesters			
<b>Courses:</b>		43			
<b>Project:</b>		6 Credits			
<b>Comprehensive oral examination:</b>		S/U Basis			
<b>Internship/Practical Training:</b>		S/U Basis			
<b>Total Credits</b>		134			
<b>1<sup>st</sup> Semester</b>					
<b>Code</b>	<b>Title</b>	<b>Credit Hrs.</b>	<b>Theory Contact Hrs.</b>	<b>Practical Contact Hrs.</b>	<b>Pre- requisite</b>
CSE-111	Computer Fundamentals	2+1	2	3	-
HS-112	Islamic Studies	2+0	2	0	-
GS-113	Calculus and Analytical Geometry	3+0	3	0	-
GS-114	Applied Physics	3+1	3	3	-
HS-115	Functional English	2+0	2	0	-
CSE-116	Workshop Practice	0+1	0	3	-
HS-117	Arabic	2+0	2	0	-
<b>Total</b>		<b>17</b>	<b>14</b>	<b>09</b>	-
<b>2<sup>nd</sup> Semester</b>					
<b>Code</b>	<b>Title</b>	<b>Credit Hrs.</b>	<b>Theory Contact Hrs.</b>	<b>Practical Contact Hrs.</b>	<b>Pre-requisite</b>
CSE-121	Computer Programming	3+1	3	3	-
CSE-122	Circuit Analysis	3+1	3	3	-
GS-123	Multivariable Calculus	3+0	3	0	-
HS-124	Communication Skills	2+0	2	0	-
CSE-125	Electronic Devices & Circuits	3+1	3	3	-
<b>Total</b>		<b>17</b>	<b>14</b>	<b>09</b>	-



3rd Semester					
Code	Title	Credit Hrs.	Theory Contact Hrs.	Practical Contact Hrs.	Pre- requisite
CSE-231	Digital Logic Design	3+1	3	3	-
GS-232	Discrete Structures	3+0	3	0	-
CSE-233	Object Oriented Programming	3+1	3	3	CSE-121
HS-234	Pakistan Studies	2+0	2	0	-
GS-235	Differential Equations	3+0	3	0	-
CSE-236	Engineering Drawing	0+1	0	3	-
<b>Total</b>		<b>17</b>	<b>14</b>	<b>09</b>	-
4th Semester					
Code	Title	Credit Hrs.	Theory Contact Hrs.	Practical Contact Hrs.	Pre-requisite
CSE-241	Computer Organization and Architecture	3+0	3	0	-
CSE-242	Data Structures and Algorithms	3+1	3	3	-
CSE-243	Signals & Systems	3+1	3	3	-
GS-244	Linear Algebra	3+0	3	0	-
CSE-245	Principle of Management	3+0	3	0	-
<b>Total</b>		<b>17</b>	<b>15</b>	<b>06</b>	-
5th Semester					
Code	Title	Credit Hrs.	Theory Contact Hrs.	Practical Contact Hrs.	Pre-requisite
CSE-351	Microprocessors and Interfacing	3+1	3	3	-
HS-352	Technical Writing	3+0	3	0	-
CSE-353	Computer Communication and Networks	3+1	3	3	-
CSE-354	Database Management Systems	3+1	3	3	-
CSE-355	Probability Methods in Engineering	3+0	3	0	-
<b>Total</b>		<b>18</b>	<b>15</b>	<b>09</b>	-



6th Semester					
Code	Title	Credit Hrs.	Theory Contact Hrs.	Practical Contact Hrs.	Pre-requisite
CSE-361	Digital Systems Design	3+1	3	3	CSE-231
CSE-362	Software Engineering	3+0	3	0	-
CSE-363	Operating Systems	3+1	3	3	-
CSE-364	Digital Signal Processing	3+1	3	3	CSE-243
	Comp. Engg. Depth Elective-I	2+1	2	3	-
	<b>Total</b>	<b>18</b>	<b>14</b>	<b>12</b>	
7th Semester					
Code	Title	Credit Hrs.	Theory Contact Hrs.	Practical Contact Hrs.	Pre-requisite
	ID Elective-I	2+1	2	3	-
HS-472	Professional Ethics	3+0	3	0	-
	Comp. Engg. Depth Elective-II	2+1	2	3	-
	Comp. Engg. Depth Elective-III	2+1	2	3	-
CSE-475	Senior Design Project -1	0+2	0	6	-
	<b>Total</b>	<b>14</b>	<b>9</b>	<b>15</b>	
8th Semester					
Code	Title	Credit Hrs.	Theory Contact Hrs.	Practical Contact Hrs.	Pre- requisite
	ID Elective II	2+1	2	3	-
GS-482	Entrepreneurship	3+0	3	0	-
GS-483	Sociology and Development	3+0	3	0	-
	Comp. Engg. Depth Elective-IV	2+1	2	3	-
CSE-485	Senior Design Project -2	0+4	0	12	-
	<b>Total</b>	<b>16</b>	<b>10</b>	<b>18</b>	





	<b>Group 1</b>	<b>Group 2</b>	<b>Group3</b>
Major Based Core (Depth Elective-I)	Embedded Systems	Embedded Systems	Numerical Analysis
Major Based Core (Depth Elective-II)	Artificial Intelligence	Wireless and Mobile Networks	Software quality Assurance
Major Based Core (Depth Elective-III)	Mobile Application Development	Parallel and Distributed Computing	Data Warehouse and mining
Major Based Core (Depth Elective-IV)	Digital Image Processing	Network Security and Cryptography	Software Project Management
IDE (Elective-I)	IDE (Elective-I)	IDE (Elective-I)	IDE (Elective-I)
IDE (Elective-II)	IDE (Elective-II)	IDE (Elective-II)	IDE (Elective-II)



### List of Electives for BSc COMPUTER (SYSTEMS) ENGINEERING PROGRAM CSE Depth Electives

Course	Prerequisite	Lec. Lab Cr. Hr		
Mobile application development	None	2	1	3
Artificial intelligence	None	2	1	3
Network security and cryptography	Computer Communication & Networks	2	1	3
Wireless and mobile networks	Computer Communication & Networks	2	1	3
Digital Image Processing	Computer Programming	2	1	3
Software Project Management	Software Engineering	2	1	3
Software Quality Assurance	None	3	0	3
Data Warehousing and Mining	Database Management Systems	2	1	3
Parallel and Distributed Computing	Object Oriented Programming, Operating System	3	0	3
Embedded Systems	Microprocessor & Interfacing	2	1	3
Numerical Analysis	Differential Equation, Multivariable Calculus	2	1	3

### INTER-DISCIPLINARY ENGINEERING ELECTIVES (IDEE)

Course	Prerequisite	Lec. Lab Cr.		
Communication Systems	Signals and Systems	2	1	3
Fault Tolerant Computing	Computer Architecture	2	1	3
Neural Networks and Fuzzy Logic	Artificial Intelligence	2	1	3
Robotics	Control Engineering	2	1	3
Systems Programming	Operating Systems, Multiprocessors and Interfacing	2	1	3
Multimedia Systems	Communication Systems	3	0	3



## Laboratories

The Department of Computer Systems Engineering has well equipped laboratories.

### Computer Lab:

The department has a well-quipped lab with latest

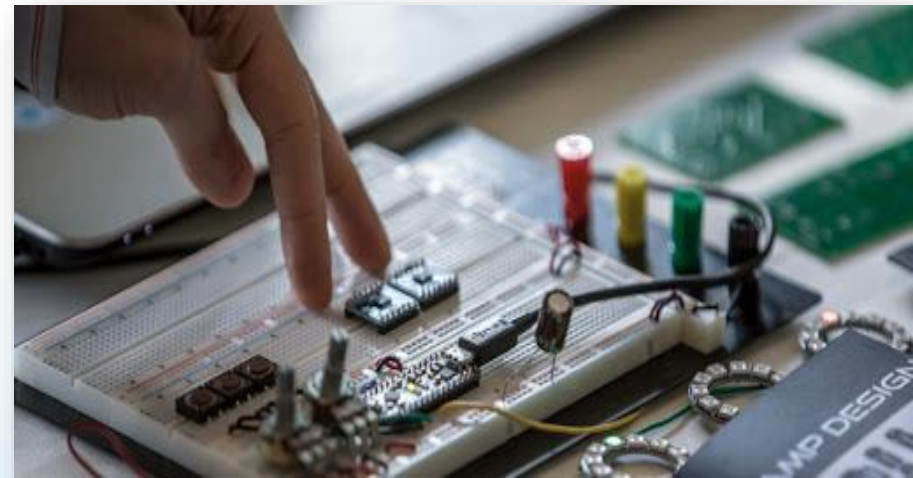


computers which covers Digital Image Processing, Artificial

Intelligence, DBMS, Workshop Practice, Computer Networks, Mobile Wireless Networks, Computer Fundamentals and Computer Programming subjects.

### Embedded Lab:

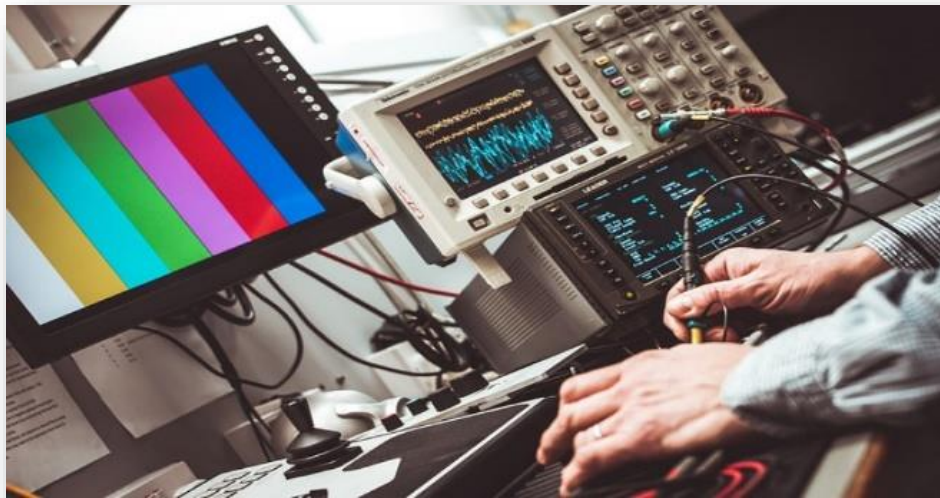
Embedded system lab is equipped with latest computers, Microprocessor/Micro-controller trainers, Digital trainers and FPGA kits for various subjects like Microprocessors & Interfacing, Computer Architecture, Digital System Design, Digital Logic Design, Data Structure & Algorithms.





### **Communication/DSP Lab:**

Communication lab has Analog and Digital communication trainers, DSP trainers, oscilloscopes, DSK module kits, function generators and personal computers for the various subjects like digital Signal Processing, Communication Systems, Signal & Systems.



**Project Lab.** The department also has a final year project lab for the students to design/implement their final year projects.





It is a great honor for me to be a part of Computer Systems Engineering Department of MUST. The facilities available to students are commendable. The Labs are up to date and the equipment available is the modern of its kind. The student help desk in the department ensures that students get their queries responded properly on time. The curriculum is thoroughly revised and up to the standards of Engineering all over the world. The regular student counselling in the department has its overall impact in the future development of true professionals.



**Areeba Aftab**  
**B.Sc. CSE**  
**8th Semester**

I am really lucky to get admission in the Computer Systems Engineering department of MUST. The department offers a unique environment of education and co-curricular activities and its balance has yielded many successful graduates in all walks of life. There is a great focus on practical work and all the necessary equipment in the labs are in abundance and is upgraded regularly. The faculty is very competent. It is a real high ground where quality engineers are produced and are serving the nation.



**Ahsan Azam**  
**B.Sc. CSE**  
**6<sup>th</sup> Semester**

### **Students' Messages**



## M.Sc. Computer Systems Engineering Program Entry Requirement

### Entry Requirement

#### Eligibility

1. Four years BS/BE/BSc. Degree in Computer (Systems) Engineering, Software Engineering, Electronic Engineering, Electrical Engineering, Telecommunication Engineering, or a four years degree in any other related discipline.
2. The candidates will be required to complete the deficiency coursework prior to the M.Sc. (CSE) coursework to ensure the pre-requisite competency in (CSE).
3. The deficiency coursework will be determined on the basis of the core (CSE) courses of the BS (CSE) degree.

### Duration

1. Two years (four semesters).
2. Minimum 30 credit hours from graduate Computer (Systems) Engineering courses.

### Degree Requirements

In order to obtain M.Sc. (CSE) degree a student must:

- Pass three (3) courses (9 credit hours) from the core courses
- Pass five (5) courses (15 credit hours) from graduate elective courses.
- Satisfactorily complete a Research Project Thesis of 6 credit hours.
- Satisfactory completion of Comprehensive Oral Examination



## Core Courses

The candidate has to complete a minimum of three core courses from the following list. The department may offer core/elective courses from the given list as per the availability of resources.

Code	Course Title	Cr. Hrs.
<b>CSE-CR-01</b>	Advanced Computer Architecture	<b>3</b>
<b>CSE-CR-02</b>	Advanced Computer Networks	<b>3</b>
<b>CSE-CR-03</b>	Advanced Digital Image Processing	<b>3</b>
<b>CSE-CR-04</b>	Advanced Operating Systems	<b>3</b>
<b>CSE-CR-05</b>	Stochastic Processes	<b>3</b>
<b>CSE-CR-06</b>	Advanced Database Management Systems	<b>3</b>
<b>CSE-CR-07</b>	Advanced Software Engineering	<b>3</b>
<b>CSE-CR-08</b>	Thesis	<b>6</b>
<b>CSE-CR-09</b>	Comprehensive Oral Examination	<b>*S/U</b>

**\*S/U Satisfactory/Un-satisfactory**

## Graduate Electives

Candidate has to select five elective courses from graduate electives courses as per the availability of resources

Candidate has to select five elective courses from graduate electives courses as per the availability of resources.

Code	Course Title	Cr. Hrs.
<b>CSE-EL-01</b>	Advanced Digital Signal Processing	<b>3</b>
<b>CSE-EL-02</b>	Advanced Digital System Design	<b>3</b>
<b>CSE-EL-03</b>	Advanced Communication Systems	<b>3</b>
<b>CSE-EL-04</b>	Machine Learning	<b>3</b>
<b>CSE-EL-05</b>	Pattern Recognition	<b>3</b>
<b>CSE-EL-06</b>	Multimedia Systems	<b>3</b>
<b>CSE-EL-07</b>	Computer Vision	<b>3</b>
<b>CSE-EL-08</b>	Advanced Mobile & Wireless Communication	<b>3</b>
<b>CSE-EL-09</b>	Software Defined Radios	<b>3</b>
<b>CSE-EL-10</b>	Parallel and Distributed Computing	<b>3</b>
<b>CSE-EL-11</b>	Advanced Security and Forensics	<b>3</b>
<b>CSE-EL-12</b>	Advanced Artificial Intelligence	<b>3</b>
<b>CSE-EL-13</b>	Fuzzy Logic & Neural Networks	<b>3</b>
<b>CSE-EL-14</b>	Semantic Web	<b>3</b>
<b>CSE-EL-15</b>	Big Data Analytics	<b>3</b>
<b>CSE-EL-16</b>	Genetic Algorithms	<b>3</b>
<b>CSE-EL-17</b>	Scientific Writing and Research Methodologies	<b>3</b>



## Students' Messages

The department of computer systems engineering is imparting quality Master's education in the relevant field with main focus on research. The environment for research and advance studies in the department are exemplary and there are bright chances of getting further research opportunities and fellowships in the foreign Universities for advance studies. The course work taught at master's level is up to date and give us an opportunity to further enhance our bachelor knowledge.



**Amir  
Saddique  
M.Sc. CSE  
4<sup>th</sup> Semester**

Studying as Master student at Computer Systems Engineering Department of MUST is a real great opportunity for me. I am graduated from the same Institution and it was always my desire to complete my master studies from a high reputed institute like MUST. The culture of research and innovative ideas are in abundance here and there is a conducive environment to test those ideas. There are different research grants available in the department for higher studies. The modern research material can be easily accessed in the department.



**Sajida  
Sultana  
M.Sc. CSE  
4<sup>th</sup> Semester**



# DEPARTMENT OF **ELECTRICAL ENGINEERING**

## **Program Vision**

Endeavour to provide quality Electrical Engineering education for the development of human resource, which contributes for the development of highly skilled workforce, innovators and entrepreneurs.

## **Degree Programs Offered**

- B.Sc. Electrical Engineering
- M.Sc. Electrical Engineering
- Ph.D. Electrical Engineering



**Chairperson:**

Engr. Dr. Anzar Mehmood

**Tel:** +92-5827-960099

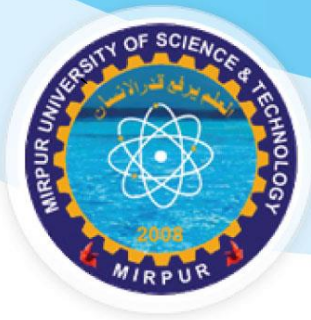
**E-mail:** chairman\_ee@must.edu.pk

**Message from Chairperson:**

Department of Electrical Engineering (DEE) was initially raised in 1980 as a unit college of the University of AJ&K, Muzaffarabad. On its establishment in 2008, the DEE was merged in Mirpur University of Science and Technology (MUST) and is offering programs in Electrical, Electronics, and Telecommunication at Undergraduate, Masters, and Ph.D. levels. The DEE enjoys a bright history of educating the students in diverse disciplines. Situated in the city center, the DEE endeavors to provide a favorable climate of knowledge 12 laboratories, library furnished with modern facilities, undergraduate hostels for boys and girls, examination halls, and lecture rooms. Since its inception, the DEE has worked hard to improve the quality of its faculty. The DEE is honored to have a vibrant combination of highly qualified faculty, graduated from universities of high repute. The DEE MUST is graduating its students for last 40 years and its graduates have meaningful and conspicuous representation in offices related to power, communication, and electronic industry within and even outside Pakistan. Furthermore, faculty and students of DEE MUST boldly contribute towards co-curriculum activities. Continuing record of successes adds to the honor of DEE faculty and students. The DEE MUST strive to enrich its traditions and disciplined environment of the campus.



**Faculty members of Electrical Engineering**



## Faculty Members

### Engr. Dr. Anzar Mahmood

**Designation:** Associate Professor / Head of Department

**Qualification:** Ph.D.

**Area of interest:** Electrical Engineering (Power)

### Engr. Dr. Syed Hassan Mujtba Jafri

**Designation:** Professor

**Qualification:** Ph.D.

**Area of interest:** Engineering Sciences

### Engr. Dr. Ilyas Menhas

**Designation:** Associate Professor

**Qualification:** Ph.D.

**Area of interest:** Electrical (Control)

### Engr. Muhammad Waris

**Designation:** Associate Professor

**Qualification:** M.Sc.

**Area of interest:** Optical Communication

### Engr. M. Shabir Mirza

**Designation:** Associate Professor

**Qualification:** B.Sc.

**Area of interest:** Electrical Engineering

### Engr. Dr. Muhammad Sajid

**Designation:** Associate Professor

**Qualification:** Ph.D.

**Area of interest:** Image Processing

### Engr. Dr. Sajjad Manzoor

**Designation:** Assistant Professor

**Qualification:** Ph.D.

**Area of interest:** Electrical Engineering

### Engr. Dr. Saeed Ahmed

**Designation:** Assistant Professor

**Qualification:** Ph.D.

**Area of interest:** Electrical (Smart Grid)



## Faculty Members

### Engr. Dr. Zafar Ali Khan

**Designation:** Assistant Professor

**Qualification:** Ph.D.

**Area of interest:** Electrical Engineering (Power)

### Engr. M. Arif Khan

**Designation:** Assistant Professor

**Qualification:** M.Sc.

**Area of interest:** Electrical Engineering

### Engr. Shahid Amin

**Designation:** Assistant Professor

**Qualification:** Ph.D. (Cont.)

**Area of interest:** Electronics

### Engr. Muhammad Imran

**Designation:** Assistant Professor

**Qualification:** Ph.D. (Cont.)

**Area of interest:** Electronics

### Engr. Asif Raza Butt

**Designation:** Assistant Professor

**Qualification:** Ph.D. (Cont.)

**Area of interest:** Electronics

### Engr. Munawar Sultan

**Designation:** Assistant Professor

**Qualification:** Ph.D. (Cont.)

**Area of interest:** Power

### Engr. Rab Nawaz

**Designation:** Assistant Professor

**Qualification:** Ph.D. (Cont.)

**Area of interest:** Power

### Engr. Mirza AteeqAhmed Baig

**Designation:** Assistant Professor

**Qualification:** Ph.D. (Cont.)

**Area of interest:** Power System and Energy Management



## Faculty Members

### Engr. Dr. Anwar Ul Haq

**Designation:** Lecturer

**Qualification:** Ph.D.

**Area of interest:** Electrical and Computer Engineering  
(Energy Informatics)

### Engr. Faheem Ashiq

**Designation:** Lecturer

**Qualification:** Ph.D. (Cont.)

**Area of interest:** Power System and Energy  
Management

### Engr. Shahbaz Baig

**Designation:** Lecturer

**Qualification:** Ph.D. (Cont.)

**Area of interest:** Power System and Energy  
Management

### Engr. Firdous Kanwal

**Designation:** Lecturer

**Qualification:** Ph.D. (Cont.)

**Area of interest:** Electronics

### Engr. AnilaKousar

**Designation:** Lecturer

**Qualification:** Ph.D. (Cont.)

**Area of interest:** Power System and Energy  
Management

### Engr. Adil Amin

**Designation:** Lecturer

**Qualification:** Ph.D. (Cont.)

**Area of interest:** Power System and Energy  
Management



## Faculty Members

### **Engr. BinishKanwal**

**Designation:** Lecturer

**Qualification:** M.Sc.

**Area of interest:** Electronics

### **Engr. Nazish Habib**

**Designation:** Lecturer

**Qualification:** M.Sc.

**Area of interest:** Electronics

### **Engr. Jabbar Younis**

**Designation:** Lecturer

**Qualification:** M.Sc.

**Area of interest:** System On Chip

### **Engr. M. Usman Bashir**

**Designation:** Lecturer

**Qualification:** M.Sc.

**Area of interest:** Electrical Engineering (Power)

### **Engr. HirraArshid**

**Designation:** Lecturer

**Qualification:** M.Sc.

**Area of interest:** Engineering Management

### **Engr. Bilal Munir**

**Designation:** Lecturer

**Qualification:** M.Sc.

**Area of interest:** Electrical (Power)



## Faculty Members

### **Engr. Usama Samad**

**Designation:** Lab Engineer / Jr. Lecturer

**Qualification:** M.Sc.

**Area of interest:** Control

### **Engr. Hassan Talal**

**Designation:** Lab Engineer / Jr. Lecturer

**Qualification:** M.Sc.

**Area of interest:** Electronics

### **Engr. M. Usman Zafar**

**Designation:** Lab Engineer / Jr. Lecturer

**Qualification:** M.Sc.

**Area of interest:** Electrical Engineering (Power)

### **Engr. Mahmood Ul Hassan**

**Designation:** Lab Engineer

**Qualification:** M.Sc.

**Area of interest:** Electronics

### **Engr. Qasim Mehmood**

**Designation:** Lab Engineer

**Qualification:** M.Sc.

**Area of interest:** Electrical Engineering (Power)





## Faculty Members (on Study Leave)

Sr. No.	Name	Designation	Degree	Institution/Country	Specialization
1	<b>Engr. Imran Aziz</b>	Lecturer	Ph.D. (Cont.)	South Korea	Telecommunication
2	<b>Engr. Hassan Ali Bhatti</b>	Lecturer	Ph.D. (Cont.)	Uppsala University Sweden	Electronics
3	<b>Engr. Omer Sher</b>	Lecturer	Ph.D. (Cont.)	Uppsala University Sweden	Electronics
4	<b>Engr. Mirza Jabbar Aziz Baig</b>	Lecturer	Ph.D. (Cont.)	Memorial University Canada	Electrical (Power)
5	<b>Engr. Sohaib Manzoor</b>	Lecturer	Ph.D. (Cont.)	China	Telecommunication
6	<b>Engr. Shafaq Ejaz</b>	Lecturer	Ph.D. (Cont.)	Germany	Electronics
7	<b>Engr. Kaab Rustam</b>	Lab Engineer	Ph.D. (Cont.)	HFTL Leipzig, Germany	Electronics
8	<b>Engr. Mamoon Akbar</b>	Lab Engineer / Jr. Lecturer	Ph.D. (Cont.)	Tampere University of Technology, Finland	Renewable Energy
9	<b>Engr. Tamoor Shafique</b>	Lab Engineer / Jr. Lecturer	Ph.D. (Cont.)	Staffordshire University, UK	Electrical
10	<b>Engr. Usman Mussadiq</b>	Lab Engineer / Jr. Lecturer	Ph.D. (Cont.)	MUST, Mirpur	Power System and Energy Management



## Electrical Engineering

Electrical, the mother department of Mirpur University of Science and Technology (MUST), Mirpur and first department of Engineering sphere with University of Azad Jammu & Kashmir, came into being since the very inception of UAJ&K in 1980. This, of course, stands at the apex of engineering arena. The communication, Power, Computer & Avionics are the off spring seedlings of Electrical Engineering. Electrical Engineers design systems, system components and devices with innovative approach. Electrical Engineers find vast horizon of opportunities to ensure their contribution in facilitating the life on earth. Their contribution may be traced there in communication computers, defense, design, aerospace also, more effectively in the telecom, electronic power and control industry. No doubt, life without electrical is a tale of Stone Age. The absorption of electrical engineers is found largely in WAPDA, PTCL, Pakistan Navy, PIA, Air Force, Atomic Energy

Commission, KRL, POF, AWC, PWD, NDC, Education, Telecomm and Power industry, modern textile industry, Hydel Power and Electricity Department.





## Program Mission

The Department of Electrical Engineering seeks to provide comprehensive, rigorous and accredited educational programme for the undergraduate and graduate students for the development of well rounded, educated, productive and ethical engineers with robust professional skills, who are capable of exploring diverse interest and can launch successfully into variety of careers offering learning, services and leadership role in various national and international organizations.

## Program Educational Objectives (PEOs)

- PEO-1: Serve competently in national and international industry or academia by showing excellent skills and knowledge in the field of Electrical Engineering
- PEO-2: Exhibit the quest for learning and initiative through elevation in education or growth in professional status
- PEO-3: Demonstrate commitment to ethical practices, community service and societal contribution



## Program Learning Outcomes (PLOs)

Sr. #.	PLO	Description
1.	<b>Engineering Knowledge</b>	An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
2.	<b>Problem Analysis</b>	An ability to identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences
3.	<b>Design/Development of Solutions</b>	An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
4.	<b>Investigation</b>	An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions
5.	<b>Modern Tool Usage</b>	An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities, with an understanding of the limitations.
6.	<b>The Engineer and Society</b>	An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.



Sr. #.	PLO	Description
7.	<b>Environment and Sustainability</b>	An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
8.	<b>Ethics</b>	Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
9.	<b>Individual and Team Work</b>	An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.
10.	<b>Communication:</b>	An ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11.	<b>Project Management:</b>	An ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.
12.	<b>Lifelong Learning</b>	An ability to recognize the importance of and pursue lifelong learning in the broader context of innovation and technological developments.



### Admission Criterion:

- F.Sc Pre-Engineering with at least 60% marks  
Or
- 3 Years Diploma of Associate Engineer in Electrical / Electronic Engineering with minimum of 60%(Only against reserved seats for DAE's)
- Entry Test conducted by the University

### Duration:

8-14 Semesters

### Scholarships Offered:

- |   |   |
|---|---|
| 1. University Merit Scholarship Scheme    | 9. National Bank Scholarship                                  |
| 2. MUST-Need Based Scholarship Program    | 10. Institutions of Engineers Pakistan (Saudi Arabian Center) |
| 3. HBL Foundation Stipend Scheme (HBLFSS) | 11. AJ&K Council Scholarship Scheme                           |
| 4. HEC-Need Based Scholarship Programme   | 12. AJ&K State Talent Scholarship Scheme                      |
| 5. Provincial Government Scholarship      | 13. Punjab Educational Endowment fund (PEEF)                  |
| 6. Benevolent fund scholarships           | 14. USAID Scholarship   |
| 7. Pakistan Engineering Congress          | 15. Fauji Foundation  |
| 8. Banking Council Scholarship            | 16. Diya Pakistan   |
|   | 17. ASHAI Educational Trust                                   |



## Scheme of Study (B.Sc. Electrical Engineering)

<b>Duration:</b>	8-14 Semesters (4-7 Academic Years)
<b>Courses:</b>	136 Credits
<b>Final Year Project:</b>	6 Credits
<b>Total:</b>	140 Credits
<b>Oral Comprehensive Examinations:</b>	S/U Basis
<b>Internship:</b>	S/U Basis

Semester 1								
Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
EE-111	Linear Circuit Analysis	3	1	4	3	3	6	
EE-112	Introduction to Computing	1	1	2	1	3	4	
EE-113	Workshop Practice	0	1	1	0	3	3	
GS-114	Applied Physics	3	1	4	3	3	6	
GS-115	Calculus & Analytical Geometry	3	0	3	3	0	3	
HS-116	Functional English	3	0	3	3	0	3	
<b>Total</b>		<b>13</b>	<b>4</b>	<b>17</b>	<b>13</b>	<b>12</b>	<b>25</b>	



Semester 2								
Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
EE -121	Programming Fundamentals	2	1	3	2	3	5	
HS -122	Health Safety and Environment	3	0	3	3	0	3	
EE -123	Basic Electronics	3	1	4	3	3	6	
GS -124	Linear Algebra	3	0	3	3	0	3	
HS -125	Communication Skills	2	0	2	2	0	2	
HS -126	Islamic Studies	3	0	3	3	0	3	
<b>Total</b>		<b>16</b>	<b>2</b>	<b>18</b>	<b>16</b>	<b>6</b>	<b>22</b>	
Semester 3								
Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
EE-231	Probability Methods in Engineering	2	0	2	2	0	2	
EE-232	Data Structures and Algorithms	2	1	3	2	3	5	EE-112
EE-233	Digital Logic Design	3	1	4	3	3	6	
EE-234	Engineering Drawing	0	1	1	0	3	3	
HS-235	Pakistan & Kashmir Studies	3	0	3	3	0	3	
GS-236	Differential Equations	3	0	3	3	0	3	
<b>Total</b>		<b>13</b>	<b>3</b>	<b>16</b>	<b>13</b>	<b>9</b>	<b>22</b>	





Semester 4								
Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
EE-241	Electrical Machines – I	2	1	3	2	3	5	
EE-242	Signal and Systems	2	1	3	2	3	5	
EE-243	Electrical Network Analysis	3	1	4	3	3	6	EE-111
HS-244	Technical Report Writing	3	0	3	3	0	3	
GS-245	Complex Variables & Transforms	3	0	3	3	0	3	
<b>Total</b>		<b>13</b>	<b>3</b>	<b>16</b>	<b>13</b>	<b>9</b>	<b>22</b>	
Semester 5								
Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
EE-351	Linear Control Systems	3	1	4	3	3	6	
EE-352	Microprocessor Systems	2	1	3	2	3	5	
EE-353	Electromagnetic Field Theory	3	0	3	3	0	3	
EE-354	Power Electronics	2	1	3	2	3	5	
EE-355	Electronic Circuit Design	3	1	4	3	3	6	
<b>Total</b>		<b>13</b>	<b>4</b>	<b>17</b>	<b>13</b>	<b>12</b>	<b>25</b>	



Semester 6								
Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
EE-361	Communication System	2	1	3	2	3	5	EE-242
HS-362	Engineering Management & Entrepreneurship	3	0	3	3	0	3	
EE-363	Instrumentation and Measurement	3	1	4	3	3	6	
EE-364	Electrical Machines - II	3	1	4	3	3	6	
HS-365	Arabic	2	0	2	2	0	2	
<b>Total</b>		<b>13</b>	<b>3</b>	<b>16</b>	<b>13</b>	<b>9</b>	<b>22</b>	
Semester 7 (Option I*)								
Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
EE-471	Power System Analysis	3	1	4	3	3	6	
EE-472	Power Distribution and Utilization	3	1	4	3	3	6	
EE-473	Power Generation	3	0	3	3	0	3	
EE-474	Electrical Power Transmission	3	1	4	3	3	6	
EE-475	Final Year Project – I	0	3	3	0	9	9	
<b>Total</b>		<b>12</b>	<b>6</b>	<b>18</b>	<b>12</b>	<b>18</b>	<b>30</b>	



Semester 7 (Option I**)								
Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
EE-471	Introduction to Nanotechnology	3	1	4	3	3	6	
EE-472	Digital System Design	3	1	4	3	3	6	EE-233
EE-473	Digital Control System	3	0	3	3	0	3	EE-351
EE-474	Digital Signal Processing	3	1	4	3	3	6	EE-242
EE-475	Final Year Project – I	0	3	3	0	9	9	
<b>Total</b>		<b>12</b>	<b>6</b>	<b>18</b>	<b>12</b>	<b>18</b>	<b>30</b>	
Semester 7 (Option I***)								
Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
EE-471	Satellite Communication	3	1	4	3	3	6	
EE-472	Computer Communication Network	3	1	4	3	3	6	
EE-473	Digital Communication	3	0	3	3	0	3	
EE-474	Digital Signal Processing	3	1	4	3	3	6	EE-242
EE-475	Final Year Project – I	0	3	3	0	9	9	
<b>Total</b>		<b>12</b>	<b>6</b>	<b>18</b>	<b>12</b>	<b>18</b>	<b>30</b>	



Semester 8 (Option I*)								
Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
HS-481	Engineering Ethics	3	0	3	3	0	3	
EE-482	High Voltage Engineering	3	1	4	3	3	6	
EE-483	Power System Protection	3	1	4	3	3	6	
	Elective -1(Option I*)	3	1	4	3	3	6	
EE-484	Final Year Project – II	0	3	3	0	9	9	
EE-485	Internship/Practical Training	S/U	S/U	S/U	S/U	S/U	S/U	
<b>Total</b>		<b>12</b>	<b>6</b>	<b>18</b>	<b>12</b>	<b>18</b>	<b>30</b>	
Semester 8 (Option II**)								
Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
HS-481	Engineering Ethics	3	0	3	3	0	3	
EE-482	Embedded System Design	3	1	4	3	3	6	
EE-483	VLSI Design	3	1	4	3	3	6	
	Elective -1(Option II**)	3	1	4	3	3	6	
EE-484	Final Year Project – II	0	3	3	0	9	9	
EE-485	Internship/Practical Training	S/U	S/U	S/U	S/U	S/U	S/U	
<b>Total</b>		<b>12</b>	<b>6</b>	<b>18</b>	<b>12</b>	<b>18</b>	<b>30</b>	



### Semester 8 (Option III\*\*\*)

Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
HS-481	Engineering Ethics	3	0	3	3	0	3	
EE-482	RF and Microwave Engineering	3	1	4	3	3	6	
EE-483	Wave Propagation and Antennas	3	1	4	3	3	6	
	Elective -1(Option III***)	3	1	4	3	3	6	
EE-484	Final Year Project – II	0	3	3	0	9	9	
EE-485	Internship/Practical Training	S/U	S/U	S/U	S/U	S/U	S/U	
<b>Total</b>		<b>12</b>	<b>6</b>	<b>18</b>	<b>12</b>	<b>18</b>	<b>30</b>	

### List of Domain Specific Electives

#### List of Elective Courses (Option-I\*)

Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
EE-48E6	Electrical Machine Design	3	1	4	3	3	6	
EE-48E7	Renewable Energy Systems	3	1	4	3	3	6	
EE-48E8	Power System Operation and Control	3	1	4	3	3	6	
EE-48E9	Smart Grids	3	1	4	3	3	6	



### List of Elective Courses (Option-II\*\*)

Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theory	Practical	Total	Theory	Practical	Total	
EE-48E6	Opto-Electronics	3	1	4	3	3	6	
EE-48E7	Integrated Electronics	3	1	4	3	3	6	
EE-48E8	Microelectronics	3	1	4	3	3	6	
EE-48E9	Biomedical Instrumentation	3	1	4	3	3	6	

### List of Elective Courses (Option-III\*\*\*)

Code	Course Title	Credit Hours			Contact Hours			Pre-requisites
		Theor y	Practical	Total	Theory	Practical	Total	
EE-48E6	Optical Communication	3	1	4	3	3	6	
EE-48E7	Wireless and Mobile Communication	3	1	4	3	3	6	
EE-48E8	Telecommunication Policies and Standards	3	1	4	3	3	6	
EE-48E9	Navigation and Radar System	3	1	4	3	3	6	

\*Option I courses are related to the Field of Electrical Power

\*\*Option II courses are related to Field of Electronics and Control Systems

\*\*\*Option III courses are related to the Field of Communication System



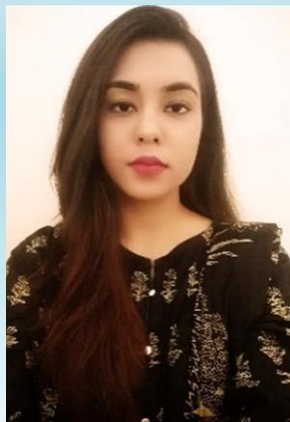
## Laboratories

Sr. #	Lab	Spring Semester	Fall Semester
1	<b>Circuit Lab</b>	Electrical Network Analysis, Instrumentation and Measurement	Linear Circuit Analysis, Electronic Circuit Design
2	<b>Communication Lab</b>	Communication System, RF and Microwave Engineering, Wave Propagation and Antennas	Wireless and Mobile Communication
3	<b>Electronics Lab</b>	Basic Electronics	Power Electronics, Integrated Electronics
4	<b>Computer Lab</b>	Programming Fundamentals, VLSI Design	Introduction to Computing, Data Structures and Algorithms, Introduction to Nanotechnology
5	<b>Power Distribution &amp; Utilization Lab</b>		Power Distribution and Utilization
6	<b>Machine Lab</b>	Electrical Machines – I, Electrical Machines – II	
7	<b>Digital Lab</b>	Embedded System Design	Digital Logic Design, Microprocessor Systems, Digital System Design
8	<b>ETAP lab</b>		Power System Analysis
9	<b>Power System Protection &amp; Transmission Lab</b>	Power System Protection	Electrical Power Transmission
10	<b>Renewable Energy Lab</b>	Renewable Energy Systems	
11	<b>DSP Lab</b>	Signal and Systems	Digital Signal Processing
12	<b>High Voltage Lab</b>	High Voltage Engineering	
13	<b>Control Lab</b>		Linear Control Systems
14	<b>IRC Lab</b>	Provides research facilities to the students and faculty	



Words are powerless to express my gratitude to MUST. There are so many opportunities to develop ones personality in any field. The entire faculty and other members of this university are very cooperative.

**Sheeza Mariam Nawaz**  
**B.Sc. Electrical Engineering**  
**Session: 2013-2017**



To improve the world! First improve your technical skills, that's why we are in this university.

**Muhammad Tayyab Tahir**  
**B.Sc. Electrical Engineering**  
**Session: 2014-2018**







## **M.Sc. Electrical Engineering**

The Department of Electrical Engineering offers research-oriented multidisciplinary MSc in Electrical Engineering. The major tracks are Electronics, Power Systems, Telecommunication, Control & Automation, and Communication Systems & Networks. The department offers evening program along with weekend learning opportunity and expects from its graduates to provide engineering solutions to the society.

### **Program Objectives**

The MSc in Electrical Engineering at MUST focuses to help students to develop confidence to work as professional and ready to explore new research dimensions of the discipline as a researcher.





### Admission Criterion:

A candidate must:

- a. Have passed 16-years education with following minimal grades:

Education	Semester Based Examinations		Annual
	CGPA	Percentage	
16-Year	3.0 out of 4.00	60%	2 <sup>nd</sup> Division

- b. Candidate should have no 3rd division in his/ her academic career.
- c. The candidates must have passed the GAT/ NTS general test or any other test as required by the University.

### Degree Requirements:

A candidate must successfully complete 24 credit hours for course work and 06 credit hours of research work with overall minimum CGPA of 2.75/4.00 for obtaining degree. In addition, the candidate must participate in 01 credit hour seminar and appear in viva-voce examination.

### Selection Criterion:

1. Admissions will be granted on open merit basis (there is no quota seat).
2. A candidate shall be selected on the basis of cumulative merit to be determined from his/ her past academic record and achievements in the written tests conducted by the Controller of Examinations and Interview by Admission Committee of the concerned discipline.
3. The allocation of marks for determining merit shall be as follows:

Academic Record	55 marks
Admission Test	35 marks
Interview	10 marks

### Scholarships Offered:

Studentship is offered in various funded research projects.

### Duration:

4-6 Semester



## Scheme of Study (M.Sc. Electrical Engineering)

### Power Systems Engineering (Evening Program)\*

<b>Semester I</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
Core I	Compulsory	Offered from core courses list of Power System Engineering	3
Core II	Compulsory	Offered from core courses list of Power System Engineering	3
Core III	Compulsory	Offered from core courses list of Power System Engineering	3
<b>Semester II</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
Core IV	Compulsory	Offered from core courses list of Power System Engineering	3
Core V	Compulsory	Offered from core courses list of Power System Engineering	3
Elective I	Elective	Any course from the core courses of the other programs*	3
<b>Semester III</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
Core VI	Compulsory	Offered from core courses list of Power System Engineering	3
Elective II	Elective	Any course from the core courses of the other programs*	3
EE-82000	Compulsory	Postgraduate Thesis	3
<b>Semester IV</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
EE-82000	Compulsory	Postgraduate Thesis	3



## Power System Engineering (Weekend Program)\*

<b>Semester I</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
Core I	Compulsory	Offered from core courses list of Power System Engineering	3
Core II	Compulsory	Offered from core courses list of Power System Engineering	3
<b>Semester II</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
Core III	Compulsory	Offered from core courses list of Power System Engineering	3
Core IV	Compulsory	Offered from core courses list of Power System Engineering	3
<b>Semester III</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
Core V	Compulsory	Offered from core courses list of Power System Engineering	3
Elective I	Elective	Any course from the core courses of the other programs*	3
<b>Semester IV</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
Core VI	Compulsory	Offered from core courses list of Power System Engineering	3
Elective II	Elective	Any course from the core courses of the other programs*	3
<b>Semester V &amp; VI</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
EE-82000	Compulsory	Postgraduate Thesis	6



**\*Other Programs:** Control Systems Theory, Control & Automation Engineering, Electronics & Embedded Systems, Telecommunication, Communication systems & Networks.

### List of Courses

Electronics					
Sr. #.	Course Code	Course Title	Sr. #.	Course Code	Course Title
1.	EE-7201	Embedded System Design	18.	EE-7218	Integrated Optical Devices & Waveguides
2.	EE-7202	Semiconductor Processing	19.	EE-7219	Digital Integrated Circuit Design
3.	EE-7203	Electromagnetic Field Analysis	20.	EE-7220	Analog IC Design
4.	EE-7204	Stochastic Process	21.	EE-7221	Advanced Topics in Electronics
5.	EE-7205	Advanced Microwave Engineering	22.	EE-7222	Fiber Optics Theory and Communication
6.	EE-7206	Solid State Electronics	23.	EE-7223	Computer Vision and Machine Learning
7.	EE-7207	Photonic Devices	24.	EE-7224	Advanced Topics in VLSI
8.	EE-7208	Computational EM	25.	EE-7225	Semiconductor Device Physics
9.	EE-7209	Advanced VLSI Design	26.	EE-7226	Advanced Digital System Design
10.	EE-7210	Advanced Microprocessor Based Systems	27.	EE-7227	Quantum Mechanics
11.	EE-7211	Artificial Neural Networks	28.	EE-7228	Advanced Topics in Electromagnetics
12.	EE-7212	Advanced Digital Signal Processing	29.	EE-7229	Advanced Antenna Theory
13.	EE-7213	Advanced Computer Architecture	30.	EE-7230	VLSI Signal Processing
14.	EE-7214	Digital Image Processing	31.	EE-7231	VLSI Interconnects
15.	EE-7215	Nanoelectronics	32.	EE-7232	Nanophotonics and Metamaterials
16.	EE-7216	Modeling and Simulation of Semiconductor Devices	33.	EE-7119	Advanced Power Electronics Devices and Converters
17.	EE-7217	VLSI Testing and Verification	34.	EE-7136	Metaheuristic Optimization



### Electronics

Sr. #.	Course Code	Course Title	Sr. #.	Course Code	Course Title
1.	EE-7101	Control of AC & DC Machines and Drives	20.	EE-7120	Switch-Mode Power Supplies
2.	EE-7102	Modeling and Simulation of Electrical Machines	21.	EE-7121	Modeling and Simulation of Convertors
3.	EE-7103	Advanced Power System Distribution	22.	EE-7122	Special Electrical Machine
4.	EE-7104	Power System Reliability	23.	EE-7123	Advanced Control System
5.	EE-7105	Energy Management	24.	EE-7125	Advanced Design of Electrical Machine
6.	EE-7106	Power System Restructuring	25.	EE-7126	Advanced Power System Analysis
7.	EE-7107	Advanced Power System and Protection	26.	EE-7127	Alternate Energy Sources
8.	EE-7108	Insulation Coordination in Power Systems	27.	EE-7128	Advanced Topics in Power
9.	EE-7109	Power System Circuit Breaker & Substations	28.	EE-7129	Advanced Power System Operation and Control
10.	EE-7110	Industrial Power System & Design	29.	EE-7130	Smart Grids
11.	EE-7111	Power System Operation and Planning	30.	EE-7131	Sustainable Energy System
12.	EE-7112	Renewable Energy Sources	31.	EE-7132	Electric Power Quality
13.	EE-7113	Advanced High Voltage Engineering	32.	EE-7133	Wind Power Generation
14.	EE-7114	Power System Modeling and Analysis	33.	EE-7134	Faults Tolerated Power System
15.	EE-7115	Advanced Power System Transmission	34.	EE-7135	Energy Resources and Technologies
16.	EE-7116	Advanced Power System Stability and Quality	35.	EE-7136	Metaheuristic Optimization
17.	EE-7117	Power Generation Economics	36.	EE-7137	Energy Informatics
18.	EE-7118	Distributed Generation	37.	EE-7228	Advanced Topics in Electromagnetics
19.	EE-7119	Advanced Power Electronics Devices and Converters			



### Communication System & Networks

Sr. #.	Course Code	Course Title	Sr. #.	Course Code	Course Title
1.	EE-7601	Electromagnetic Field Analysis	14.	EE-7219	Digital Integrated Circuit Design
2.	EE-7602	Radiating Systems & Antennas	15.	EE-7223	Computer Vision and Machine Learning
3.	EE-7603	Microwave Networks & Passive Components	16.	EE-7225	Semiconductor Device Physics
4.	EE-7604	Advanced Computer Networks	17.	EE-7401	Advanced Digital Communication
5.	EE-7605	Secure Communications	18.	EE-7403	Information Theory and Coding
6.	EE-7606	Microwave IC Design	19.	EE-7404	Advanced Broadband Communication
7.	EE-7607	Real-time DSP	20.	EE-7405	Advanced Wireless Communication
8.	EE-7608	Spatial Array Processing	21.	EE-7410	Microwave Systems & Devices
9.	EE-7609	Filtering & Tracking	22.	EE-7414	Signal Detection & Estimation
10.	EE-7137	Energy Informatics	23.	EE-7415	Advanced Satellite Communication
11.	EE-7204	Stochastic Process	24.	EE-7417	Advanced Multimedia Communication
12.	EE-7208	Computational EM	25.	EE-7419	Adaptive Filter Theory
13.	EE-7212	Advanced Digital Signal Processing	26.	EE-7428	Unmanned Aerial Vehicles, Design and Performance Analysis



### Telecommunication

Sr. #.	Course Code	Course Title	Sr. #.	Course Code	Course Title
1.	EE-7401	Advanced Digital Communication	20.	EE-7420	Wireless Adhoc Networks
2.	EE-7402	Optical Networks	21.	EE-7421	Optimization of Data Network
3.	EE-7403	Information Theory and Coding	22.	EE-7422	Smart Grid Communication
4.	EE-7404	Advanced Broadband Communication	23.	EE-7423	Advanced Topic in Telecommunication
5.	EE-7405	Advanced Wireless Communication	24.	EE-7424	Advanced Optical Communication
6.	EE-7406	IP Telephony and VOIP	25.	EE-7426	Telecommunication Network Operations
7.	EE-7407	Speech and Audio Processing	26.	EE-7427	Pattern Recognition
8.	EE-7408	Cellular Radio and Personal Communication	27.	EE-7428	Unmanned Aerial Vehicles, Design and Performance Analysis
9.	EE-7409	Advanced Communication Networks	28.	EE-7136	Metaheuristic Optimization
10.	EE-7410	Microwave Systems and Devices	29.	EE-7137	Energy Informatics
11.	EE-7411	Advanced Concepts in Radar Applications	30.	EE-7208	Computational EM
12.	EE-7412	Global Positioning and Navigation System	31.	EE-7204	Stochastic Process
13.	EE-7413	Advanced Mobile Communication	32.	EE-7212	Advanced Digital Signal Processing
14.	EE-7414	Signal Detection and Estimation	33.	EE-7214	Digital Image Processing
15.	EE-7415	Advanced Satellite Communication	34.	EE-7220	Analog IC Design
16.	EE-7416	Electromagnetic Field Compatibility	35.	EE-7223	Computer Vision and Machine Learning
17.	EE-7417	Advanced Multimedia Communication	36.	EE-7229	Advanced Antenna Theory
18.	EE-7418	Cryptography and Security	37.	EE-7230	VLSI Signal Processing
19.	EE-7419	Adaptive Filter Theory			





### Control & Automation Engineering

Course Code	Course Title
EE-7301	Advanced Digital Control Systems
EE-7302	Fuzzy Control Systems
EE-7303	Adaptive Control System
EE-7305	Robust Control
EE-7306	System Identification
EE-7308	Robot Control Theory
EE-7309	Optimal Control Systems
EE-7310	Estimation Theory
EE-7311	Dynamics of Robots
EE-7312	System Dynamics
EE-7313	Advanced Topics in Control Systems
EE-7314	Linear Control System Theory
EE-7315	Computational Methods in Large Scale Simulations
EE-7316	Non-Linear Control System
EE-7101	Control of AC and DC Machines and Drives
EE-7102	Modeling and Simulation of Electrical Machines
EE-7204	Stochastic Process
EE-7419	Adaptive Filter Theory
EE-7414	Signal Detection and Estimation
EE-7318	Intelligent Control

Course Code	Course Title
EE-7501	Control System Optimization
EE-7502	Chaos Theory
EE-7503	Random Variables and Stochastic Processes
EE-7504	Linear Multivariable Control Theory
EE-7204	Stochastic Process
EE-7301	Advanced Digital Control Systems
EE-7302	Fuzzy Control Systems
EE-7303	Adaptive Control System
EE-7305	Robust Control
EE-7306	System Identification
EE-7309	Optimal Control Systems
EE-7310	Estimation Theory
EE-7311	Dynamics of Robots
EE-7313	Advanced Topics in Control Systems
EE-7314	Linear Control System Theory
EE-7315	Computational Methods in Large Scale Simulations
EE-7316	Non-Linear Control System
EE-7419	Adaptive Filter Theory
EE-7414	Signal Detection and Estimation



## PhD in Electrical Engineering

The Department of Electrical Engineering offers PhD in Electrical Engineering. Research at this level covers all fields of Electrical Engineering from nano-electronics to high power applications. It includes Electronics, Communication & Signal Processing, Power System & Energy Management, and Robotics & Control as key research areas. The department offers full-time program and expects that the students would produce original work with significant contribution to the knowledge in the field of study.

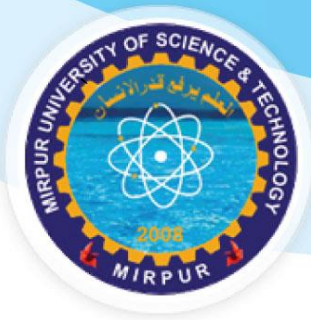
### Program Objectives

The PhD in Electrical Engineering at MUST focuses to prepare students having advanced knowledge and skills required to start research and/or teaching career in universities, research institutions or industry and to conduct independent research.

### Admission Criterion

The eligibility criteria for admission to the Ph.D. degree programme shall be as under:

- (1) Have passed 18-years education with at least CGPA 3.00/ 4.00 and at least CGPA 3.50/ 5.00 (at least 65% marks) in semester system and 1st division (60% marks) in annual system of examination.
- (2) Candidate should have no 3rd division in his/ her academic career.
- (3) The candidate must have passed the GRE subject test or equivalent as per HEC/ University requirements.
  - (a) In the case of Graduate Assessment Test (GAT) a minimum of 60% score is required.
  - (b) In the case of GRE subject test a minimum of 60% percentile score is required



### Selection Criterion

1. Admissions will be granted on open merit basis.
2. The merit for admission will be determined by the following criteria:

Academic Record	80 marks
Interview	15 marks
Publications	05 marks
Total	100 marks

### Scholarships Offered

Studentship is offered in various funded research projects.

### Degree Requirements

A candidate must complete minimum 18 credit hours course work in maximum four semester duration, participate in two seminars (01 credit hour each), complete 50 credit hours of research work with at least one publication in HEC recognized journal.

### Duration

The duration of the program will not be less than six semesters and more than sixteen semesters.



## Scheme of Study (PhD Electrical Engineering)

OPTION-1			
Semester I			
Course Code	Type	Subject	Credit hours
Subject I	Compulsory	Offered from Ph.D. courses list	3
Subject II	Compulsory	Offered from Ph.D. courses list	3
Subject III	Compulsory	Offered from Ph.D. courses list	3
Semester II			
Course Code	Type	Subject	Credit hours
Subject IV	Compulsory	Offered from Ph.D. courses list	3
Subject V	Compulsory	Offered from Ph.D. courses list	3
Subject VI	Compulsory	Offered from Ph.D. courses list	3
Semester III-XVI			
Course Code	Type	Subject	Credit hours
EE-80000	Compulsory	Comprehensive Exam	0 (Pass/Fail)
EE-81000	Compulsory	Research Seminar	2
EE-83000	Compulsory	Thesis	50

**Note:** Semester III-XVI also includes passing Comprehensive Exam (Written + Oral), Ph.D. Research Proposal, and Final Open Defense.



<b>OPTION-2</b>			
<b>Semester I</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
Subject I	Compulsory	Offered from Ph.D. courses list	3
Subject II	Compulsory	Offered from Ph.D. courses list	3
<b>Semester II</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
Subject III	Compulsory	Offered from Ph.D. courses list	3
Subject IV	Compulsory	Offered from Ph.D. courses list	3
<b>Semester III</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
Subject V	Compulsory	Offered from Ph.D. courses list	3
Subject VI	Compulsory	Offered from Ph.D. courses list	3
<b>Semester IV-XVI</b>			
<b>Course Code</b>	<b>Type</b>	<b>Subject</b>	<b>Credit hours</b>
EE-80000	Compulsory	Comprehensive Exam	0 (Pass/Fail)
EE-81000	Compulsory	Research Seminar	2
EE-83000	Compulsory	Thesis	50

**Note:** Semester IV-XVI also includes passing Comprehensive Exam (Written + Oral), Ph.D. Research Proposal, and Final Open Defense.



## List of Courses

### Power Systems & Energy Management

Course Code	Course Title	Course Code	Course Title
EE-7101	Control of AC & DC Machines and Drives	EE-7120	Switch-Mode Power Supplies
EE-7102	Modeling and Simulation of Electrical Machines	EE-7121	Modeling and Simulation of Convertors
EE-7103	Advanced Power System Distribution	EE-7122	Special Electrical Machine
EE-7104	Power System Reliability	EE-7123	Advanced Control System
EE-7105	Energy Management	EE-7125	Advanced Design of Electrical Machine
EE-7106	Power System Restructuring	EE-7126	Advanced Power System Analysis
EE-7107	Advanced Power System and Protection	EE-7127	Alternate Energy Sources
EE-7108	Insulation Coordination in Power Systems	EE-7128	Advanced Topics in Power
EE-7109	Power System Circuit Breaker & Substations	EE-7129	Advanced Power System Operation and Control
EE-7110	Industrial Power System & Design	EE-7130	Smart Grids
EE-7111	Power System Operation and Planning	EE-7131	Sustainable Energy System
EE-7112	Renewable Energy Sources	EE-7132	Electric Power Quality
EE-7113	Advanced High Voltage Engineering	EE-7133	Wind Power Generation
EE-7114	Power system Modeling and Analysis	EE-7134	Faults Tolerated Power System
EE-7115	Advanced Power System Transmission	EE-7135	Energy Resources and Technologies
EE-7116	Advanced Power System Stability and Quality	EE-7136	Metaheuristic Optimization
EE-7117	Power Generation Economics	EE-7137	Energy Informatics
EE-7118	Distributed Generation	EE-7228	Advanced Topics in Electromagnetics
EE-7119	Advanced Power Electronics Devices and Converters		



### Power Systems & Energy Management

Course Code	Course Title	Course Code	Course Title
EE-7203	Electromagnetic Field Analysis	EE-7405	Advanced Wireless Communication
EE-7225	Semiconductor Device Physics	EE-7137	Energy Informatics
EE-7212	Advanced Digital Signal Processing	EE-7204	Stochastic Process
EE-7602	Radiating Systems & Antennas	EE-7219	Digital Integrated Circuit Design
EE-7603	Microwave Networks & Passive Components	EE-7228	Advanced Topics in Electromagnetics
EE-7410	Microwave Systems and Devices	EE-7229	Advanced Antenna Theory
EE-7604	Advanced Computer Networks	EE-7214	Digital Image Processing
EE-7414	Signal Detection & Estimation	EE-7220	Analog IC Design
EE-7419	Adaptive Filter Theory	EE-7223	Computer Vision and Machine Learning
EE-7605	Secure Communications	EE-7230	VLSI Signal Processing
EE-7401	Advanced Digital Communication	EE-7404	Advanced Broadband Communication
EE-7208	Computational EM	EE-7415	Advanced Satellite Communication
EE-7614	Microwave IC Design	EE-7417	Advanced Multimedia Communication
EE-7607	Real-time DSP	EE-7427	Pattern Recognition
EE-7608	Spatial Array Processing	EE-7428	Unmanned Aerial Vehicles, Design and Performance Analysis
EE-7609	Filtering & Tracking	EE-7423	Advanced Topics in Telecommunication
EE-7403	Information Theory and Coding	EE-7136	Metaheuristic Optimization



### Robotics and Control

Course Code	Course Title	Course Code	Course Title
EE-7301	Advanced Digital Control Systems	EE-7313	Advanced Topics in Control Systems
EE-7302	Fuzzy Control Systems	EE-7314	Linear Control System Theory
EE-7303	Adaptive Control System	EE-7315	Computational Methods in Large Scale Simulations
EE-7304	Optimal Control Systems	EE-7316	Non-Linear Control System
EE-7305	Robust Control	EE-7317	Vision and Control
EE-7306	System Identification	EE-7318	Intelligent Control
EE-7204	Stochastic Process	EE-7503	Random Variables and Stochastic Processes
EE-7308	Robot Control Theory	EE-7504	Linear Multivariable Control Theory
EE-7309	Optimal Control Systems	EE-7419	Adaptive Filter Theory
EE-7310	Estimation Theory	EE-7414	Signal Detection and Estimation
EE-7311	Dynamics of Robots	EE-7101	Control of AC & DC Machines and Drives
EE-7312	System Dynamics	EE-7102	Modeling and Simulation of Electrical Machines





### Electronics

Course Code	Course Title	Course Code	Course Title
EE-7201	Embedded System Design	EE-7218	Integrated Optical Devices & Waveguides
EE-7202	Semiconductor Processing	EE-7219	Digital Integrated Circuit Design
EE-7203	Electromagnetic Field Analysis	EE-7220	Analog IC Design
EE-7204	Stochastic Process	EE-7221	Advanced Topics in Electronics
EE-7205	Advanced Microwave Engineering	EE-7222	Fiber Optics Theory and Communication
EE-7206	Solid State Electronics	EE-7223	Computer Vision and Machine Learning
EE-7207	Photonic Devices	EE-7224	Advanced Topics in VLSI
EE-7208	Computational EM	EE-7225	Semiconductor Device Physics
EE-7209	Advanced VLSI Design	EE-7226	Advanced Digital System Design
EE-7210	Advanced Microprocessor Based Systems	EE-7227	Quantum Mechanics
EE-7211	Artificial Neural Networks	EE-7228	Advanced Topics in Electromagnetics
EE-7212	Advanced Digital Signal Processing	EE-7229	Advanced Antenna Theory
EE-7213	Advanced Computer Architecture	EE-7230	VLSI Signal Processing
EE-7214	Digital Image Processing	EE-7231	VLSI Interconnects
EE-7215	Nanoelectronics	EE-7232	Nanophotonic and Metamaterials
EE-7216	Modeling and Simulation of Semiconductor Devices	EE-7119	Advanced Power Electronics Devices and Converters
EE-7217	VLSI Testing and Verification	EE-7136	Metaheuristic Optimization



**An International Seminar on IIoT – Cybersecurity risks in the face of Quantum Computing, and should 6G Security Architecture be based on Quantum Cryptography?**



### International Conference on Power, Energy and Smart Grid (ICPESG-2018)



**International Conference on Power, Energy and Smart Grid (ICPSG-2018)**

# DEPARTMENT OF **MECHANICAL ENGINEERING**

## **Program Mission**

To produce competent mechanical engineers having professional ethics effectively contributing for the betterment of society recognizing technological developments

## **Degree Programs Offered**

- B.Sc. in Mechanical Engineering
- MS in Mechanical Engineering
- MS in Energy Systems Engineering
- Ph.D.in Mechanical Engineering



### **Chairperson:**

Engr. Dr. Khuram Pervez

Tel: +92-5827- 960036

E-mail: [chairman\\_me@must.edu.pk](mailto:chairman_me@must.edu.pk)

### **Message from Chairperson:**

It gives me immense pleasure to welcome you at the Department of Mechanical Engineering of Mirpur University of Science and Technology (MUST) Mirpur AJK. The department started its Bachelor of Science (B.Sc.) in Mechanical Engineering program in 2004 when it was a campus of the University of Azad Jammu and Kashmir, Muzaffarabad and known as Ali Ahmed Shah University College of Engineering and Technology Mirpur Azad Kashmir.

Since 2008, when it got its recognition as Mirpur University of Science and Technology (MUST), our department has grown significantly from the faculty point of view to the development of well-equipped laboratories for fulfilling the practical requirements of the students. Along with the Bachelor of Science in Mechanical Engineering program, the department offers two MS engineering programs and one Ph.D. engineering program. The two MS engineering programs include MS in Mechanical Engineering and MS in Energy Systems Engineering whereas the title of the Ph.D. program is Ph.D. in Mechanical Engineering.

We have highly qualified faculty including foreign qualified PhDs. We are committed to providing quality education and grooming the students to develop strong leadership qualities along with other professional skills to meet the challenging requirements of this modern world and to be a successful member of society. Research and development (R & D) has been one of our priorities and our students are doing several projects funded by Higher Education Commission (HEC) of Pakistan.

I am very much delighted to let you know that our B.Sc. Mechanical Engineering Program has now been accredited by Pakistan Engineering Council (PEC) under the Washington Accord Outcome-Based Education (OBE) system thus earning recognition and acceptance of its engineering degrees worldwide. Opportunities for our undergraduate and graduate students are virtually unlimited. In addition to our rigorous and challenging academic curriculum, our undergraduates are very active in extracurricular activities and national competitions, which are often coordinated by the various student organizations and clubs.



## Faculty Members

### **Engr. Dr. Khuram Pervez**

**Designation:** Associate Prof.

**Qualification:** Ph.D.

**Area of interest:** Heat Transfer & Sustainable Energy Sys.

### **Engr. Muhammad Abid Qureshi**

**Designation:** Associate Prof.

**Qualification:** MS

**Area of interest:** Thermal Power

### **Engr. Dr. Bilal akbar**

**Designation:** Assistant Prof.

**Qualification:** P.hD

**Area of interest:** Advance Manufacturing

### **Engr. Dr. M. Anser Bashir**

**Designation:** Lecturer

**Qualification:** P.hD

**Area of interest:** Concentrated Solar-thermal systems

### **Engr. Syed Kashif Hussain Shah**

**Designation:** Assistant Professor

**Qualification:** MS

**Area of interest:** Thermal Systems

### **Engr. Dr. Yamin Younis**

**Designation:** Assistant Prof.

**Qualification:** P.hD

**Area of interest:** Fluid Mechanics

### **Engr. Dr. Ghulam QadarCh**

**Designation:** Lecturer

**Qualification:** P.hD

**Area of interest:** HVAC

### **Engr. M. Iqbal**

**Designation:** Assistant Professor

**Qualification:** MS

**Area of interest:** Agro Mechanical

### **Engr. Faraz Ikram**

**Designation:** Assistant Professor

**Qualification:** MS

**Area of interest:** Thermal Systems



## Faculty Members

### **Engr. Imdad Hussain**

**Designation:** Lecturer

**Qualification:** MS

**Area of interest:** Mechanical Engineering

### **Engr. M. Amar**

**Designation:** Lecturer

**Qualification:** MS

**Area of interest:** Mechanical Engineering

### **Engr. Asad Munir**

**Designation:** Lecturer

**Qualification:** MS

**Area of interest:** Thermal PowerEngineering

### **Engr. Kamran Afzal**

**Designation:** Lecturer

**Qualification:** MS

**Area of interest:** Mechanical Engineering

### **Engr. Iram Zahra**

**Designation:** Lecturer

**Qualification:** MS

**Area of interest:** Engineering Materials

### **Engr. AmbreenTajammal**

**Designation:** Lecturer

**Qualification:** MS

**Area of interest:** Mechanical Engineering

### **Engr. Haroon Mushtaq**

**Designation:** Lecturer

**Qualification:** MS

**Area of interest:** Manufacturing Design

### **Engr. Nasir Iqbal**

**Designation:** Lecturer

**Qualification:** MS

**Area of interest:** Mechanical Engineering

### **Engr. Zeeshan Anjam**

**Designation:** Lecturer

**Qualification:** MS

**Area of interest:** Applied Mechanics& Design

### **Engr. Muhammad Azad**

**Designation:** Junior Lecturer

**Qualification:** MS

**Area of interest:** Thermal Systems





## Faculty Members

### Engr. M. Abid

**Designation:** Junior Lecturer

**Qualification:** MS

**Area of interest:** Thermal Systems

### Engr. Sohail Tariq

**Designation:** Junior Lecturer

**Qualification:** B.sc

**Area of interest:** Mechanical Engg

## Faculty on Study leave

Sr. No.	Name
1.	Engr. Naveed Akram
2.	Engr. Muhammad Sajid Khan
3.	Engr. Asad Ijaz
4.	Engr. Noman Bashir
5.	Engr. Hafiz Sohaib Muhammad



## Lab Engineers

### **Engr. Muhammad Tahir Amin**

**Designation:** Lab. Engineer

**Qualification:** MS

**Area of interest:** Thermal Systems

### **Engr. Muhammad Asif Awan**

**Designation:** Lab. Engineer

**Qualification:** MS

**Area of interest:** Thermal Systems

### **Engr. Faisal Maqbool**

**Designation:** Lab. Engineer

**Qualification:** MS

**Area of interest:** Thermal Systems

### **Engr. Junaid Akbar**

**Designation:** Lab. Engineer

**Qualification:** MS

**Area of interest:** Thermal Systems



## **B.Sc. Mechanical Engineering**

Mechanical Engineering is a highly versatile and diversified engineering discipline. On one hand it is concerned with the design of machines and equipment that use energy and convert it into useful work. On the other hand it deals with the design and development of those machines that are used for manufacturing, production and process equipment. The department offers four years degree program leading to B.Sc. in Mechanical Engineering. securing suitable positions. The department is equipped with state-of-the-art laboratories. These labs are always accessible by both students and the faculty and they are also linked through the state-of-the-art network environment.

### **Program Educational Objectives (PEOs)**

- **PEO-1:** The graduates exhibiting engineering skills towards a successful career.

- **PEO-2:** The graduates adapting to provide viable engineering solutions to uplift the society and environment.
- **PEO-3:** The graduates demonstrating professional ethics and knowledge progression individually and in a team.





## Program Learning Outcomes (PLOs)

Sr. #.	PLO	Description
1.	<b>Engineering Knowledge</b>	An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
2.	<b>Problem Analysis</b>	An ability to identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences
3.	<b>Design/Development of Solutions</b>	An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
4.	<b>Investigation</b>	An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions
5.	<b>Modern Tool Usage</b>	An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities, with an understanding of the limitations.
6.	<b>The Engineer and Society</b>	An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.



Sr. #.	PLO	Description
7.	<b>Environment and Sustainability</b>	An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
8.	<b>Ethics</b>	Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
9.	<b>Individual and Team Work</b>	An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.
10.	<b>Communication:</b>	An ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11.	<b>Project Management:</b>	An ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.
12.	<b>Lifelong Learning</b>	An ability to recognize the importance of and pursue lifelong learning in the broader context of innovation and technological developments.



### Admission Criterion:

Admissions are made according to the eligibility conditions approved by the Academic Council/Syndicate of the University. The admission requirements are as under:

- i. F.Sc.(Pre-Engineering) with at least 60% marks.
- ii. Entry test - prescribed and conducted by the University.

3-year post-matric Diploma or Associate engineer (DAE) in relevant field with minimum 60% marks (Only against Reserved seats for DAEs)

### Duration

8-14 Semesters

### Scholarships Offered:

- |   |   |
|---|---|
| 1. University Merit Scholarship Scheme    | 9. National Bank Scholarship                                  |
| 2. MUST-Need Based Scholarship Program    | 10. Institutions of Engineers Pakistan (Saudi Arabian Center) |
| 3. HBL Foundation Stipend Scheme (HBLFSS) | 11. AJ&K Council Scholarship Scheme                           |
| 4. HEC-Need Based Scholarship Programmed  | 12. AJ&K State Talent Scholarship Scheme                      |
| 5. Provincial Government Scholarship      | 13. Punjab Educational Endowment fund (PEEF)                  |
| 6. Benevolent fund scholarships           | 14. USAID Scholarship   |
| 7. Pakistan Engineering Congress          | 15. Fauji Foundation  |
| 8. Banking Council Scholarship            | 16. Diya Pakistan   |
|   | 17. ASHAI Educational Trust                                   |



## Scheme of Study (Fall/2020)

<b>Duration:</b>	<b>8-14 Semesters (4-7 Academic Years)</b>					
<b>Courses:</b>	<b>128 Credits</b>					
<b>Final Year Project:</b>	<b>6 Credits</b>					
<b>Total:</b>	<b>134 Credits</b>					
<b>Oral Comprehensive Examinations:</b>	<b>S/U Basis</b>					
<b>Internship:</b>	<b>S/U Basis</b>					
<b>Semester 1</b>						
Sr. No.	Course Code & Title		Theory Credit Hours	Lab. Credit Hours	Total Credit Hours	Pre-Requisites
1	GSM-111	Calculus & Analytical Geometry	3	0	3	None
2	GSM-112	Applied Physics	1	1	2	None
3	GSM-113	Applied Chemistry	2	0	2	None
4	HSM-114	Functional English	2	0	2	None
5	CSM-115	Computer System & Programming	2	1	3	None
6	BME-116	Engineering Drawing & Graphics	1	1	2	None
7	BME-117	Engineering Mechanics-I	3	0	3	None
8	HSM-118	Introduction to Chinese Language	0	0	0	None
		<b>Total</b>	<b>14</b>	<b>3</b>	<b>17</b>	
		<b>Cumulative Total</b>	<b>14</b>	<b>3</b>	<b>17</b>	



Semester 2						
Sr. No.	Course Code & Title		Theory Credit Hours	Lab. Credit Hours	Total Credit Hours	Pre-Requisites
1	BME-121	Computer Aided Drawing	0	1	1	None
2	BME-122	Engineering Materials	3	0	3	None
3	GSM-123	Linear Algebra & Ordinary Differential Equations	3	0	3	None
4	BME-124	Engineering Mechanics-II	3	1	4	None
5	BME-125	Workshop Practice	0	2	2	None
6	ISM-126	Arabic	2	0	2	None
7	BME-127	Thermodynamics-I	3	0	3	None
		<b>Total</b>	<b>14</b>	<b>4</b>	<b>18</b>	
		<b>Cumulative Total</b>	<b>28</b>	<b>7</b>	<b>35</b>	
Semester 3						
Sr. No.	Course Code & Title		Theory Credit Hours	Lab. Credit Hours	Total Credit Hours	Pre-Requisites
1	HSM-231	Communication Skills	1	0	2	None
2	BME-232	Mechanics of Materials-I	3	0	3	None
3	ISM-233	Pakistan Studies	2	0	2	None
4	BME-234	Thermodynamics-II	3	1	4	BME-127
5	BEE-235	Electrical Engineering	2	1	3	None
6	GSM-236	Complex Variables and Transforms	3	0	3	None
		<b>Total</b>	<b>14</b>	<b>2</b>	<b>16</b>	
		<b>Cumulative Total</b>	<b>42</b>	<b>9</b>	<b>51</b>	





Semester 4						
Sr. No.	Course Code & Title		Theory Credit Hours	Lab. Credit Hours	Total Credit Hours	Pre-Requisites
1	BEE-241	Electronics Engineering	2	1	3	None
2	GSM-242	Numerical Analysis	2	1	3	None
3	ISM-243	Islamic Studies/Ethics	2	0	2	None
4	BME-244	Mechanics of Materials-II	3	1	4	None
5	BME-245	Machine Design-I	3	0	3	None
6	BME-246	Fluid Mechanics-I	3	0	3	None
		<b>Total</b>	<b>15</b>	<b>3</b>	<b>18</b>	
		<b>Cumulative Total</b>	<b>57</b>	<b>12</b>	<b>69</b>	
Semester 5						
Sr. No.	Course Code & Title		Theory Credit Hours	Lab. Credit Hours	Total Credit Hours	Pre-Requisites
1	BME-351	Fluid Mechanics-II	3	1	4	BME-122
2	HSM-352	Health, Safety & Environment	1	0	1	None
3	BME-353	Machine Design-II	2	1	2	BME-245
4	GSM-354	Applied Statistics	3	0	3	None
5	BME-355	Heat & Mass Transfer	3	1	4	None
6	BME-356	Manufacturing Processes	3	1	4	None
		<b>Total</b>	<b>15</b>	<b>4</b>	<b>19</b>	
		<b>Cumulative Total</b>	<b>72</b>	<b>16</b>	<b>88</b>	



Semester 6						
Sr. No.	Course Code & Title		Theory Credit Hours	Lab. Credit Hours	Total Credit Hours	Pre-Requisites
1	HSM-361	Technical Report Writing & Presentation Skills	1	1	2	None
2	BME-362	Technical Elective-I	2	0	2	None
3	BME-363	Control Engineering	3	1	4	None
4	BME-364	Mechanics of Machines	3	1	4	None
5	BME-365	Heating, Ventilating and Air Conditioning	3	1	4	BME-234
6	BME-366	Internship/ Industrial Experience	0	0	0	None
		<b>Total</b>	<b>12</b>	<b>4</b>	<b>16</b>	
		<b>Cumulative Total</b>	<b>84</b>	<b>20</b>	<b>104</b>	
Semester 7						
Sr. No.	Course Code & Title		Theory Credit Hours	Lab. Credit Hours	Total Credit Hours	Pre-Requisites
1	MSM-471	Engineering Economics	2	0	2	None
2	BME-472	Mechanical Vibrations	3	1	4	None
3	BME-473	Internal Combustion Engines	3	0	3	None
4	BME-474	Technical Elective-II	2	0	2	None
5	BME-475	Introduction to Finite Element Analysis	2	1	3	None
6	BME-476	Final Year Project-I	0	3	3	None
		<b>Total</b>	<b>12</b>	<b>5</b>	<b>17</b>	
		<b>Cumulative Total</b>	<b>96</b>	<b>25</b>	<b>121</b>	



### Semester 8

Sr. No.	Course Code & Title		Theory Credit Hours	Lab. Credit Hours	Total Credit Hours	Pre-Requisites
1	BME-481	Technical Elective-III	2	0	2	None
2	MSM-482	Entrepreneurship	1	0	1	None
3	MSM-483	Management Elective	2	0	2	None
4	BME-484	Power Plants	3	1	4	None
5	BME-485	Final Year Project-II	0	3	3	None
6	BME-486	Instrumentation, Measurement and Quality Control	2	1	3	None
		<b>Total</b>	<b>10</b>	<b>5</b>	<b>15</b>	
		<b>Cumulative Total</b>	<b>106</b>	<b>30</b>	<b>136</b>	
					P	
Non-Engineering Courses Credit Hours			36		<b>%age</b>	26.47
Engineering Courses Credit Hours			100		<b>%age</b>	73.53



## Laboratories

The department has the following well-equipped laboratories to meet the academic requirements of students and teachers as well as the professional needs of the government and private organizations:

- Applied Thermodynamics
- Mechanics of Materials
- Refrigeration & Air Conditioning
- Fluid Mechanics and Hydraulics
- Heat and Mass Transfer
- Mechanics of Machines
- Internal combustion Engines
- Engineering Materials
- Workshop Practices & Manufacturing Process
- Engineering Mechanics (Static & Dynamics)
- Drawing Hall
- Mechanical Vibrations





## Students' Messages

As we all are familiar with the name MUST, the engineering university of AJK is a place to become an engineer in real meanings. I, as a student of mechanical engineering, found faculty stimulating our skills and not to be a bookworm. Also, the best labs in many aspects to improvise our work. Because here we gain technical knowledge regarding this field, not to be called engineers only by name. This can upgrade your abilities and strengthen your engineering knowledge for future opportunities. One who is passionate about his career must be a part of this institute and MUST will help to fulfill that dream.



**Negarish Gul Naseem**  
(2017-21)

My university experiences thus far have been amazing. I have learned and experienced so many new things in such a short period of time, and it has gone by so fast. I am still discovering all the opportunities that the university offers me. MUST is a very welcoming place, and from the first day, I felt at home here. I have made many new friends from many different backgrounds. My classes are great and I enjoy every one of them.

I have studied Mechanical Engineering at MUST and the depth and detail of what we are learning is far beyond my high school experience. It is just amazing to think that even the tiniest details on the subatomic level can have such a huge impact. Time has been flying by and it's hard to believe that and also life at MUST is a great experience that I plan to make the most out of.



**Haroon**  
(2016-20)



## MS Mechanical Engineering

### Admission Criterion:

- **Qualification**
  - B.Sc. Mechanical Engineering with at least 65% marks in semester system and 50% in annual system of examination with no 3rd Division in the academic record.
  - Registered with Pakistan Engineering Council.
  - GAT (General) at least qualifying score
  - Entry Test Conducted by the University
- **Grades**
  - Semester Based Examination
    - CGPA 3.0 out of 4.0
  - Annual System
    - Min Second Division
- No 3rd division is allowed.
- GAT / NTS general valid test.
- HEC attested degrees where applicable

### Degree Requirements:

- Four (4) courses (12 credit hours) from the core courses  
AND
- Four (4) courses of 12 credit hours' graduate elective courses of which two graduate courses may be taken from other areas.  
AND
- Satisfactory defence of MS-Mechanical Engineering thesis consisting of 6 credit hours according to the University prescribed format.

### Duration:

- Full Time
  - Minimum Semesters = 4
  - Maximum Semester = 6
  - Credit Hours = 31
  - Semester Duration = 18 Weeks
  - 16 Weeks Teaching
  - 2 Week Examination



## Proposed Scheme of Study (MS- Mechanical Engineering)

<b>Duration:</b>		4 Semesters	
<b>Core Courses:</b>		12 Credit Hours	
<b>Elective Courses</b>		12 Credit Hours	
<b>Master's Thesis</b>		6 Credit Hours	
<b>Total:</b>		30 Credit Hours	
<b>MS-Core Subjects</b>			
S. No.	Course Code	Subject	Credit Hours
1.	MME-7101	Advanced Numerical Analysis	3
2.	MME-7102	Research Methodology	3
3.	MME-7103	Advanced Finite Element Methods	3
4.	MTP-7104	Advanced Fluid Mechanics	3
5.	MTP-7105	Advanced Heat Transfer	3
<b>MS-Compulsory Subjects</b>			
1.	MME-7100	Thesis	6
<b>MS-Elective Subjects</b>			
1.	MTP-7201	Renewable Energy Systems	3
2.	MTP-7202	Advanced Power Plant Systems	3
3.	MTP-7203	Design of Experiments	3
4.	MTP-7204	Thermal Design of Heat Exchanger	3
5.	MTP-7205	Solar Thermal Systems	3
6.	MTP-7206	Computational Fluid Dynamics	3
7.	MTP-7207	Advance Aerodynamics	3



8.	MTP-7208	Project Management	3
9.	MTP-7209	Supply Chain in Engineering	3
10.	MTP-7210	Design Optimization and Analysis Techniques	3
11.	MTP-7211	Air Pollution	3
12.	MTP-7212	Convection Heat Transfer	3
13.	MTP-7213	Advanced IC. Engines	3
14.	MTP-7214	Boiling & Condensation Heat Transfer	3
15.	MTP-7215	Advanced Manufacturing Processes	3
16.	MTP-7216	Fluid Structure Interaction	3
17.	MTP-7217	Special Topic on Thermal Power Engineering	3
18.	MTP-7218	Advance Refrigeration and Air Conditioning	3
19.	MTP-7219	Advance Applied Mechanics and Design	3
20.	MTP-7220	Advance Mechanical Vibration	3
21.	MTP-7221	Energy System Analysis	3
22.	MTP-7222	Advanced Thermodynamics	3
23.	MTP-7223	Industrial and Manufacturing Entrepreneurship	3
24.	MTP-7224	Stochastic Modeling and Optimization	3
25.	MTP-7225	Advanced Computer Aided Design	3





## MS in Energy Systems Engineering:

### Admission Criteria

B.Sc. Mechanical, Electrical, Civil, Environmental or Chemical Engineering with at least 65% marks in semester system and 50% in annual system of examination with no 3rd Division in the academic record.

- Registered with Pakistan Engineering Council.
- GAT (General) at least qualifying score.

Entry Test Conducted by the University

### Scheme of Study (MS-Energy Systems Engineering)

MS-Core Subjects			
S. No.	Course Code	Subject	Credit Hours
1.	MME-7101	Advanced Numerical Analysis	3
2.	MME-7102	Research Methodology	3
3.	MME-7103	Energy System Analysis	3
4.	MES-7104	Energy Forecasting and Statistics	3
5.	MES-7105	Energy Economics & Policy	3
6.	MES-7106	Energy Conversion Technologies	3
MS-Compulsory Subjects			
1.	MME-7100	Thesis	6
MS-Elective Subjects			
1.	MES-7201	Renewable Energy Systems	3
2.	MES-7202	Advanced Power Plant Systems	3
3.	MES-7203	Design of Experiments	3
4.	MES-7204	Thermal Design of Heat Exchanger	3
5.	MES-7205	Solar Thermal Systems	3



6.	MES-7206	Computational Fluid Dynamics	3
7.	MES-7207	Advance Aerodynamics	3
8.	MES-7208	Advanced Finite Element Methods	3
9.	MES-7209	Project Management	3
10.	MES-7210	Supply Chain in Engineering	3
11.	MES-7211	Design Optimization and Analysis Techniques	3
12.	MES-7212	Air Pollution	3
13.	MES-7213	Computer Applications in Energy Systems	3
14.	MES-7214	Wind Energy	3
15.	MES-7215	Fuel Cells Technology	3
16.	MES-7216	Clean Coal Technologies	3
17.	MES-7217	Development and Evaluation of Energy Projects	3
18.	MES-7218	Combined Heat & Power Systems	3
19.	MES-7219	Power Distribution Systems	3
20.	MES-7220	Environment Impact Assessment	3
21.	MES-7221	Energy and Environment	3
22.	MES-7222	Energy Resources and Technologies	3
23.	MES-7223	Biomass Energy	3
24.	MES-7224	Nuclear Energy Engineering	3
25.	MES-7225	Energy Management in buildings	3
26.	MES-7226	Fluid structure interaction	3
27.	MES-7227	Solar Energy Utilization	3
28.	MES-7228	Sustainability	3
29.	MES-7229	Special Topics on Energy Systems Engineering	3



## Ph.D. in Mechanical Engineering:

### REGULATIONS FOR Ph.D. DEGREE PROGRAMMES

#### Scheme of studies

The scheme of studies for Ph.D. degree programme shall be as under:

- (1) Total credit hours for the degree program shall be seventy. Minimum 18 credit hours course work is required in maximum four semester duration. The deficiency courses, if any, will be extra than the required 18 credit hours.
- (2) Two Seminars, one credit hour each (02 credit hours).
- (3) Synopsis to be submitted at the end of third semester.
- (4) Comprehensive examination (Written + Oral).
- (5) Thesis defense at Department/ Institute/ Centre/ School/ College level on a topic approved by the Advanced Studies & Research Board (50 credit hours).
- (6) A Ph.D. scholar is required to publish at least one research paper from his/ her Ph.D. research work in the HEC recognized journal before the award of the degree.
- (7) Evaluation of thesis by two foreign external examiners from technologically advanced countries and one local external examiner.
- (8) Open Public Defense.

#### Duration of Scheme

The duration of the course for the degree of Ph.D. shall not be less than six semesters and more than sixteen semesters for whole time scholar. Extension in duration may be granted by the ASRB on recommendation of the supervisor. The letter by the supervisor countersigned by the concerned Head and Dean of the Faculty will be required for extension to the next semester(s), if required. The letter will be sent to the ASRB for necessary action.

#### Calendar Year

**Normal Semester:** 18 working weeks.

**Teaching:** 16 weeks.

**Examination and Result:** 02 weeks.

**Spring Semester:** 2nd Week of February to 2nd Week of June.

**Fall Semester:** 2nd Week of September to 2nd Week of January.

**Semester Break:** Last Week of January to First Week of February.



## Admission Procedure

- (1) Applications for admission to Ph.D. degree programme shall be invited through advertisement in the electronic and print media. Director Students Affairs (DSA) will coordinate with the Departments/ Institutes/ Centres/ Schools/ Colleges for the advertisement well in advance.
- (2) The candidate shall submit his/ her application on prescribed Admission Form to the relevant admission office/ DSA office of the University within the prescribed time limit.
- (3) The departmental admission committee will grant admissions subject to the approval by the ASRB. The Departments/ Institutes/ Centres/ Schools/ Colleges will forward the cases to the ASRB before the start of sessional examination of the first semester. The ASRB will complete the admission process before the start of terminal examination of the first semester.
- (4) Number of scholars, to be enrolled shall be determined by the Departments/ Institutes/ Centres/ Schools/ Colleges, depending upon the availability of faculty.

## Admission Requirements

The eligibility criteria for admission to the Ph.D. degree programme shall be as under:

- (1) Have passed MS, M.Phil. And M.Sc. (Engineering) or equivalent 18-years education with at least CGPA 3.00/ 4.00 and at least CGPA 3.50/ 5.00 (at least 65% marks) in semester system and 1st division (60% marks) in annual system of examination.
- (2) Candidate should have no 3rd division in his/ her academic career provided that in case of the teachers of the University/ Degree Colleges engaged in postgraduate teaching and employees of the research organizations engaged in research, the Vice Chancellor may relax the condition of 3rd division in Matriculation or F.A./ F.Sc. examinations on compassionate grounds.
- (3) The candidate must have passed the GRE subject test or equivalent as per HEC/ University requirements.
  - a. In the case of Graduate Assessment Test (GAT) (<http://www.nts.org.pk/gat/gatsubject.asp>) a minimum of 60% score is required.
  - b. In the case of GRE subject test a minimum of 60% (for admissions thereafter) percentile score is required.



- c. If the test is not available in NTS subject, then a University committee consisting of at least 3 Ph.D. faculty members in the subject area, approved by the HEC will conduct the Test at par with GRE Subject Test and qualifying score for this test will be 70%.
- (4) Admissions will be granted on open merit basis. However, foreign candidate shall be selected through the Federal Ministry of Education, Government of Pakistan.
- (5) The candidate has to produce a certificate from the Medical Officer of any public sector hospital to the effect that he/she is free of any communicable disease or mental or physical disability which is likely to stand in the way of his/her pursuit of higher studies and research.
- (6) The candidate must have good moral character. All those candidates, who were punished by any Degree Awarding Institutions (DAI's) for acts of indiscipline and other undesirable activities and were awarded major penalties, shall not be admitted to postgraduate studies in the University under any circumstances. All other candidates, who were, awarded minor penalties for more than once shall also not be admitted to the postgraduate studies in the University.
- (7) All the employees of public sector organizations have to produce the certificate of study leave/ NOC to pursue the studies as a regular scholar from their respective head office.
- (8) The employee(s) of the University appointed on permanent/ adhoc/ contract basis shall be allowed to join the programme as whole time regular scholar(s) without obtaining leave of absence. Such employees shall have to produce a certificate from the concerned Head of Department to the effect that the normal teaching work of the employee will not be affected.



## Scheme of Study PhD Mechanical Engineering

OPTION-1				
Semester I				
Course Code	Type	Core/Elective	Subject	Credit hours
Subject I	Compulsory	Core	Offered from Ph.D. courses list	3
Subject II	Compulsory	Core	Offered from Ph.D. courses list	3
Subject III	Compulsory	Elective	Offered from Ph.D. courses list	3
Semester II				
Course Code	Type		Subject	Credit hours
Subject IV	Compulsory	Core	Offered from Ph.D. courses list	3
Subject V	Compulsory	Elective	Offered from Ph.D. courses list	3
Subject VI	Compulsory	Elective	Offered from Ph.D. courses list	3
Semester III-XVI				
Course Code	Type		Subject	Credit hours
EE-80000	Compulsory		Comprehensive Exam	0 (Pass/Fail)
EE-81000	Compulsory		Research Seminar	2
EE-83000	Compulsory		Thesis	50
<b>Note:</b> Semester III-XVI also includes passing Comprehensive Exam (Written Oral), Ph.D. Research Proposal, Final Open Defense				



<b>OPTION-2</b>				
<b>Semester I</b>				
<b>Course Code</b>	<b>Type</b>	<b>Core/Elective</b>	<b>Subject</b>	<b>Credit hours</b>
Subject I	Compulsory	Core	Offered from Ph.D. courses list	3
Subject II	Compulsory	Elective	Offered from Ph.D. courses list	3
<b>Semester II</b>				
<b>Course Code</b>	<b>Type</b>	<b>Core/Elective</b>	<b>Subject</b>	<b>Credit hours</b>
Subject III	Compulsory	Core	Offered from Ph.D. courses list	3
Subject IV	Compulsory	Elective	Offered from Ph.D. courses list	3
<b>Semester III</b>				
<b>Course Code</b>	<b>Type</b>	<b>Core/Elective</b>	<b>Subject</b>	<b>Credit hours</b>
Subject V	Compulsory	Core	Offered from Ph.D. courses list	3
Subject VI	Compulsory	Elective	Offered from Ph.D. courses list	3
<b>Semester IV-XVI</b>				
<b>Course Code</b>	<b>Type</b>		<b>Subject</b>	<b>Credit hours</b>
EE-80000	Compulsory		Comprehensive Exam	0 (Pass/Fail)
EE-81000	Compulsory		Research Seminar	2
EE-83000	Compulsory		Thesis	50
<b>Note:</b> Semester IV-XVI also includes passing Comprehensive Exam (Written Oral), Ph.D. Research Proposal, Final Open Defense				

Total credit hours for the degree program = 70

Minimum credit hours course work required in maximum four semester duration = 18

Two Seminars, one credit hour each (02 credit hours)

PhD Dissertation credit hours = 50

Synopsis to be submitted at the end of third semester

Comprehensive examination (Written +Oral)



## Students' Message

The helpful faculty and staff of the Mechanical Engineering Department have left no stone unturned in providing an environment encouraging to hard work. I have been motivated to work harder throughout my tenure. The department has state of the art labs and researcher those are working and guiding the graduate students. I definitely gained a better understanding of my research work



**Usman Ghani**  
**(MS Mechanical Engineering)**

Success is always blessed by Allah almighty. Time flies when you have wonderful people around you, home-like feelings, and also spiritual parents and teachers around you to guide you. It is a great honor for me to be a part of the MS energy system department. This program helps in developing critical thinking, imparts confidence, and promotes social interactions. The highly qualified faculty of mechanical engineering and energy system is polishing our skills to make us complete professionals. I would recommend that it is a great opportunity for those who want to excel in this filed and make this institute a leading one in the technology race



**Waheed Azam**  
**(MS Energy Systems)**



# DEPARTMENT OF **SOFTWARE ENGINEERING**

## **Our Vision**

To create a conducive environment for quality academic and research-oriented education in software engineering to prepare the students to meet future challenges; innovate and create novel solutions for the nation and society

## **Degree Programs Offered**

B.Sc. Software Engineering

MS Software Engineering





**Chairperson:**

Engr. Dr. Saadat Hanif Dar

Tel: +92-5827-961016

E-mail: [chairman.se@must.edu.pk](mailto:chairman.se@must.edu.pk)

**Message from Chairperson:**

Software Engineering is the most flourishing department at Mirpur University of Science and Technology. The department aspires to provide students with the in-demand skills of the industry, so that they can excel in their professions. The department is committed to achieve excellence in teaching and inculcating confidence in students. The principle goal is to engage students in the latest technologies and skills by exposing them to the committed faculty and well-equipped labs. Our motivation is to nurture their technical and leadership skills. The Department of Software Engineering is offering MS program from Fall 2019 which will enhance the research and development capacity of the university.



**Faculty members of Software Engineering**



## Faculty Members

### **Engr. Dr. Saadat Hanif Dar**

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**Qualification:** Ph.D

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## Faculty Members

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**Qualification:** BS

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## Faculty Members

### **Engr. Khan Awais Khan**

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## Lab Engineers

### **Mr. Zuhaib Ahmed Khan**

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**Area of interest:** Software Engineering

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## **B.Sc. Software Engineering**

Department of Software Engineering is actively engaged in disseminating software engineering education for the since 2006. The department of Software Engineering at MUST takes pride in being one of the highest-ranking departments of the university. We aim to impart quality education to prepare the students with the latest emerging fields in the subject of software engineering.

The Department is committed to produce young entrepreneur for career in Software Project management and Software development and integration. Software Engineering department covers wide domains such as software development, data bases, Computer Graphics, Networking and web developing etc. Their foundation is such that they can be life-long learners due to the department's strong emphasis on promoting research in the emerging fields such as artificial intelligence, robotics, machine learning, big data etc. at both undergraduate and graduate level.

Our graduates are well perceived and sought after by the industry where they have been successful in securing suitable positions. The department is equipped with state-of-the-art laboratories. These labs are always accessible by both students



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and the faculty and they are also linked through the state-of-the-art network environment.

## Program Mission

To produce Professional Software Engineers capable to meet the challenges of the local and international software industry, and who are abreast with the modern trends in the field of software engineering.

## Program Educational Objectives (PEOs)

### ➤ PEO-1

Apply adequate knowledge of Software Engineering to analyze and design the solutions for complex engineering problems.

### ➤ PEO-2

Communicate and work as an effective team member and manager.

### ➤ PEO-3

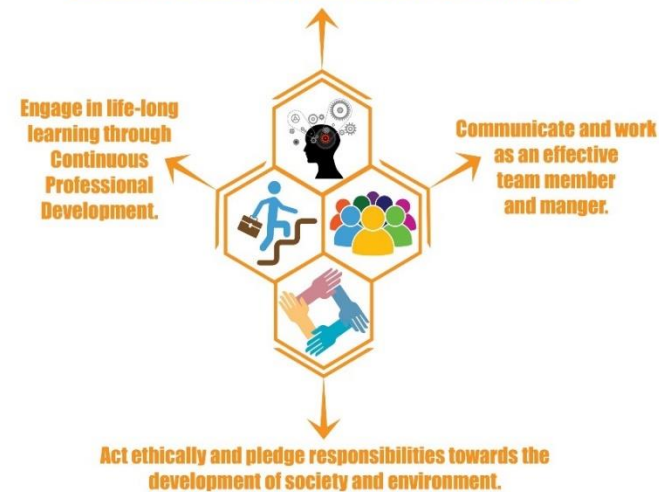
Act ethically and pledge responsibilities towards the development of society and the environment.

### ➤ PEO-4

Engage in life-long learning through Continuous Professional Development.

## Program Educational Objectives

Apply adequate knowledge of Software Engineering to analyze and design the solutions for complex engineering problems





## Program Learning Outcomes (PLOs)

PLO	Description
<b>Engineering Knowledge</b>	An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
<b>Problem Analysis</b>	An ability to identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences
<b>Design/ Development of Solutions</b>	An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
<b>Investigation</b>	An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions
<b>Modern Tool Usage</b>	An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities, with an understanding of the limitations.
<b>The Engineer and Society</b>	An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.
<b>Environment and Sustainability</b>	An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
<b>Ethics</b>	Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
<b>Individual and Team Work</b>	An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.
<b>Communication:</b>	An ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
<b>Project Management:</b>	An ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.
<b>Lifelong Learning</b>	An ability to recognize the importance of and pursue lifelong learning in the broader context of innovation and technological developments.



### Admission Criterion:

The admission requirements are as under:

- i. F. Sc. Pre-Engineering (Mathematics, Physics & Chemistry) with at least 60% marks or ICS (Mathematics, Physics & Computer Science) with at least 60% marks or equivalent qualification with at least 60% marks
- ii. Entry Test and Interview as per HEC/PEC requirements

### Duration

8-14 Semesters

### Scholarships Offered:

- |   |   |
|---|---|
| 1. University Merit Scholarship Scheme    | 9. National Bank Scholarship                                  |
| 2. MUST-Need Based Scholarship Program    | 10. Institutions of Engineers Pakistan (Saudi Arabian Center) |
| 3. HBL Foundation Stipend Scheme (HBLFSS) | 12. AJ&K Council Scholarship Scheme                           |
| 4. HEC-Need Based Scholarship Programme   | 13. AJ&K State Talent Scholarship Scheme                      |
| 5. Provincial Government Scholarship      | 14. Punjab Educational Endowment fund (PEEF)                  |
| 6. Benevolent fund scholarships           | 15. USAID Scholarship   |
| 7. Pakistan Engineering Congress          | 16. Fauji Foundation  |
| 8. Banking Council Scholarship            | 17. Diya Pakistan   |
|   | 18. ASHAI Educational Trust                                   |



## Scheme of Study (B.Sc. Software Engineering)

<b>Duration:</b>		<b>8-14 Semesters (4-7 Academic Years)</b>		
<b>Courses:</b>		<b>128 Credits</b>		
<b>Final Year Project:</b>		<b>6 Credits</b>		
<b>Total:</b>		<b>134 Credits</b>		
<b>Oral Comprehensive Examinations:</b>		<b>S/U Basis</b>		
<b>Internship:</b>		<b>S/U Basis</b>		
<b>Semester-1</b>				
Course Code	Course Title	Credit Hrs.		Prerequisite
		Th	Lab	
BSE-1101	Introduction to Info. & Comm. Technologies	3	1	
BPS-1102	Pakistan Studies	2	0	
BMT-1103	Calculus and Analytical Geometry	3	0	
BPH-1104	Applied Physics	3	0	
BEG-1105	English Composition & Comprehension	3	0	
BIS-1106	Islamic Studies / Ethics for Non-Muslims	2	0	
		<b>17</b>		
<b>Semester-2</b>				
Course Code	Course Title	Credit Hrs.		Prerequisite
		Th	Lab	
BSE-1201	Discrete Structures	3	0	
BMT-1202	Linear Algebra	3	0	
BSE-1203	Programming Fundamentals	3	1	
BAR-1204	Arabic (University Elective – I)	2	0	
BEG-1205	Communication & Presentation Skills	3	0	BEG-1105
BSE-1206	Introduction to Software Engineering	3	0	
		<b>18</b>		



<b>Semester-3</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>		<b>Prerequisite</b>
		<b>Th</b>	<b>Lab</b>	
BSE-2301	Software Requirement Engineering	3	0	BSE-1206
BMT-2302	Probability and Statistics	3	0	
BSE-2303	Software Engineering Industrial Perspectives (University Elective – II)	3	0	
BSE-2304	Object Oriented Programming	3	1	BSE-1203
BSE-2305	Information Security	3	0	
		<b>16</b>		
<b>Semester-4</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>		<b>Prerequisite</b>
		<b>Th</b>	<b>Lab</b>	
BSE-2401	Professional Practices	3	0	
BSE-2402	Software Design & Architecture	3	1	BSE-2301
BSE-2403	Computer Networks	3	1	
BSE-2404	Database Systems	3	1	
BSE-2405	Data Structures and Algorithms	3	1	
		<b>19</b>		
<b>Semester-5</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>		<b>Prerequisite</b>
		<b>Th</b>	<b>Lab</b>	
BSE-3501	Software Construction and Development	3	1	BSE-2402
BSE-3503	Operating Systems	3	1	BSE-2405
BSE-3504	Business Process Engineering (SE-Supporting-I)	3	0	
BSE-3504	Web Engineering	3	1	
	BSE Elective-I	2	1	
		<b>18</b>		



<b>Semester-6</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>		<b>Prerequisite</b>
		<b>Th</b>	<b>Lab</b>	
BSE-3601	Human Computer Interaction	3	0	
BSE-3602	Software Quality Engineering	3	1	
BEG-3603	Technical and Business Writing	3	0	
BSE-3604	Simulation and Modeling (SE-Supporting-II)	2	1	
	SE Elective – II	2	1	
		<b>16</b>		
<b>Semester-7</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>		<b>Prerequisite</b>
		<b>Th</b>	<b>Lab</b>	
FYP-4701	Final Year Project-I	0	3	
BSE-4702	Software Project Management	3	0	BSE-1206
BSE-4703	Software Re-Engineering	3	0	BSE-3501
BSE-4704	Formal Methods in Software Engineering (SE Supporting – III)	3	0	BSE-1201
	SE Elective – III	2	1	
		<b>15</b>		
<b>Semester-8</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>		<b>Prerequisite</b>
		<b>Th</b>	<b>Lab</b>	
FYP-4801	Final Year Project-II	0	3	
BET-4802	Entrepreneurship (University Elective – III)	3	0	
BSE-4803	Business Intelligence (University Elective – IV)	3	0	
	SE Elective – IV	3	0	
	SE Elective – V	3	0	
		<b>15</b>		



### List of Domain Specific Electives

Student has choice to select elective courses from list of course provided below.

Sr. #.	Domain	Course	Course Code	Credit Hours
1.	Enterprise Systems Engineering	Enterprise Resource Planning Systems	BDE-401	3+0
2.		Enterprise Application Development	BDE-402	2+1
3.	Software and System Security	Secure Software Development	BDE-403	2+1
4.		Information Security and Assurance	BDE-404	3+0
5.		Data Security & Encryption	BDE-405	3+0
6.	Information Systems and Data Processing	Advance Database Management Systems	BDE-406	2+1
7.		Data Warehousing	BDE-407	3+0
8.		Distributed Database Systems	BDE-408	2+1
9.		Data Mining	BDE-409	3+0
10.	Multimedia, Game and Entertainment Systems	Game Development	BDE-410	2+1
11.		Multimedia Systems Development	BDE-411	2+1
12.		Computer Graphics	BDE-412	2+1
13.	Intelligent Systems	Artificial Intelligence	BDE-413	2+1
14.		Computational Intelligence	BDE-414	3+0
15.		Neural Networks	BDE-415	3+0
16.		Fuzzy Logic	BDE-416	3+0
17.	Safety Critical Systems	Safety-Critical Systems Development	BDE-417	2+1
18.		Robotics	BDE-418	2+1
19.		Software Safety Critical Systems	BDE-419	3+0
20.		Software Fault Tolerance	BDE-420	3+0
21.	Embedded & Real time Systems	Real Time Operating Systems	BDE-421	3+0
22.		Hardware Modeling and Verification	BDE-422	3+0
23.		Digital Logic Design	BDE-423	2+1
24.	Digital Imaging and Computer Vision	Introduction to Bio-informatics	BDE-424	3+0
25.		Digital Image Processing	BDE-425	2+1
26.		Computer Vision	BDE-426	3+0





## Laboratories

Sr. #	Name of Lab	Type of Workstations	Nature of Experiments	No. of Students
1.	<b>Development &amp; Testing Lab</b>	Core i3, 500 GB HD,4GB RAM	Hands-on	1-1
2.	<b>Analysis &amp; Design Lab</b>	Core i3, 500 GB HD,4GB RAM	Hands-on	1-1
3.	<b>Electronics Lab</b>	1. Analog and digital trainer ETS-7000 8086 2. Microprocessor trainer MDA-win 3. Oscilloscope Aditeg Gos-620 (20 Mhz) 4. Digital Multi meter	Hands-on	3 to 4
4.	<b>General Programming Lab</b>	1. Core i3, 500 GB HD,4GB RAM 2. Dual core, 250GB,1GB	Hands-on	1-2
5.	<b>Research Lab</b>	Intel CORE i3 HP Omni 200 PC	Hands-on	2-3

After treading through seven semesters at MUST I can assure you this much that at Department of Software Engineering, MUST you would be in proficient and capable hands. The department has an energetic, caring and a dedicated faculty which is in their prime. The impacting experience of learning that you can garner with such a faculty might not be available elsewhere.



**Faisal Javed**  
(8<sup>th</sup> Semester)

The department of Software Engineering at MUST is handsomely equipped with the necessary resources and faculty with sound understanding of their subject. The department ensures that student get to excel not just in academics but also get ample opportunities to partake in extra-curricular activities and hence polish their skills outside the confines of academia. I must add, the environment at Software Engineering Department, MUST is highly conducive for learning and very pleasant.



**Ishmam Zarnab**  
(2<sup>nd</sup> Semester)



## MS Software Engineering

The Program involves teaching high level approaches of software quality assurance, information security and human computer interaction. The program ensures that the student will be able to conduct research and work along in a team and maintain lifelong learning. The program is designed according to international standards such as ACM/IEEE Curriculum guidelines in addition, the program was benchmarked with the international universities across the world such as University of Glasgow, Queen Mary university of London, UK, California state university, Northridge, USA, King Fahd university of petroleum and minerals. In addition, various

recent research concerned with the MSc in software Engineering curriculum are used in guidelines with Higher Education Commission (HEC) of Pakistan.

### Program Objectives

1. To produce software engineers with advanced knowledge of Software Engineering who can apply this knowledge to develop high quality modern software systems.
2. To produce researchers who can contribute to the Software Engineering through quality research work.
3. To produce software engineers for the effective contribution towards top-notch positions in software industry.





### Admission Criterion:

- **Qualification**

- B.Sc. (Software Engineering) / BS(SE) /B. E (SE) 4 years' degree program accredited with Pakistan Engineering Council (PEC).

OR

- \*B.Sc. (Computer Engineering) 4 years' degree program accredited with Pakistan Engineering Council (PEC).

- **Grades**

- Semester Based Examination
  - CGPA (**3.0 out of 4.0**)
- Annual System
  - Min Second Division

- No 3rd division is allowed.
- GAT / NTS general valid test.
- HEC attested degrees where applicable

### Degree Requirements:

- Four (4) courses (12 credit hours) from the core courses  
AND

Four (4) courses of 12 credit hours' graduate elective courses of which two graduate courses may be taken from other areas.

AND

Satisfactory defense of MS-Software Engineering thesis consisting of 6 credit hours according to the University prescribed format.

### Duration:

- **Full Time**

- Minimum Semesters = 4
- Maximum Semester = 6
- Credit Hours = 31
- Semester Duration = 18 Weeks
- 16 Weeks Teaching
- 2 Week Examination

- **Part Time**

- Minimum Semesters = 6
- Maximum Semester = 10
- Credit Hours = 31
- Semester Duration = 18 Weeks
- 16 Weeks Teaching
- 2 Week Examination



### Scheme of Study (MS Software Engineering)

<b>Duration:</b>	4-6 Semesters
<b>Core Courses:</b>	12 Credit Hours
<b>Elective Courses</b>	12 Credit Hours
<b>Thesis</b>	6 Credit Hours
<b>Seminar</b>	01 Credit Hour
<b>Total:</b>	31 Credit Hours

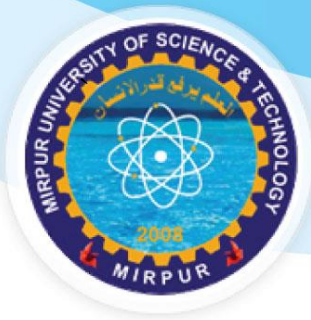
<b>Semester-1</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs</b>		<b>Prerequisite</b>
		<b>Th</b>	<b>Lab</b>	
MSE-7101	Advanced Requirements Engineering	3	0	
MSE-7102	Software Testing and Quality Assurance	3	0	
	Elective-I	3	0	
<b>Total</b>		<b>09</b>		
<b>Semester-2</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs</b>		<b>Prerequisite</b>
		<b>Th</b>	<b>Lab</b>	
MSE-7201	Software Project Management	3	0	
MSE-7103	Advance Software System Architecture	3	0	
	Elective-II	3	0	
<b>Total</b>		<b>09</b>		



Semester- 3 & 4				
Semester-3 Courses				
Course Code	Course Title	Credit Hrs		Prerequisite
		Th	Lab	
	Elective-III	3	0	
	Elective-IV	3	0	
Total		<b>09</b>		
<b>Thesis</b>		<b>6 Credit Hours</b>		

### List of Elective Courses

Sr. #	Course Code	Course Title	Credit Hours
1.	MSE-7104	Research Methodology	3+0
2.	MSE-7105	Software Risk Management	3+0
3.	MSE-7106	Software Measurement and Metrics	3+0
4.	MSE-7107	Software Configuration Management	3+0
5.	MSE-7108	Component Based Software Engineering	3+0
6.	MSE-7109	Design Patterns	3+0
7.	MSE-7110	Complex Networks	3+0
8.	MSE-7202	Agent Based Modelling	3+0
9.	MSE-7203	Formal Methods in Software Engineering	3+0
10.	MSE-7204	Aspect Oriented Software Development	3+0
11.	MSE-7205	Automated Software Engineering	3+0
12.	MSE-7206	Web Engineering	3+0



<b>13.</b>	MSE-7207	Advanced Human Computer Interaction	<b>3+0</b>
<b>14.</b>	MSE-7208	Usability Engineering	<b>3+0</b>
<b>15.</b>	MSE-7209	Advanced Operating Systems	<b>3+0</b>
<b>16.</b>	MSE-7210	Advance Databases	<b>3+0</b>
<b>17.</b>	MSE-7211	Data Mining and Warehousing	<b>3+0</b>
<b>18.</b>	MSE-7212	Distributed Databases	<b>3+0</b>
<b>19.</b>	MSE-7213	Computer Vision	<b>3+0</b>
<b>20.</b>	MSE-7214	Bio-informatics	<b>3+0</b>
<b>21.</b>	MSE-7215	Digital Image Processing	<b>3+0</b>
<b>22.</b>	MSE-7216	Machine Learning	<b>3+0</b>
<b>23.</b>	MSE-7217	Pattern Recognition	<b>3+0</b>
<b>24.</b>	MSE-7218	Artificial Intelligence	<b>3+0</b>
<b>25.</b>	MSE-7219	Ubiquitous Computing	<b>3+0</b>

### Students' Messaaes

Excellent teachers, great labs, nice décor and an exceptional focus on research right from its inception are some of the traits of the MSSE program at MUST. The way forward looks bright and fulfilling. I am sure this young program will be nurtured and matured into an eminent one by the competent faculty and the supporting facilities.



**Amsa Shabbir**  
2<sup>nd</sup> Semester

Having returned to the Department of Software Engineering, MUST as a student after the inauguration of its MS program in Fall 2019, I feel ecstatic and reinvigorated for my pursuit of learning. The MS program at the Department of Software Engineering is a promising one and already giving off the scent of success; heading in a research-oriented direction right from its outset.



**Khan Awais Khan**



# MIRPUR INSTITUTE OF TECHNOLOGY (MIT)

## Degree Programs Offered

- B.Sc. Civil Engineering Technology
- B.Sc. Electrical Engineering Technology
- B.Sc. Mechanical Engineering Technology





**Director MIT**  
**Dr. Sajjad Manzoor**  
**Tel. +92-5827-961062**  
**Email:**  
**[chairperson\\_et@must.edu.pk](mailto:chairperson_et@must.edu.pk)**

### **Message from Director**

It's a moment of pride and satisfaction to welcome you in MIT, MUST. It is my hope that through our programs, we are able to provide quality training which will enable our graduates to effectively engage in providing services in community settings. At MIT, MUST we believe in active learning through participatory approach whether we are dealing with academics or planning services for the individual and community needs. We pursue a holistic approach to understand human issues and attempt to explore their solutions. MIT, MUST fosters a culture of collaborative learning through innovative models of teaching and training. We understand that growth entails changes within and outside ourselves and, therefore, offer opportunities to our students and colleagues to reflect and engage in critical thinking.

Our curriculum is designed to ensure that our graduates will have the skills and the capacity to play a role in the national and global markets through service, research, policymaking and advocacy.

At MIT, MUST we aspire to develop the department into an icon of quality training of international standards, and our endeavors are making promising headways. If challenges excite you and you long for opening new windows through interdisciplinary endeavors, MIT, MUST provide you a platform to do just that.

I warmly welcome our new students who are embarking on this new journey towards transformation and excellence.



**Faculty members of MIT**



## Faculty Members (Electrical Engineering Technology)

### Dr. Sajjad Manzoor

Designation: (Assistant Professor)  
Qualification: Ph.D.  
Tel.: +92-5827-961062  
Email: [chairperson\\_et@must.edu.pk](mailto:chairperson_et@must.edu.pk)

### Engr. Faisal Iqbal

Designation: Lecturer  
Qualification: MSc Electrical Engineering  
Area of interest: Electronics  
Contact: [faisal.ee@must.edu.pk](mailto:faisal.ee@must.edu.pk)

### Engr. Adil Ahmad (On Study Leave)

Designation: Lecturer  
Qualification: MS Leave  
Area of interest: Power  
Contact: [adilch.ee@must.edu.pk](mailto:adilch.ee@must.edu.pk)

### Engr. Imran Riaz

Designation: Jr. Lecturer  
Qualification: M.Sc. Electrical Engineering  
Area of interest: Power Electronics  
Contact: [imran.ee@must.edu.pk](mailto:imran.ee@must.edu.pk)

### Dr. Tasleem Kauser

Designation: Lecturer  
Qualification: Ph.D.  
Area of interest: Biomedical  
Contact: [tasleem.ee@must.edu.pk](mailto:tasleem.ee@must.edu.pk)

### Engr. Obaid-ur-Rehman Pirzada

Designation: Lecturer  
Qualification: B.Sc. Electrical Engineering  
Area of interest: Electronics  
Contact: [obed\\_u@yahoo.com](mailto:obed_u@yahoo.com)

### Engr. Riffat Ara (On Study Leave)

Designation: Lecturer  
Qualification: MS  
Area of interest: Electrical Engineering

### Engr. Adnan Ashraf

Designation: Jr. Lecturer  
Qualification: B.Sc. Electrical Engineering  
Area of interest: Control Systems  
Contact: [adnan.mit@must.edu.pk](mailto:adnan.mit@must.edu.pk)



### **Engrt. Muhammad Awais Asghar**

Designation: Lab Technologist/Jr. Lecturer  
Qualification: BSc Electrical Engineering Technology  
Area of interest: Power  
Contact: [awais.et@must.edu.pk](mailto:awais.et@must.edu.pk)

## **Faculty Members (Civil Engineering Technology)**

### **Engr. Affan Jalil**

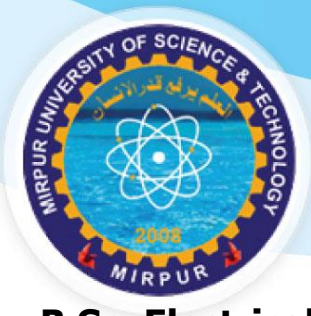
Designation: Lecturer  
Qualification: MSc Civil Engineering  
Area of interest: Concrete, Engineering Materials  
Contact: [affan.ct@must.edu.pk](mailto:affan.ct@must.edu.pk)

### **Engr. Zeeshan Tariq**

Designation: Jr. Lecturer  
Qualification: MSc Civil Engineering  
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### **Engrt. Awais Ahmed Naveed**

Designation: Lab Technologist/Jr. Lecturer  
Qualification: BSc Civil Engineering Technology  
Area of interest: Bridges, Geotech  
Contact: [awais.ct@must.edu.pk](mailto:awais.ct@must.edu.pk)



## **B.Sc. Electrical Engineering Technology**

A 4-year degree, entitled, BS in Electrical Engineering Technology provides the bright students an opportunity to realize their dream as Technologists by advancing their higher education in technical fields. It is an internationally recognized degree, which is offered in all advanced countries like USA, Canada, Australia, UK, Malaysia, and many more. The National Technology Council (NTC) is applying for the membership of Sydney Accord (<http://www.ieagreements.org/accords/sydney/>). Sydney accord is global accreditation for engineering technologists of the signatory countries, whereas, Washington Accord is for global accreditation for engineers.

In order to standardize 4-year degree in engineering technologies, NTC has given 4-year curricula for BS (Engineering Technology) in Civil, Electrical and Mechanical. The following distinct features of the curricula are stated here for information;

1. All programs have three years (6 semesters) of formal classroom education.
2. In both 7th and 8th semesters (fourth year), a student registers 16 credit hours of Supervised Industrial Training (16 credit hours) and three credit hours of Project in each semester.
3. In first three years, more emphasis has been put on lab work than theory classes. For example, during any semester of BS (Engineering), a student takes 15-16 credit hours of theory, and 2-3 credit hours of lab courses. However, in BS (Engineering Technology), a student takes 10-11 credit hours of theory and 5-7 credit hours of lab courses.
4. In engineering programs, 1-credit lab means 3 hours of supervised lab work, whereas, in engineering technology curriculum, it is 2 credit hours mean 6 hours of lab work.
5. The program shall be structured based on Outcome Based Education (OBE) system.



## **Vision and Mission of Program**

### **Vision Statement**

To be recognized as one of the leading programs of engineering technology education in Pakistan and to provide quality education in the field of Electrical Engineering and Technology for the development of the human resource with professional ethics that would contribute towards a better civilized world.

### **Mission Statement**

To provide quality education and produce competent Electrical technologists conscious of professional, ethical, and social responsibilities for productive careers in industry in national and international level.

### **Program Educational Objectives (PEOs)**

**PEO 1:** To produce competent Electrical Engineering Technologists having strong technical knowledge to serve and manage national and international industries and organizations.

**PEO 2:** To fulfil the needs of society in identifying and solving new technical challenges in engineering technology and related fields using fundamental engineering technology principles with modern tools and practices.

**PEO 3:** To instil the ability to communicate and function effectively as individuals and team- members with leadership and entrepreneurial potential.

**PEO 4:** To demonstrate life-long learning through advanced technical and professional development activities to enhance their ethics and skills and capabilities for personal growth and betterment of society and environment

### **Program Learning Objectives (PLOs)**

**PLO: 1. Engineering Technology Knowledge:** An ability to apply knowledge of mathematics, science, engineering technology fundamentals and specialization to the solution of complex problems.



**PLO: 2. Problem Analysis:** An ability to identify, formulate, research literature, and analyze complex problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

**PLO: 3. Design/Development of Solutions:** An ability to design solutions for complex problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.

**PLO: 4. Investigation:** An ability to investigate complex problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions.

**PLO: 5. Modern Tool Usage:** An ability to create, select and apply appropriate techniques, resources, and modern engineering technology and IT tools, including prediction and

modeling, to complex engineering activities, with an understanding of the limitations.

**PLO: 6. The Engineering Technologist and Society:** An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.

**PLO: 7. Environment and Sustainability:** An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.

**PLO: 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

**PLO: 9. Individual and Team Work:** An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.



**PLO: 10. Communication:** An ability to communicate effectively, orally as well as in writing, on complex technological activities with the engineering technologist community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PLO: 11. Project Management:** An ability to demonstrate management skills and principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.

**PLO: 12. Lifelong Learning:** An ability to recognize importance of pursuing lifelong learning in the broader context of innovation and technological developments.

#### **Admission Criterion:**

- F.Sc. (Pre-Engg.) OR Equivalent with minimum of 50% marks.

OR

- D.A.E (Electrical/ Electronics) with minimum of 50 % marks.
- Entry test conducted by the University.

#### **Duration**

8-10 Semesters

#### **Scholarships Offered:**

- University Merit Based Scholarships
- University Need Based Scholarships
- HEC Need Based Scholarships
- HBL Foundation Scholarships Scheme

#### **Degree Requirements:**

Minimum CGPA required to earn degree 2.50

## **Scheme of Study (B.Sc. Electrical Engineering Technology)**





<b>Programme Duration:</b>	8-10 Semesters
<b>Courses:</b>	97 Credits
<b>Project:</b>	6 Credits
<b>Supervised Industrial Training:</b>	32 Credits
<b>Total</b>	135 Credits

1 <sup>st</sup> Semester 1 <sup>st</sup> Year:							
Sr. No	Course Code	Subject	Nature	Credit Hours		Weekly Contact Hours	
				Theor y	Lab	Theory	Lab
1	HS-111	Islamic Studies / Professional Ethics	Humanities	2	0	2	0
2	GS-112	Applied Mathematics-I	Natural Science /Math	3	0	3	0
3	GS-113	Applied Physics	Natural Science/ Physics	2	1	2	3
4	ET-114	Basic Circuit Analysis	Major based Breadth	2	2	2	6
5	ET-115	Engineering Drawing	Engineering Foundation	1	2	1	6
6	ET-116	Introduction to Computer Fundamentals	Computer Science	1	2	1	6
<b>Total</b>				<b>11</b>	<b>07</b>	<b>11</b>	<b>21</b>
<b>Grand Total</b>				<b>11+07=18</b>		<b>11+21=32</b>	



### 2<sup>nd</sup> Semester 1<sup>st</sup> Year:

Sr. No	Course Code	Subject	Nature	Credit Hours		Weekly Contact Hours	
				Theory	Lab	Theory	Lab
1	HS-121	Communication Skills	Humanities/ English	2	0	2	0
2	HS-122	Pakistan Studies	Humanities	2	0	2	0
3	ET-123	Electronics	Major Based Breadth	2	2	2	6
4	ET-124	Basic Mechanical Technology	Engineering Foundation	2	1	2	3
5	GS-125	Applied Mathematics -II	Natural Science/ Math	3	0	3	0
6	ET-126	AC Circuit Analysis	Major based Depth	2	2	2	6
<b>Total</b>				<b>13</b>	<b>05</b>	<b>13</b>	<b>15</b>
<b>Grand Total</b>				<b>13+05=18</b>		<b>13+15=28</b>	

### 3<sup>rd</sup> Semester 2<sup>nd</sup> Year:

Sr.No	Course Code	Subject	Nature	Credit Hours		Weekly Contact Hours	
				Theory	Lab	Theory	Lab
1	ET-231	Power Generation Systems	Engineering Foundation	2	0	2	0
2	HS-232	Technical Report Writing	Humanities/ English	2	0	2	0
3	ET-233	Electrical Instruments and Measurements	Major based Breadth	2	2	2	6
6	ET-234	Electrical Machines-I	Major based Breadth	2	1	2	3
5	ET-235	Digital Electronics	Major based Breadth	2	2	2	6
6	HS-236	Arabic	Humanities	2	0	2	0
<b>Total</b>				<b>12</b>	<b>05</b>	<b>12</b>	<b>15</b>
<b>Grand Total</b>				<b>12+05=17</b>		<b>12+15=27</b>	



#### 4<sup>th</sup> Semester 2<sup>nd</sup> Year:

Sr.No	Course Code	Subject	Nature	Credit Hours		Weekly Contact Hours	
				Theory	Lab	Theory	Lab
4	ET-241	Electrical Machines-II	Major based Depth	2	2	2	6
2	ET-242	Electro-Magnetic Fields	Major based Depth	2	0	2	0
3	ET-243	Electrical Power Transmission	Major based Depth	2	1	2	3
4	ET-244	Electrical Power Distribution and Utilization	Major based Depth	2	1	2	3
5	ET-245	Power Electronics	Major based Depth	2	2	2	6
6	GS-246	Total Quality Management	Major based Depth	2	0	2	0
<b>Total</b>				<b>12</b>	<b>06</b>	<b>12</b>	<b>18</b>
<b>Grand Total</b>				<b>12+06=18</b>		<b>12+18=30</b>	

#### 5<sup>th</sup> Semester 3<sup>rd</sup> Year:

Sr.No	Course Code	Subject	Nature	Credit Hours		Weekly Contact Hours	
				Theory	Lab	Theory	Lab
1	ET-351	Micro-Processor Theory & Interfacing	Major based Depth	2	1	2	3
2	ET-352	Switch Gear & Protective Devices	Major based Depth	2	1	2	3
3	ET-353	Communications Technology	Major based Depth	2	2	2	6
4	ET-354	Control Technology	Major based Depth	2	1	2	3
5	ET-355	High Voltage Technology	Major based Depth	2	1	2	3
6	ET-356	Project (Continue)	Major based Depth	0	2	0	6
<b>Total</b>				<b>10</b>	<b>08</b>	<b>10</b>	<b>24</b>
<b>Grand Total</b>				<b>10+08=18</b>		<b>10+24=34</b>	

#### 6<sup>th</sup> Semester 3<sup>rd</sup> Year:



Sr.No	Course Code	Subject	Nature	Credit Hours		Weekly Contact Hours	
				Theory	Lab	Theory	Lab
1	GS-361	Project Management	Management Science	1	0	1	0
2	ET-362	Power System Analysis	Major based Depth	2	0	2	0
3	ET-363	Data & Computer Communication	Major based Depth	2	2	2	6
4	ET-364	Industrial Drives & PLC	Major based Depth	2	2	2	6
5	ET-365	Project	Major based Depth	0	4	0	12
<b>Total</b>				<b>07</b>	<b>08</b>	<b>07</b>	<b>24</b>
<b>Grand Total</b>				<b>07+08=15</b>		<b>07+24=31</b>	
<b>7<sup>th</sup> Semester 4<sup>th</sup> Year:</b>							
Sr.No	Course Code	Subject	Credit Hours		Contact Hours		
			Theory	Lab	Theory	Lab	
1	ET-471	16 Weeks Supervised Industrial / Field Training (8*5=40Hrs/ Week)	0	16	0	40*16 =640	
<b>Total</b>			<b>00</b>	<b>16</b>	<b>00</b>	<b>640</b>	
<b>Grand Total</b>			<b>00+16=16</b>		<b>00+640=640</b>		
<b>8<sup>th</sup> Semester 4<sup>th</sup> Year:</b>							
Sr.No	Course Code	Subject	Credit Hours		Contact Hours		
			Theory	Lab	Theory	Lab	
1	ET-481	16 Weeks Supervised Industrial / Field Training (8*5=40Hrs/ Week)	0	16	0	40*16 =640	
<b>Total</b>			<b>00</b>	<b>16</b>	<b>00</b>	<b>640</b>	
<b>Grand Total</b>			<b>00+16=16</b>		<b>00+640=640</b>		



## Laboratories

Sr. #	Name of Laboratory	Lab (s) Course (s) Conducted in the Lab	No of students/ workstation
6.	<b>Electrical Technology Lab</b>	1. Basic Circuit Analysis 2. AC Circuit Analysis	3-5
7.	<b>Machine Lab (Shared)</b>	1. AC Machine 2. DC Machine	3-5
8.	<b>Power System Protection and Transmission Lab (Shared)</b>	1. Switchgear and Protective Devices 2. Electrical Power Transmission	3-5
9.	<b>DLD Lab (Shared)</b>	1. Digital Electronics 2. Microprocessor Theory and Interfacing	3-5
10.	<b>Power Distribution and Utilization (Shared)</b>	Electrical Power Distribution and Utilization	3-5
11.	<b>Electronics Lab (Shared)</b>	1. Electronics 2. Power Electronics	3-5

### Student's Messages

Being a student of Department of Mirpur Institute of Technology (MIT). It was pleased to join MUST. It was my best decisions to take admission in Electrical Engineering Technology. I feel proud it makes me expert in my field. My personality developed and groomed up. The Labs are up-to date and the equipment's available is the modern of its field. The interaction with faculty has given me tremendous confidence. The faculty has a good reputation in term of good work. The university provides financial support and intensives to talented and needy students in the form of scholarship. The Electrical Engineering Technology is curving me for field work and practical life. MUST is playing a vital role in polishing my hidden skills and boosting self-confidence. The time I have spent here is eniovable and knowledae full experience of mv life.



**M. Awais Asghar**  
**Electrical Engineering**  
**Technology**  
**Session (2014-18)**



## **B.Sc. Civil Engineering Technology**

A 4-year degree, entitled, BS in Civil Engineering Technology provides the bright students an opportunity to realize their dream as Technologists by advancing their higher education in technical fields. It is an internationally recognized degree, which is offered in all advanced countries like USA, Canada, Australia, UK, Malaysia, and many more. The NTC is applying for the membership of Sydney Accord. Sydney accord is global accreditation for engineering technologists of the signatory countries, whereas, Washington Accord is for global accreditation for engineers.

In order to standardize 4-year degree in engineering technologies, NTC has given 4-year curricula for BS (Engineering Technology) in Civil, Electrical and Mechanical. The following distinct features of the curricula are stated here for information;

1. All programs have three years (6 semesters) of formal classroom education.
2. In both 7th and 8th semesters (fourth year), a student registers 15 credit hours of "Supervised Industrial Training (15 credit hours)" and three credit hours of Project.
3. In first three years, more emphasis has been put on lab work than theory classes. For example, during any semester of BS (Engineering), a student takes 15-16 credit hours of theory, and 2-3 credit hours of lab courses. However, in BS (Engineering Technology), a student takes 10-11 credit hours of theory and 5-7 credit hours of lab courses.
4. In engineering programs, 1-credit lab means 3 hours of supervised lab work, whereas, in engineering technology curriculum, it is two hours of lab work.
5. The program shall be structured based on Outcome Based Education (OBE) system.



## Program Mission

To provide quality education and produce competent Civil Engineering technologist's conscious of professional, ethical, and social responsibilities for productive careers in industry in national and international level.

## Program Educational Objectives (PEOs)

**PEO 1:** To produce competent civil engineering technologists having strong technical knowledge to serve and manage national and international industries and organizations.

**PEO 2:** To fulfil the needs of society in identifying and solving new technical challenges in engineering technology and related fields using fundamental engineering technology principles with modern tools and practices.

**PEO 3:** To instil the ability to communicate and function effectively as individuals and team- members with leadership and entrepreneurial potential.

## Program Learning Objectives (PLOs)

**PLO: 1. Engineering Technology Knowledge:** An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

**PLO: 2. Problem Analysis:** An ability to identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

**PLO: 3. Design/Development of Solutions:** An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.

**PLO: 4. Investigation:** An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and



interpretation of experimental data, and synthesis of information to derive valid conclusions.

**PLO: 5. Modern Tool Usage:** An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.

**PLO: 6. The Engineering Technologist and Society:** An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.

**PLO: 7. Environment and Sustainability:** An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.

**PLO: 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

**PLO: 9. Individual and Teamwork:** An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.

**PLO: 10. Communication:** An ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PLO: 11. Project Management:** An ability to demonstrate management skills and engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.





**PLO: 12. Lifelong Learning:** An ability to recognize importance of pursuing lifelong learning in the broader context of innovation and technological developments.

#### **Admission Criterion**

- F.Sc. (Pre-Engg.) Or Equivalent with minimum of 50% marks.
- OR
- D.A.E (Civil) with minimum of 50 % marks.
  - Entry test conducted by the University.

#### **Selection Criterion**

Each candidate must appear in the Combined Entry Test of engineering universities. The weightage of the SSC, FSC. and combined entry test is as under:

S.S.C = 10%

F.Sc. = 60 %

Entry test = 30 %

The cumulative percentage of S.S.C., F.Sc. and Entry Test defines the merit for admission.

#### **Scholarships Offered:**

- University Merit Based Scholarships
- University Need Based Scholarships
- HEC Need Based Scholarships
- HBL Foundation Scholarships Scheme

#### **Degree Requirements:**

Minimum CGPA required to earn degree 2.50

#### **Duration:**

8-10 Semesters



## Proposed Scheme of Study (B.Sc. Civil Engineering Technology)

Programme Duration:	8-10 Semesters
Courses:	97 Credit Hours
Project:	06 Credit Hours
Supervised Industrial Training:	32 Credit Hours
<b>Total:</b>	<b>135 Credit Hours</b>

Year/ Sem. no	Sr. no	Course Code	Course Title	Knowledge Area	Credit Hours	
					Theory	Lab
<b>1<sup>st</sup> Semester 1<sup>st</sup> Year</b>	1	GS-111	Applied Mathematics-I	Natural Science /Math	3	0
	2	GS-112	Engineering Geology	Natural Science	1	1
	3	HS-113	Islamic Studies	Humanities	3	0
	4	CT-114	Materials and Methods of Construction	Engineering Foundation	3	1
	5	CT-115	Computer applications	Computer Science	2	1
<b>2<sup>nd</sup> Semester 1<sup>st</sup> Year</b>	<b>Sr. no</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Knowledge Area</b>	<b>Credit Hours</b>	
					<b>Theory</b>	<b>Lab</b>
	1	CT-121	Concrete Technology	Engineering Foundation	2	2
	2	HS-122	Communication Skills	Humanities/ English	3	0
	3	CT-123	Applied Mechanics	Engineering Foundation	2	2
4	CT-124	Civil Engineering Drawing	Engineering Foundation	1	2	
5	GS-125	Applied Mathematics –II	Natural Science	3	0	



	Sr. no	Course Code	Course Title	Knowledge Area	Credit Hours	
					Theory	Lab
<b>3<sup>rd</sup> Semester 2<sup>nd</sup> Year</b>	1	CT-231	Introduction to Architecture and Town Planning	Engineering Foundation	2	0
	2	HS-232	Pakistan Studies	Humanities	2	0
	3	CT-233	Quantity Surveying and Contract Documents	Engineering Foundation	1	2
	4	CT-234	Soil Mechanics	Major based Breadth	2	2
	5	CT-235	Fluid Mechanics	Major based Breadth	2	1
	6	CT-236	Mechanics of Solids	Major based Breadth	2	2
	Sr. no	Course Code	Course Title	Knowledge Area	Credit Hours	
					Theory	Lab
<b>4<sup>th</sup> Semester 2<sup>nd</sup> Year</b>	1	CT-241	Transportation Engineering	Major based Breadth	2	2
	2	CT-242	Surveying	Engineering Foundation	2	2
	3	CT-243	Environmental Management	Basic	2	1
	4	CT-244	Theory of Structures	Major based Depth	2	1
	5	HS-245	Technical Report Writing	Humanities/ English	2	0
	6	HS-246	Arabic	Humanities	2	0



	Sr. no	Course Code	Course Title	Knowledge Area	Credit Hours	
					Theory	Lab
<b>5<sup>th</sup> Semester 3<sup>rd</sup> Year</b>	1	CT-351	Hydrology	Major based Breadth	2	1
	2	CT-352	Reinforced Concrete Structures	Major based Breadth	2	1
	3	CT-353	Construction and Hydraulic Machinery	Major based Depth	2	1
	4	CT-354	Computer Aided Building Modelling and Design	Major based Depth	1	2
	5	CT-355	Foundations Engineering	Major based Depth	2	1
	6	GS-356	Project Management	Management Science	1	0
	7	CT-357	Project	Major based Depth	0	2
<b>6<sup>th</sup> Semester 3<sup>rd</sup> Year</b>					Credit Hours	
	Sr. no	Course Code	Course Title	Knowledge Area	Theory	Lab
	1	CT-361	Pre- stressed & Precast concrete	Major based Depth	2	1
	2	CT-362	Water Supply & Waster Water Management	Major based Breadth	2	2
	3	CT-363	Irrigation and Hydraulic Structures	Major based Depth	2	1
4	CT-364	Steel Structures	Major based Depth	2	1	
5	CT-365	Project	Major based Depth	0	4	
<b>7<sup>th</sup> Semester 4<sup>th</sup> Year</b>					Credit Hours	
	Sr. no	Course Code	Course Title	Knowledge Area	Theory	Lab
1	CT-471	16 Weeks Supervised Industrial / Field Training ( 8*5=40Hrs/ Week)			0	16
<b>8<sup>th</sup> Semester 4<sup>th</sup> Year</b>					Credit Hours	
	Sr. no	Course Code	Course Title	Knowledge Area	Theory	Lab
1	CT-481	16 Weeks Supervised Industrial / Field Training ( 8*5=40Hrs/ Week)			0	16



## Laboratories

Sr. #	Name of Laboratory	Lab (s) Course (s) Conducted in the Lab	No of students/ workstation
1	<b>Transportation Engineering Laboratory (Shared)</b>	3. Transportation Engineering-I 4. Transportation Engineering-II	6-7
2	<b>Computer Aided Design Laboratory (Shared)</b>	1. Computer Fundamentals 2. Building Construction Drawing & Graphics (Autocad) 3. Computer Programming	6-7
3	<b>Fluid Mechanics and Hydraulics Engineering Lab (Shared)</b>	1. Fluid Mechanics 2. Advanced Fluid Mechanics 3. Hydraulics Engineering 4. Engineering Hydrology 5. Irrigation Engineering	6-7
4	<b>Concrete Testing Laboratory (Shared)</b>	1. Plain and Reinforced Concrete-I 2. Plain and Reinforced Concrete-II 3. Properties of Concrete	7-8
5	<b>Geotechnical Engineering Laboratory (Shared)</b>	1. Geo-Technical Engineering-I 2. Geo-Technical Engineering-II 3. Foundation and Pavement Engineering	7-8



**FACULTY OF  
NATURAL AND  
APPLIED SCIENCES**



### **Dean Faculty of Natural & Applied Sciences:**

Prof. Dr. Shaukat Mahmood

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### **Dean's Message**

Welcome to the Faculty of Science (FoS) at the Mirpur University of Science and Technology (MUST), Mirpur. It is my privilege to serve as Dean for this prestigious FoS. The MUST is one of the leading universities to develop career and to make its graduates a precious asset of the country. The key to success of the FoS lies in the aspirations of our students, the hard work of our outstanding faculty members and the steady support of the MUST leadership. Science is one of the principle ways in which we as a society understand the world around us and solve the problems that beset us and to create a secure and safe society. Scientific endeavours provide us the ability to understand the universe, global ecosystem, evolution and diversity of life, feeding and combatting diseases. The first goal of the FoS is to acquire the knowledge and the second to prepare graduates for a quality of adult life in the global village as responsible citizens. Therefore, the expectations upon and responsibilities given to FoS from our society are held by us to be paramount. The FoS consists of seven academic Departments: Biotechnology, Botany, Chemistry, Computer Science and Information Technology, Mathematics, Physics and Zoology. Faculty annually admits about 900 students and offers the BS (4-year), M.Sc., MCS, M.Phil. (2-year) and Ph.D. degree programmes. We are constantly revamping our curriculum to reflect the broadening spectrum of science to meet the needs of the day. We believe that the best learning often takes place outside the lecture theatre. Our students have many opportunities for enriching their experiences such as undergraduate research, group discussions, field trips, internships, seminars, workshops and conferences. They enjoy a congenial atmosphere with one another along with our experienced faculty who have a missionary zeal for producing an excellent academic atmosphere. The overarching objective of the FoS is to



produce professionals who are knowledgeable and technically-savvy in their respective areas of expertise and who are not afraid to tackle challenging problems. The faculty take pride in the high quality of our teaching and research. We are continuing to develop our strategic plan for future and identified four key themes: enabling research of the highest caliber in the natural, physical and biological sciences; elevating the quality of our undergraduate and graduate educational experiences to the level of our research; and increasing our impact on the society. Our faculty is focused in the research areas such as Biotechnology, Molecular Genetics, Genomics, Stem Cell Technology, Biodiversity and Conservation, Material and Chemical Science, Nano Science, Solid State and Nuclear Physics, Mathematical Modeling, Statistics, Artificial Intelligence and Computational Science. This research training at the FoS will help prepare graduates to become an articulate communicator, a careful thinker, a person who is concerned with good health and healthy interpersonal relationships that cross cultural boundaries. I invite you to explore the exciting programs and become part of tremendous growth which is expected to continue even at faster pace. We will help you equip with latest technologies and skills to face the challenges and create the world of tomorrow. Our goal is to contribute to the sustainable and peaceful development of human society through the research and educational activities of science. We always consider how we can foster dreams and hopes in the young people who are the future of Pakistan.



# DEPARTMENT OF BIOTECHNOLOGY



## Our Vision

Our vision is to produce high caliber Biotechnology professionals with interdisciplinary approaches to fulfill the needs of country's economic, industrial, agricultural, health, medicine, energy and environmental sectors.

## Programs Offered

BS Biotechnology  
M.Phil. Biotechnology  
Ph.D. Biotechnology



**Chairperson:**

Dr. Muhammad Tariq Awan

Tel. : +92-5827-961999

E-mail:

[tariq.awan@must.edu.pk](mailto:tariq.awan@must.edu.pk)

**Message from Chairperson:**

It gives me great pleasure to introduce you to the department of Biotechnology that started its journey back in 2010. The Department of Biotechnology offers an inspiring and intriguing experience of learning and research to students in the discipline of Biotechnology. It employs cellular and molecular processes to develop products and tools that improve the value of human and animal life as well as our environment. Our aspiration is to empower our young generations by imparting the latest knowledge of biosciences having applications in everyday life to

combat unprecedented and unparalleled situations in pursuit of a better tomorrow. The overarching goals and ambitions of biotechnology are; to diagnose and eradicate rare & evolving diseases; produce affordable food for the ever-increasing world population; and to generate clean energy and environment for society. Despite much advancement and progress in life sciences over the last three decades, the best is yet to come, and we are positive and look forward to new era ahead which would offer us new exciting things in near future to deal with. At MUST, we believe in imparting theoretical and practical knowledge that fosters a clear understanding of how science is performed in its true sense, how experiments are planned, and how data is evaluated and communicated subsequently. We strive to give our students a variety of laboratory-based training during their courses covering a variety of core concepts of Biology along with relevant sciences. Furthermore, we also offer research project to our final year undergraduate students under the supervision of experienced professors. Above all, our faculty is committed to achieve excellence by delivering best out of their potential and abilities. We also provide career counselling service to students that would help them in getting jobs and pursuing research at higher level. Our former students are offering their services at home and abroad in well reputed institutes which encourage and keep us motivated to continue our service at present capacity. In the end I would like to say, if you love biology and want to pursue your professional efforts in a rapidly evolving discipline, join MUST to experience thrill and excitement in Biotechnology.



**Faculty members of Biotechnology Department**



## Faculty Members

### Dr. Muhammad Tariq Awan

**Designation** Assistant Professor & Coordinator  
**Qualification** PhD  
**Area of interest** Stem Cells, Nanotechnology and Medicinal plants  
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### Prof. Dr. Maqsood Ahmed

**Designation** Professor  
**Qualification** PhD  
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### Prof. Dr. Rehana Asghar

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**Qualification** PhD  
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### Dr. Imran Ali

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### Dr. M. Altaf Hussain

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### Dr. Abdul Jabbar

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## Faculty Members

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### Dr. Zeeshan Shamim

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### Dr. Muhammad Sufian

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### Ms Saadia Mehboob

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**Qualification** M.Phil  
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### Ms Binish Javaid

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**Area of interest** Human Molecular Genetics  
**Contact** binish.javaid@must.edu.pk

### Ms Rabia Yaseen

**Designation** Lecturer  
**Qualification** M.Phil  
**Area of interest** Genetic Mapping of Genes  
**Contact** rabia.yasin@must.edu.pk



## BS Biotechnology

The BS Program in Biotechnology is aimed at to establish the grounds for lifelong education by creating essential concepts and equipping the student with necessary techniques, needed to start a career of research, development, teaching and exploring applications in various disciplines of modern sciences.

### Program Objectives:

The overall goal of BS program is to prepare young minds for a better career prospects and enhance student knowledge in new spheres of Biotechnology by inculcating them with the state of the arts skills and sagacity. Furthermore, to develop ability in students to work effectively on interdisciplinary teams and demonstrate problems solving and organizational skills.

### Admission Criterion:

- Must have passed F.Sc. (Pre-Medical), Biology, Chemistry and Physics or Computer Science with at least 50% marks.
- No D-grade in academic record
- Entry test

### Scholarships Offered:

- |  |   |
|--|---|
| 1. HEC Need-base Scholarships              | 7. Punjab Education                             |
| 2. HBL Foundation Scholarships             | Endowment Fund (PEEF)                           |
| 3. MUST Merit Scholarships                 | 8. Teachers Foundation                          |
| 4. MUST Need Base Scholarships             | 9. Benevolent Fund grant                        |
| 5. Sara Ahmed Joo Saraf Trust Scholarships | 10. AJ&K State Talent                           |
| 6. Students-Guardians Insurance Scheme     | 11. AJK-PEEF Scholarship                        |
|  | 12. Prime Minister Electric's Wheelchair Scheme |
|  | 13. EHSAAAS Scholarship                         |

### Duration:

8-12 Semesters



## Scheme of Study BS Biotechnology

Semester – 1		
Course Codes	Course Titles	Credits
ENG-1107	English-I	3+0
ISL-1112	Islamic Studies	2+0
MAT-1115	Mathematics-I (pre-calculus)	3+0
BIOT-1104	Ecology, Biodiversity & Evolution–I	3+0
CHE-1104	Inorganic Chemistry	2+1
BIOT-1106	Cell Biology	2+1
Semester – 2		
Course Codes	Course Titles	Credits
ENG-1207	English-II	3+0
PS-1217	Pakistan Studies	2+0
BIOT-1203	Biochemistry-I	2+1
CHE-1204	Organic Chemistry	2+1
BIOT-1205	Ecology, Biodiversity & Evolution–II	2+1
BIOT-1206	Microbiology	2+1



<b>Semester – 3</b>		
<b>Course Codes</b>	<b>Course Titles</b>	<b>Credits</b>
ENG-2307	English-III	3+0
COM-2305	Introduction to Computer Science	2+1
BIOT-2303	Introduction to Biotechnology	3+0
PSY-2319	Psychology	3+0
BIOT-2305	Biochemistry-II	2+1
MAT-2315	Biomathematics	3+0
<b>Semester – 4</b>		
<b>Course Codes</b>	<b>Course Titles</b>	<b>Credits</b>
BIOT-2401	Biophysics	3+0
STA-2420	Probability & Biostatistics	3+0
BIOT-2403	Any subject from Social Sciences	3+0
CHE-2404	Physical Chemistry	3+0
BIOT-2405	Principle of Genetics	3+0
BIOT-2406	Molecular Biology	3+0





<b>Semester – 5</b>		
<b>Course Codes</b>	<b>Course Titles</b>	<b>Credits</b>
BIOT-3501	Analytical Chemistry and Instrumentation	2+1
BIOT-3502	Introduction to Immunology	3+0
BIOT-3503	Methods in Molecular Biology	1+2
BIOT-3504	Principles of Biochemical Engineering	2+1
BIOT-3505	Introduction of Bioinformatics	1+2
BIOT-3506	Genetic Resources & Conservation	3+0
<b>Semester – 6</b>		
<b>Course Codes</b>	<b>Course Titles</b>	<b>Credits</b>
BIOT-3601	Microbial Biotechnology	3+0
BIOT-3602	Agriculture Biotechnology	2+1
BIOT-3603	Food Biotechnology	3+0
	Elective-I (from list of elective courses)	3+0
BIOT-3605	Seminar-I	1+0
BIOT-3606	Research Planning and Scientific Writing	3+0



<b>Semester – 7</b>		
<b>Course Codes</b>	<b>Course Titles</b>	<b>Credits</b>
BIOT-4701	Health Biotechnology	3+0
BIOT-4702	Environmental Biotechnology	2+1
BIOT-4703	Genomics and Proteomics	3+0
BIOT-4704	Research Project or	0+6
BIOT-4708	Special Paper-1 (Molecular Diagnostics)	0+3
BIOT-4709	Internship	3+0
	Elective-II (from list of elective courses)	3+0
<b>Semester – 8</b>		
<b>Course Codes</b>	<b>Course Titles</b>	<b>Credits</b>
BIOT- 4801	Seminar-II	1+0
BIOT- 4802	Industrial Biotechnology	2+1
BIOT- 4803	Biosafety & Bioethics	2+0
BIOT- 4704	Research Project or	0+6
BIOT- 4711	Special Paper – II (Recent Trends in Biotechnology)	0+3
	Elective-III (from list of elective courses)	3+0
	Elective-IV (from list of elective courses)	3+0



<b>Elective Courses</b>		
<b>Course Codes</b>	<b>Course Titles</b>	<b>Credits</b>
BIOT-3604	Introduction to Cell and Tissue Culture	2+1
BIOT-3607	Fungal Biotechnology	3+0
BIOT-3608	Biofuels and Biorefineries	3+0
BIOT-3609	Hospital Waste Management	2+1
BIOT-3610	Fundamentals of Enzymology	2+1
BIOT-4705	Animal Biotechnology	3+0
BIOT-4706	Water and Wastewater Treatment	2+1
BIOT-4707	Introduction to Nanobiotechnology	3+0
BIOT-4805	Marine Biotechnology	3+0
BIOT-4806	Radiobiology	3+0
BIOT-4807	Pharmaceutical Biotechnology	3+0
BIOT-4808	Biosensor	3+0
BIOT-4809	Fermentation Biotechnology	2+1
BIOT-4810	Introduction to Virology	3+0
BIOT-4812	Cellular Signaling	3+0



## **M.Phil. Biotechnology**

The M.Phil. Program in Biotechnology has been developed in line with national needs compatible to international standards. The course contents of the M.Phil. Program were prepared according to market needs and have been developed in accordance with the HEC recommended guidelines. A broad range of courses related to biology, genomics, proteomics, bioinformatics, metabolomics, cell biology and molecular biology are offered in this program.

### **Program Objectives**

The M.Phil. Program in Biotechnology is aimed at to develop a passion for biotechnological/research skills in graduating students to enable them to participate actively in society in areas such as industrial, agricultural, pathological and pharmaceutical biotechnology and forensic sciences. The program inculcates in graduates the ability to appraise research

protocols, evaluate reports and efficiently publish findings to the benefit of the society and carry out advanced research and studies for higher degree in various fields of biotechnology.

### **Admission Criterion:**

1. Must have passed M.Sc./BS (4-year) with at least 65% marks in semester system and 50% marks in annual system in Biotechnology/ Biology/ Biochemistry/ Botany/ Zoology/ Molecular Biology/ Bioinformatics/ Pharm-D/ Medical Lab Technology/ DVM or Agriculture Science.
2. Have no third division in the academic career.
3. Have passed the GAT General conducted by NTS.
4. An Entry Test conducted by the University.

### **Duration:**

4-6 Semesters



### Scheme of Study (M.Phil. Biotechnology)

Semester – 1			
Sr. No.	Course code	Course Title	Credit Hours
1.	BIOT – 70X	Elective – 1	3
2.	BIOT – 70X	Elective – 2	3
3.	BIOT – 70X	Elective – 3	3
4.	BIOT – 70X	Elective – 4	3
Semester – 2			
Sr. No.	Course code	Course Title	Credit Hours
1.	BIOT – 70X	Elective – 1	3
2.	BIOT – 70X	Elective – 2	3
3.	BIOT – 70X	Elective – 3	3
4.	BIOT – 70X	Elective – 4	3
Semester – 3 & 4			
Sr. No.	Course code	Course Title	Credit Hours
1.	BIOT-726	Seminar	1
2.	BIOT-727	Thesis	25



### Elective Courses

CODE	COURSE	CR. HRS	CODE	COURSE	CR. HRS
BIOT-701	Advances in Microbial Biotechnology	3	BIOT-714	Advances in Enzyme Biotechnology	3
BIOT-702	Recombinant DNA Technology	3	BIOT-715	Medical Biotechnology	3
BIOT-703	Advances in Biochemistry	3	BIOT-716	Forensic Biotechnology	3
BIOT-704	Advances in Molecular Genetics	3	BIOT-717	Advances in Industrial Biotechnology	3
BIOT-705	Techniques in Biotechnology	3	BIOT-718	Advances in Environmental Biotechnology	3
BIOT-706	Advances in Immunology	3	BIOT-719	Human Biotechnology	3
BIOT-707	Biosafety and Bioethics	2	BIOT-720	Advances in Pharmaceutical Biotechnology	3
BIOT-708	Biostatistics	3	BIOT-721	Advances in Stem Cell Technology	3
BIOT-709	Advances in Genomics	3	BIOT-722	Advances in Tissue Culture	3
BIOT-710	Advances in Bioinformatics	3	BIOT-723	Applications of Biotechnology	3
BIOT-711	Advances in Nanobiotechnology	3	BIOT-724	Business Entrepreneurship	3
BIOT-712	Advances in Plant Biotechnology	3	BIOT-725	Medical Microbiology	3
BIOT-713	Advances in Animal Biotechnology	3			



## Ph.D. Biotechnology

Biotechnology is widely recognized as the 21st century technology which has resulted after profound improvements in molecular biology and associated technologies during last century. As applications of biotechnology range from agricultural to biomedical sciences, the demand of this expertise and manpower is increasing across the globe. We offer research in several hot topics of the biosciences which ranges from application of biotechnology in human to plant sciences, high throughput sequencing to bioinformatics and proteomics.

### Program Objectives

The overall goal of Ph.D. program is to cater scholars of the Department to have better career prospects, to enhance their knowledge in new spheres of Biotechnology and acquire new skills and techniques.

The specific objectives of the Ph.D. program are:

1. To develop the innovative, conducive, creative and dynamic learning and research environment to confront the problems of present as well as future in the field of Biotechnology.
2. To prepare scholars to identify, formulate and critically analyze the present-day issues in the field of biotechnology.
3. To develop the ability among scholars to work effectively on interdisciplinary teams and demonstrate problem solving, leadership and organizational skills.





### **Admission Criterion:**

1. Must have passed M. Phil with at least CGPA 3.00/4.00 or 3.50/5.00 (at least 65% marks) in semester system and 1st division (at least 60% marks) annual system of examination. in the respective discipline with Biotechnology/ Biology/ Biochemistry/ Botany/ Zoology/ Molecular Biology/ Bioinformatics/ Pharmacy/ DVM or Agriculture Science.
2. Have no 3rd division in academic career.
3. Have passed GAT/GRE (Subject) with at least 60% marks.
4. An Interview conducted by the University.
5. Willingness of Faculty Member for Supervision

6. The Candidate must have Passed the GRE subject test or equivalent as per HEC/ University guidelines.

### **Degree Requirements**

As per University Calendar

### **Postgraduate Scholarships Offered**

- i- MUST Merit Scholarships
- ii- Prime Minister Fee Reimbursement Scheme (PMFRS)
- iii- Pakistan Scottish Scholarship for Young Women
- iv- Prime Minister National Laptop Scheme (PMNLS)
- v- National Endowment Scholarships for Talent (NEST)
- vi- Prime Minister Electric's Wheelchair Scheme
- vii- Punjab Education Endowment Fund (PEEF)
- viii- AJ&K State Talent
- ix- AJK-PEEF Scholarship





## Scheme of Study (Ph.D. in Biotechnology)

<b>Semester – 1</b>			
<b>Sr. No.</b>	<b>Course code</b>	<b>Course Title</b>	<b>Credit Hours</b>
1.	BIOT – 75X	Core Subject – 1 (Will be selected from Core Subject List)	3
2.	BIOT – 75X	Core Subject – 2 (Will be selected from Core Subject List)	3
3.	BIOT – 75X	Core Subject – 3 (Will be selected from Core Subject List)	3
<b>Semester – 2</b>			
<b>Sr. No.</b>	<b>Course code</b>	<b>Course Title</b>	<b>Credit Hours</b>
1.	BIOT – 75X	Core Subject – 4 (Will be selected from Core Subject List)	3
2.	BIOT – 75X	Core Subject – 5 (Will be selected from Core Subject List)	3
3.	BIOT – 70X	Elective Subject (Will be selected from M.Phil Courses)	3
<b>Semester – 3 &amp; Onwards</b>			
<b>Sr. No.</b>	<b>Course code</b>	<b>Course Title</b>	<b>Credit Hours</b>
1.	BIOT-756	Seminars (I+II)	1+1
2.	BIOT-757	Thesis	50
<b>Core Subjects</b>			
<b>Sr. No.</b>	<b>Course code</b>	<b>Course Title</b>	<b>Credit Hours</b>
1.	BIOT-751	Integrated Biological Resources Management	3
2.	BIOT-752	Advances in Biotechnology	3
3.	BIOT-753	Project Planning, Monitoring and evaluation Evaluation	3
4.	BIOT-754	DNA-Protein Modules	3
5.	BIOT-755	Cloning Modules	3



## Facilities and Resources

The Department has been blessed with professional academic personnel with a diverse expertise in studying key biological issues of our society. This provides a unique opportunity for students to learn from teachers having multi-faceted capabilities, knowledge and research interests. The faculty members are keen and look forward to guide them for their future research and career. Besides lecture rooms, the department has two General cum Research Labs and all necessary equipment. are available to students and researchers. A departmental Library has been established which has a collection of more than 1,000 books related to various fields of Biotechnology in addition to several reference books.

## Labs and Research Groups

All the faculty members of the department are engaged in research & development (R&D) in addition to teaching and other activities. The research is focused on various disciplines of Biotechnology particularly Stem Cells, Nanobiotechnology, Industrial biotechnology, Protein engineering, Molecular Biology, Bioassay, Plant biotechnology, Tissue Culture and Bioinformatics.

### 1) Regenerative Medicine Research Group

- a) Treatment of chronic wounds by combination of stem cells, hydrogels and nanoparticles.
- b) Treatment of diabetes by stem cells and enhancement of therapeutic potential of stem cells.
- c) Extraction of plant materials from different parts of medicinal plants and evaluation of their antidiabetic and hepatoprotective activities.

### 2) Industrial & Environmental Biotechnology Research Group

- a) Engineering of Industrial Enzymes and Heterologous protein expression
- b) Fermentation of Agriculture wastes for efficient Utilization
- c) Production of Industrially important Microbial Enzymes
- d) Microbial treatment of Industrial and non-Industrial wastewater
- e) Microbial production of bio-surfactants

### 3) Plant Genetics and Metabolomics Research Group

- a) Genetic characterization of plants
- b) Polymorphism and evolution
- c) Application of metabolome-derived knowledge in Plant Biotechnology



- d) How metabolic processes participate in determining the complex phenotypes
- e) Biological assays, qualitative and quantitatively measures across a large range of metabolites
- f) To pinpoint the functional gene(s) and the characterization of massive metabolites ultimately offering trait specific markers to improve commercially important traits

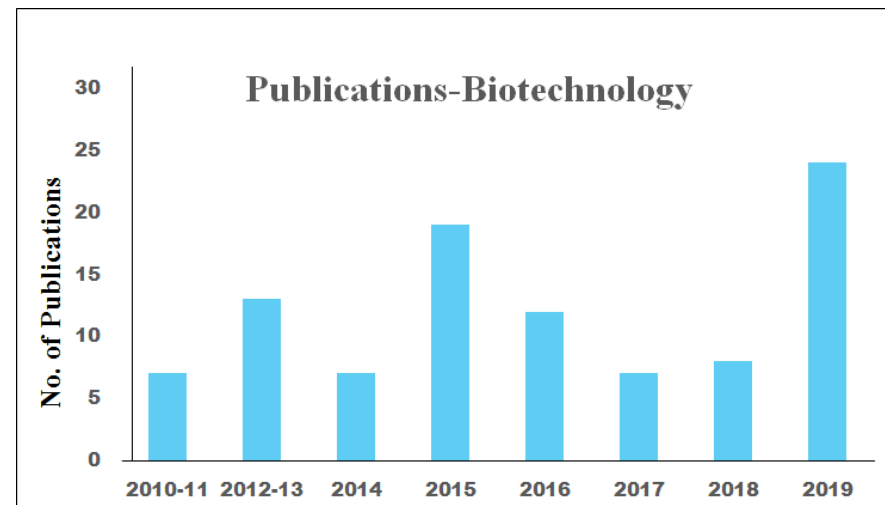
#### 4) Plant Biotechnology and Reproductive Biology Research Group

- a) Meiotic recombination in sexual reproduction,
- b) Evolution of polyploid crops
- c) Drought resistance in crops

#### 5) Bioinformatics Research Group

- a) Computational Characterization of Structure and Function of Newly Identified Proteins
- b) Sequence-based Analysis of Biotechnological Important Genomes and Clinically Significant Proteins

#### c) Big-Data Mining using Scripting





## ALUMNI MESSAGES

It was golden time of my life at Department of Biotechnology, MUST during my M.Phil (02 years) program. I found the faculty members very professional and cooperative, the relation between faculty and students is very cordial. The two years spent here were splendid and has helped me excel professionally as well as personally.



**Muhammad Jamil Malik**  
**Assistant Professor**  
**F.G College**  
**Mangla Cantt**

Joining Department of Biotechnology MUST was vital and key decision in my academic career and a dream coming true to excel in studies. The faculty members help students to exploit their potentials and talents to optimum level and to acquire the deserved knowledge, skill and confidence, they need for assuming their future assignments



**Zia-ul-Mehmood**  
**Drug Inspector**  
**Health Department**

Six years back when I joined this prestigious institution, I did not know what opportunities and exposure it would bring up for me. Now as an M.Phil student when I look back to where I had started my journey, every moment is worth counting. All the faculty members have always encouraged critical thinking and promoted a friendly academic environment. The Department of Biotechnology has not only equipped me with academic knowledge but also enhanced my research potential and helped me with my personal growth. I feel honoured to be a part of



**Momina Khaqan**  
**M.Phil**  
**Biotechnology**  
**Session: 2018-20**

# DEPARTMENT OF **CHEMISTRY**

## Programs Offered

BS Chemistry  
M.Sc. Chemistry  
M.Phil. Chemistry  
Ph. D. Chemistry





**Chairperson:**

Prof. Dr. Muhammad Aziz Choudhary

Tel.: +92-05827-961100

E-mail: [chairperson.chemistry@must.edu.pk](mailto:chairperson.chemistry@must.edu.pk)

**Message from Chairperson:**

The Department of Chemistry was established in January, 2010. Over the past years, BS-Chemistry, M.Sc. Chemistry, M.Phil. & Ph.D. Chemistry programs have been introduced. The Department of Chemistry has had the honor of producing two Ph.D. and above 100 M.Phil. manpower who are contributing in diverse institutes of National repute. Department of chemistry is a leading department of the Universities in Azad

Jammu and Kashmir. The department is staffed with 15 outstanding faculty dynamically involved in research and instruction. The department has been striving hard to impart quality education to the students and to carry out research in the numerous fields of chemistry, viz. Material Science, Organometallic, Bio-analytical, Environmental, and Synthetic & Natural Product Chemistry. A very favorable faculty-to-student ratio inspires close contact between students and their faculty mentors, and permits the mentors to give personalized helpfulness to the academic and research progress of each of their students. Many of our faculty have won prestigious teaching and research productivity awards. I urge upon the students to be good scientist in chemistry to try to come and join the department undergraduate and postgraduate programs. Our undergraduate and graduate programs are designed to deliver students with a concrete theoretical background in chemistry and to introduce them to the joy of participating in challenging and creative research programs. Our faculty view graduate students as developing investigators and partners in their research enterprises and are committed to their success and development as independent scientists. Fully functional labs and library are available at the department. Our laboratories are equipped with the modern and automated technology. A wide range of instruments such as High-Performance Liquid Chromatograph, UV-Vis, Fluorescent & IR Spectrophotometers, Differential Scanning Calorimeter, Cyclic Voltammeter, Thermal Analyzer, so nicators, fume hoods, centrifuges, and furnaces, etc., are available to facilitate M.Phil. & Ph.D. programs under the supervision of highly qualified faculty and supporting staff. We invite young students and researchers to join us for their educational journey and to achieve the excellent goals of thriving and successful society.



### **Faculty members of Chemistry Department**

**From Left to Right:**

Dr. Shahid Aziz, Dr. Arshad Farooq Butt, Prof. Dr. Tahseen Ghous, Prof. Dr. Mohammad Aziz Ch., Dr. Tashfeen Akhtar, Dr. Javeed Akhtar, Dr. Zahoor Ahmed



## Faculty Members

### Prof. Dr. Muhammad Aziz Choudhary

**Designation:** Professor

**Qualification:** Ph.D. Pak., Post Doc. USA

**Area of interest:** Inorganic and Analytical Chemistry

**Email:** [chairperson.chemistry@must.edu.pk](mailto:chairperson.chemistry@must.edu.pk)

### Prof. Dr. Tehseen Ghous

**Designation:** Professor

**Qualification:** Ph.D. (UK), Post-Doc. (UK)

**Area of interest:** Biochemistry

**Email:** [tahseen.ghous@gmail.com](mailto:tahseen.ghous@gmail.com)

### Dr. Tashfeen Akhtar

**Designation:** Associate Professor

**Qualification:** Ph.D. (Pak.)

**Area of Interest:** Organic Chemistry

**Email:** [tashfeenchem@must.edu.pk](mailto:tashfeenchem@must.edu.pk)

### Dr. Zahoor Ahmad

**Designation:** Associate Professor

**Qualification:** Ph.D. (China)

**Area of Interest:** Organic Chemistry

**Email:** [zahoor.chem@must.edu.pk](mailto:zahoor.chem@must.edu.pk)

### Prof. Dr. Habib-Ur-Rehman (S.I)

**Designation:** Meritorius Professor

**Qualification:** Ph.D. Pak., Post Doc. USA

**Area of Interest:** Natural Products

### Dr. M. Aslam Mirza

**Designation:** Associate Professor

**Qualification:** Ph.D. (Pak.)

**Area of Interest:** Analytical Chemistry

**Email:** [aslamchem@must.edu.pk](mailto:aslamchem@must.edu.pk)

### Dr. Javeed Akhtar

**Designation:** Associate Professor/Director ASRB

**Qualification:** Ph.D. (U.K)

**Area of Interest:** Nanostructured materials for energy applications

**Email:** [javeedkt@gmail.com](mailto:javeedkt@gmail.com)

### Dr. Arshad Farooq Butt

**Designation:** Assistant Professor

**Qualification:** Ph.D. (Pak.)

**Area of Interest:** Organic Chemistry

**Email:** [arshad.chem@must.edu.pk](mailto:arshad.chem@must.edu.pk)





## Faculty Members

### Dr. Shahid Aziz

**Disignation:** Assistant Professor  
**Qualification:** Ph.D. (Pak.), Post.Doc. (Pak.)  
**Area of Interest:** Organic Chemistry  
**Email:** shahid\_uajk@hotmail.com

### Dr. Asma Naz

**Disignation:** Assistant Professor  
**Qualification:** Ph.D. (Pak.)  
**Area of Interest:** Physical Chemistry  
**Email:** khalilahmad77@gmail.com

### Dr. Muhammad Ehsan

**Disignation:** Assistant Professor (Contract)  
**Qualification:** Ph.D., Post.doc. (Korea)  
**Area of Interest:** Inorganic Chemistry  
**Email:** ehsan.chem@must.edu.pk

### Mrs. Rashida Nazir

**Disignation:** Lecturer  
**Qualification:** M.Phil. (Ph.D in Progress)  
**Area of Interest:** Inorganic Chemistry  
**Email:** tariqmadeeha07@gmail.com

### Dr. Khalil Ahmad

**Disignation:** Assistant Professor  
**Qualification:** Ph.D. (Germany), Post-Doc. (China)  
**Area of Interest:** Computational Chemistry  
**Email:** khalilahmad77@gmail.com

### Dr. Muhammad Aamir

**Disignation:** Assistant Professor  
**Qualification:** Ph.D. (Pak.), Post-Doc. (LUMS, Pak.)  
**Area of Interest:** Computational Chemistry  
**Email:** amir.chem@must.edu.pk

### Mrs. Madiha Tariq

**Disignation:** Lecturer  
**Qualification:** M.Phil. (Ph.D in Progress)  
**Area of Interest:** Organic Chemistry  
**Email:** tariqmadeeha07@gmail.com



## **BS Chemistry**

BS-Chemistry curriculum covers the fundamental concepts of chemistry that help understanding the matter around us, and it is a practical science with extensive applications. This program provides the basic and modern concepts of material, physical, inorganic, organic, analytical, environmental and bio chemistry. It is a four-year degree program and courses offered are designed according to the scheme of studies approved by the Higher Education Commission (HEC) of Pakistan so as to meet the national and international standards.

### **Program Mission**

The BS in Chemistry makes students capable to pursue their careers as professional chemists and also serves as a footing for careers in various other fields including health and medicine. The curriculum offers a fundamental knowledge of the major fields of chemistry such as the general areas of

inorganic, organic, and physical chemistry and many other specialized courses in analytical, material and biochemistry. Students also gain laboratory experience in inorganic and organic synthesis, analytical methods, physicochemical measurements, and spectroscopy.

### **Program Educational Objectives (PEOs)**

The main objectives of BS-Chemistry curriculum are:

- To provide a diverse, and supportive environment where faculty, and students have opportunities for advancing their knowledge.
- To attain chemical knowledge and laboratory skills required for a professional chemist.
- To understand basic principles of analytical, inorganic, organic, applied, material and physical chemistry.
- To develop critical thinking and problem solving aptitude in students.



- To apply the acquired knowledge of chemistry for the enhancement of socio-economic growth of country.

### **Program Learning Objectives (PLOs)**

- Students will know the general principles of chemistry. They will be able to compare and contrast physical properties and chemical reactivity from molecular structure. They will be able to perform standard stoichiometric, solution, kinetic and thermodynamic calculations.
- They will know the common reactions of elements and compounds, including oxidation reduction, neutralization, and precipitation reactions. They will know the common methods of functional group inter-conversions, be able to perform retro-synthetic analysis, propose multistep syntheses, and evaluate synthetic schemes.
- They will demonstrate accurate quantitative measurements, interpret experimental results, and prepare compounds using multistep syntheses, followed by separation, purification, and identification by modern chemical and spectroscopic analysis.

- They will be able to operate the sophisticated chemical instrumentation and respond properly to the hazards of handling chemicals.
- They will be capable at using computer technology to learn, display and analyze chemical information.
- Students will progress through their chosen chemistry degree program in a timely manner and will be educationally prepared to work in scientific fields related to chemistry.

**Admission Criterion:**

F.Sc. Pre-medical or Pre-engineering with minimum 45% marks.

**Duration:**

8-12 Semesters

**Scholarships Offered:**

Following scholarships can be achieved:

1. Ehsaas undergraduate scholarship program
2. Need based scholarship
3. Merit based scholarship
4. HBL Foundation Scholarship Scheme



### Scheme of Study (BS Chemistry)

<b>Duration:</b>	8-12 Semesters	
<b>Courses:</b>	129 Credits	
<b>Final Year Project/Special Paper:</b>	03+03=06	
<b>Total:</b>	135 Credit Hours	
<b>SEMESTER-I</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>
BOT-1103	Diversity of Plants	3+0
CHEM-1104	Inorganic Chemistry	3+1
COM-1105	Computer Applications	2+1
ENG-1107	English-I (Functional English)	3+0
MAT-1115	Mathematics-I	3+0
ZOO-1123	Principles of Animal Life-I	3+0
	<b>Total Credits</b>	<b>18</b>



<b>SEMESTER-II</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>
BOT-1203	Plant Systematics, Anatomy & Development	3+0
CHEM-1204	Organic Chemistry	3+1
ENG-1207	English-II (Functional)	3+0
ISL-1212	Islamic Studies	2+0
STA-1220	Statistics	3+0
ZOO-1223	Principles of Animal Life-II	3+0
	<b>Total Credits</b>	<b>18</b>
<b>SEMESTER-III</b>		
<b>Course Code</b>	<b>Course title</b>	<b>Credits</b>
BOT-2303	Cell Biology Genetics and Evolution	3+0
CHE-2304	Physical Chemistry	3+1
ENG-2307	English-III (Report Writing)	3+0
ZOO-2323	Diversity of Animal Life-I	3+0
CHE-2398	Environmental Chemistry	3+0
GEN-300	Pakistan Studies	2+0
	<b>Total Credits</b>	<b>18</b>



<b>SEMESTER-IV</b>		
<b>Course code</b>	<b>Course title</b>	<b>Credits</b>
ARA-2401	Arabic	3+0
CHEM-2404	Analytical Chemistry	3+1
CHEM-2491	Applied Chemistry	2+0
CHEM-2481	Biochemistry	2+1
BOT-2403	Plant Physiology and Ecology	3+0
ZOO-2423	Diversity of Animal Life-II	3+0
	<b>Total Credits</b>	<b>18</b>
<b>Only four disciplines to be selected for 5th and 6th semesters each, with option between Biochemistry and Analytical Chemistry</b>		
<b>SEMESTER-V</b>		
<b>Course code</b>	<b>Course title</b>	<b>Credits</b>
CHEM-3501	Physical Chemistry-I	3+1
ZOL-3102	Animal Physiology	3+1
CHEM-3521	Inorganic Chemistry-I	3+1
CHEM-3541	Organic Chemistry-I	3+1
CHEM-3561	Analytical Chemistry-I	3+1
CHEM-3581	Biochemistry-I	3+1
	<b>Total Credits</b>	<b>16</b>



<b>SEMESTER VI</b>		
<b>Course Code</b>	<b>Course title</b>	<b>Credits</b>
CHEM-3601	Physical Chemistry-II	3+1
CHEM-3621	Inorganic Chemistry-II	3+1
CHEM-3641	Organic Chemistry-II	3+1
CHEM-3661	Analytical Chemistry-II	3+1
CHEM-3681	Biochemistry-II	3+1
CHEM-3699	Applied Computer for Chemist	1+1
	<b>Total Credits</b>	<b>18</b>
<b>Students may opt for any one of the five sections namely, Physical, Inorganic, Organic, analytical and Biochemistry</b>		
<b>SEMESTER-VII</b>		
<b>Course code</b>	<b>Course title</b>	<b>Credits</b>
CHEM-47aa	Physical Chemistry	3 (3,0), 3(0,3)
CHEM-47bb	Inorganic Chemistry	3 (3,0), 3(0,3)
CHEM-47cc	Organic Chemistry	3 (3,0), 3(0,3)
CHEM-47dd	Analytical Chemistry	3 (3,0), 3(0,3)
	<b>Total Credits</b>	<b>12+3=15</b>





SEMESTER–VIII		
Course code	Course title	Credits
CHEM-48aa	Physical Chemistry	3 (3,0), 3(0,3)
CHEM-48bb	Inorganic Chemistry	3 (3,0), 3(0,3)
CHEM-48cc	Organic Chemistry	3 (3,0), 3(0,3)
CHEM-48dd	Analytical Chemistry	3 (3,0), 3(0,3)
CHEM-48ee	Biochemistry	3 (3,0), 3(0,3)
(OR)		
CHEM-48bb	Research Report	3 (0,3)
<b>Total Credits</b>		<b>12+3=15</b>

\*Three courses will be opted from the selected discipline and there will be option between research report OR a course from any other discipline.

**COURSE CODES (SEMESTER VII-VIII):**

01-20 Physical Chemistry; 21-40 Inorganic Chemistry; 41-60 Organic Chemistry; 61-80 Analytical Chemistry, 81-95 Biochemistry; aa, bb, cc and dd: Define the choice of the section.



## List of Elective Courses

<b>Semester-I</b>				
<b>Out of the following courses only two courses will be offered depending on the availability of faculty.</b>				
<b>Course Codes</b>	<b>Course Title</b>	<b>Lecture Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
ZOO-1123	Principles of Animal Life-I	3	0	3
BOT-1103	Diversity of plants	3	0	3
	Psychology	3	0	3
	Cell biology	3	0	3
	Geography	3	0	3
<b>SEMESTER-III</b>				
<b>Out of the following courses only two courses will be offered depending on the availability of faculty.</b>				
<b>Course Codes</b>	<b>Course Title</b>	<b>Lecture Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
ZOO-2323	Diversity of animal life-I	3	0	3
BOT-2303	Cell Biology, Genetics and Evolution	3	0	3
CAL-0000	Calculus	3	0	3
PHY-0000	Physics-I	3	0	3
RM-0000	Risk Management	3	0	3
HM-0000	Household Management	3	0	3



#### SEMESTER-IV

Out of the following courses only two courses will be offered depending on the availability of faculty.

Course Codes	Course Title	Lecture Hrs.	Lab. Hrs.	Cr. Hrs.
BOT-2403	Plant Physiology and Ecology	3	0	3
ZOO-2423	Diversity of Animal Life-II	3	0	3
PHY-0000	Physics-II	3	0	3
HRM-0000	Human Resource Management	3	0	3
ENT-0000	Entrepreneurship	3	0	3
ETH-0000	Ethics	3	0	3

#### Student's Message

Most children acquire the same eye colour or a similar shaped nose from their parents, but I have inherited much more a passion for learning and insatiable curiosity which has led me to study in MUST. I'm honoured to be a proud student of BS-Chemistry at MUST. I Department is providing an innovative and conducive learning environment to enhance our ability and skills to cope with emerging challenges in future.



**Amna Ijaz**  
**BS-**  
**Student**



## **M.Sc. Chemistry**

This degree program aims to communicate the contemporary concepts of chemistry as pertinent in the latest developments, and academic and industrial applications as well. By 2025, it has been estimated that eight billion human beings will need food, energy and medicine for survival. If you want to be the part of those who provide solutions, study for an M.Sc in Chemistry.

### **Program Mission**

Two-year M.Sc. degree program aims to inculcate conceptual understandings in the field of organic, inorganic, physical, analytical, and material chemistry, endowing students to put on their knowledge to the advancement of the diverse areas of the society.

### **Program Educational Objectives (PEOs)**

- Inculcation of the technical and analytical skills in students to work successfully in numerous fields of chemistry.
- Development of skills in quantifiable modelling of dynamic and static chemical systems.
- Developing laboratory capability in linking chemical structure to spectroscopic phenomena.
- Enhancement of expertise in the use of lab equipment/instruments to resolve research problems, collection of data and its interpretation.
- Development of professional aptitude in the students.

### **Program Learning Objectives (PLOs)**

- Accomplishment of proficient teaching system on the basis of exposure to global innovations.
- Updating the pre-designed curricula to make available a varied comprehension in major fields of chemistry.



- Establishment of well-equipped teaching and research laboratories depending on the available resources, maintaining a high level of scientific excellence in teaching, research, theses and publications.
- To focus on newly emerging national and global research problems related to chemistry.
- To inculcate ethical values in students and enhance community based activities to a promising level for the benefit of the nation.

#### **Admission Criterion:**

- B.Sc. in Botany, Zoology, and Chemistry or B.S.Ed. in Botany, Zoology, and Chemistry with minimum 45% marks (2nd Division).
- No 3rd division in academic career.
- Age Limit 26 Years.



#### **Scholarships Offered:**

1. HBL Merit and Need Based Scholarships
2. MUST Merit and Need Based Scholarships

#### **Duration:**

4 – 6 Semesters





## Scheme of studies for (M. Sc. Chemistry)

### I- Compulsory Courses for M.Sc. Chemistry

<b>Duration:</b>	8-12 Semesters	
<b>Courses/ Labs:</b>	68 Credits	
<b>Total:</b>	68 Credit Hours	
<b>SEMESTER-I</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>
CHM-5101	Physical Chemistry- I	3+1
CHM-5121	Inorganic Chemistry- I	3+1
CHM-5141	Organic Chemistry –I	3+1
CHM-5161 OR CHM-5181	Analytical Chemistry- I OR Biochemistry- I	3+1
CHM-0198	Mathematics for Chemist	2+0
	<b>Total credits</b>	<b>18</b>
<b>SEMESTER-II</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>
CHM-5201	Physical Chemistry- II	3+1
CHM-5221	Inorganic Chemistry- II	3+1
CHM-5241	Organic Chemistry –II	3+1
CHM-5261 OR CHM-5281	Analytical Chemistry-II OR Biochemistry- II	3+1
CHM-5298	Environmental Chemistry	2+0
	<b>Total credits</b>	<b>18</b>



### Compulsory/Elective Courses for M.Sc. Chemistry Semester-3 and Semester-4:

SEMESTER-III		
Course Code	Course title	Credits
CHM-0398	Computer in Chemistry	1+1
CHM-6399	Elective Course	3
CHM-0000	Elective Course	3
CHM-0000	Elective Course	3
CHM-0000	Elective course	3
CHM-0000	Advance Lab-III	3
	<b>Total credits</b>	<b>17</b>
SEMESTER-IV		
Course Code	Course title	Credits
CHM-6421	Elective Course	3
CHM-0000	Elective Course	3
CHM-0000	Elective course	3
CHM-0000	Elective course	3
CHM-0000	Advance Lab	3
	<b>Total credits</b>	<b>15</b>





### List of Elective Courses for M.Sc. 3<sup>rd</sup> Semester:

<b>Group- I (Physical Chemistry)</b>		
<b>Course Code</b>	<b>Course title</b>	<b>Credits</b>
CHM-6301	Chemical Kinetics	3
CHM-6302	Quantum Mechanics	3
CHM-6303	Photochemistry	3
CHM-6304	Molecular spectroscopy	3
CHM-6305	Polymer Chemistry	3
CHM-6306	Electrochemistry	3
CHM-6310	Physical Chemistry Lab- III	3
<b>OR</b>		
<b>Group- II (Inorganic Chemistry)</b>		
<b>Course Code</b>	<b>Course title</b>	<b>Credits</b>
CHM-6321	Coordination Chemistry	3
CHM-6322	Group Theory & Spectroscopy	3
CHM-6323	Inorganic Polymers	3
CHM-6324	Inorganic Chemistry-III	3
CHM-6325	Industrial Chemistry	3
CHM-6330	Inorganic Chemistry Lab. -III	3



<b>OR Group- III (Organic Chemistry)</b>		
<b>Course Code</b>	<b>Course title</b>	<b>Credits</b>
CHM-6341	Reaction Mechanism-I	3
CHM-6342	Spectroscopy-I	3
CHM-6343	Stereochemistry	3
CHM-6344	Name Reactions in Organic Chemistry	3
CHM-6345	Chemistry of Heterocyclic Compounds	3
CHM-6346	Organic synthesis-I	3
CHM-6350	Organic Chemistry Lab. -I	3
<b>OR Group-IV (Analytical Chemistry)</b>		
<b>Course Code</b>	<b>Course title</b>	<b>Credits</b>
CHM-6461	Spectroscopic Methods of Analysis	3
CHM-6462	Thermal Methods of Analysis	3
CHM-6463	Nuclear Techniques	3
CHM-6364	Introduction Chromatography	3
CHM-6370	Analytical Chemistry Lab. -III	3

### **Student's Message**

I'm definitely proud to be a student of M.Sc. at the department of Chemistry (MUST). The institute has taught me everything started from moral values to great education. It has a brilliant team of faculty and a wonderful supportive management. The challenging curriculum and helpful nature of the professors went a long way to making sure I am more than prepared to apply my skills towards my career. I am fortunate to carry out my M.Sc. under a highly talented and well-experienced



**Urooj  
Khanam**



## **M.Phil. Chemistry**

M. Phil degree program is a research-based activity that is purely designed to enhance problem solving ability and research-based aptitude of the scholars. One-year course work is followed by research activity of one-year. Scholars are encouraged to write and submit thesis during the fourth semester. The thesis is evaluated by internal and external examiners and eventually defended by the scholar publicly. After the successful public defense, degree is awarded to the scholar. M. Phil in chemistry provides extensive opportunities of job in private and public sectors such as research organizations, colleges, abroad institutions, industries, and paves a way for doctoral studies in the relevant fields.

## **Program Mission**

M. Phil chemistry program aims to inculcate research aptitude and solution-based philosophy to the evolving complications/problems in the field of chemistry.

## **Program Educational Objectives (PEOs)**

- Development of strong communication skills and co-operative scientific culture among scholars.
- Empowerment of the skilful aptitudes of scholars to resolve the emerging problems in the industries and society.
- Provision of better chances and modern research approaches for applied research pertinent to national and international needs.
- Preparation of scholars for the publication of their research work in national and international journals of high repute.
- Inspiration of moral values in scholars for benefit of the Society.



### **Program Learning Objectives (PLOs)**

- Establishing advanced research laboratories by utilizing available resources.
- Amplification of a sound teaching system on the basis of the vision and experience congregated from the literature, global reviews and symposia etc.
- Upholding a high level of technical and scientific brilliance in teaching, research, thesis writing and publications.
- Solving research problems related to national and global development.
- Inculcation of ethical values in scholars for the betterment of the nation and mankind.

### **Admission Criterion:**

- CGPA 3.00/4.00 in M.Sc. Chemistry with no third division in the academic career.
- GAT General conducted by NTS will be required (if mentioned in the advertisement) with minimum 50% cumulative score.

### **Duration:**

4-6 Semesters



### Scheme of Study (M.Phil. Chemistry)

<b>Duration</b>	4-6 Semester
<b>Course work</b>	24
<b>Seminar (PHY-798)</b>	01
<b>Thesis (PHY-799)</b>	06
<b>Total</b>	31

### List of Courses for M. Phil. Chemistry Program

I. Physical Chemistry					
CODE	COURSE	Cr. Hrs	CODE	COURSE	Cr. Hrs
CHM-701	Physical Chemistry of Polymers	3	CHM-712	Solid State chemistry	3
CHM-702	Advanced Quantum Chemistry	3	CHM-708	Advanced Surface Chemistry	3
CHM-703	Electrode Process	3	CHM-713	Colloid Chemistry	3
CHM-704	Magnetic Resonance Spectroscopy	3	CHM-714	Advanced Nuclear and Radiation Chemistry	3
CHM-705	Advanced Chemical Kinetics	3	CHM-715	Applied Chemical Thermodynamics	3
CHM-706	Advanced Molecular Spectroscopy	3	CHM-716	Electro analytical Methods and Techniques	3
CHM-707	Advanced Photochemistry	3	CHM-717	Special Topics in Physical Chemistry	3
CHM-709	Advanced Solution Chemistry	3	CHM-718	Physical Chemistry of Environment	3
CHM-710	Chemistry of Advanced Materials	3	CHM-719	Special Topics in Physical Chemistry	3
CHM-711	Advanced Statistical Mechanics	3			



## II. Inorganic Chemistry

CODE	COURSE	Cr. Hrs.	CODE	COURSE	Cr. Hrs.
CHM-721	Multinuclear NMR Spectroscopy	3	CHM-726	Physical Methods in Inorganic Chemistry	3
CHM-722	Inorganic Electronic Spectroscopy	3	CHM-727	Inorganic Material Chemistry	3
CHM-723	Kinetics and Mechanisms of Inorganic Reactions	3	CHM-728	Catalysis	3
CHM-724	Organo-transition Metal Chemistry	3	CHM-729	Special Topics in Inorganic Chemistry	3
CHM-725	Bio-Inorganic Chemistry	3			

## III. Organic Chemistry

CODE	COURSE	Cr. Hrs.	CODE	COURSE	Cr. Hrs.
CHM-741	Protecting Groups in Organic Synthesis	3	CHM-757	Advanced Stereoselective Synthesis	3
CHM-742	Organic Synthesis-Retrosynthetic Approach	3	CHM-758	Modern Name Reactions in Organic Synthesis	3
CHM-743	Advanced Stereochemistry	3	CHM-759	Special Topics in Organic Chemistry	3
CHM-746	Advances in Chromatographic Techniques	3	CHM-750	Chemistry of Organometallic Compounds	3
CHM-747	Chemistry of Isoprenoids and Steroids	3	CHM-751	Reactive Intermediates in Organic Chemistry	3
CHM-748	Chemistry of Glycosides	3	CHM-752	Advanced Heterocyclic Chemistry	3
CHM-749	Biosynthesis of Natural Products	3	CHM-753	Advanced Mass Spectrometry	3
CHM-755	Organic Polymer Chemistry	3	CHM-754	Organic Photochemistry	3
CHM-756	Pericyclic Reactions	3			



#### IV-Analytical Chemistry

CODE	COURSE	Cr. Hrs.	CODE	COURSE	Cr. Hrs
CHM-761	Diffraction Methods of Analysis	3	CHM-767	Atmospheric Chemistry	3
CHM-762	Advanced Analytical Instrumental Techniques	3	CHM-768	Chromatographic Methods of Analysis	3
CHM-763	Advanced Thermal Analysis	3	CHM-769	Special Topics in Analytical Chemistry	3
CHM-764	Water and Soil Chemistry	3	CHM-770	X-Ray Methods of Analysis	3
CHM-765	Analysis and Characterization of Polymers	3	CHM-771	Applied Industrial Processes	3
CHM-766	Advanced Atomic Spectroscopy	3	CHM-772	Special Topics in Analytical Chemistry	3

#### V-Biochemistry

CODE	COURSE	Cr. Hrs.	CODE	COURSE	Cr. Hrs
CHM-781	Biochemistry of Disease	3	CHM-787	Biological Oxidations	3
CHM-782	Enzyme structure and function	3	CHM-788	Lab Techniques in Biochemistry (Theory + Lab Work)	3
CHM-783	Fermentation and Biotransformation	3	CHM789	Biostatistics	3
CHM-784	Fundamentals of Molecular Biology	3	CHM-790	Research Methodology and scientific writing	3
CHM-785	Metabolomics	3	CHM-791	Techniques in Molecular Biology	3
CHM-786	Metabolic regulation	3	CHM-792	Special Topics in Bio Chemistry	3



## Ph.D. Chemistry

The Department of Chemistry is renowned nationally and internationally that attracts the best students from the Pakistan. The Ph.D. program provides necessary theoretical background and hands-on training to become independent scientists. One year course work is followed by research activity of two-years. Scholars are encouraged to write and submit thesis during the sixth semester. The thesis is evaluated by one internal and two external examiners and eventually defended by the scholar publicly as per notification circulated by the department. After the successful public defense, degree is awarded to the scholar. Ph.D. in chemistry provides extensive opportunities of job in private and public sectors such as research organizations, colleges, abroad institutions, and industries.

## Program Mission

Ph.D. Chemistry program aims to produce skilled and technical manpower that could boost the socio-economic development of country and possess capability to train the young researchers in academic and industrial fields.

## Program Educational Objectives (PEOs)

- **Foundational Skills:** Students can build their fundamental knowledge skills by completing a set of required and elective courses.
- **Research Skills:** Students can pursue research in their field of interest and acquire professional-level knowledge and expertise.
- **Communication and Professional Preparation:** Student can develop professional competence in presenting scientific outcomes in both written and oral forms.





- **Comparative Levels of Competency:** PhD degrees provide professional expertise to students so that they can add new knowledge by their thesis or dissertation, and original scientific publications.

### **Program Learning Objectives (PLOs)**

1. Designing and obstinately apprising the curricula to deliver an extensive understanding in major fields of Chemistry.
2. Strengthening a comprehensive teaching system on the basis of the visualization and experience massed from the literature, global reviews and seminars/conferences etc.
3. Establishing advanced research laboratories by utilizing available resources.
4. Developing high level scientific skills in the areas of teaching, research, thesis writing and publications.
5. Solving research problems related to national and global development.
6. Inculcation of ethical values in scholars for the betterment of the nation and mankind.

### **Admission Criterion:**

- CGPA 3.00/4.00 in M.Phil. Chemistry with no third division in the academic career.
- GAT subject conducted by NTS will be required with minimum 60% cumulative score.
- Candidate will have to take consent from potential supervisor.



### Scheme of Study (Ph.D. in Chemistry)

<b>Duration</b>	<b>6 semester (minimum)</b>
<b>Courses</b>	<b>18 Credit Hours</b>
<b>Seminar</b>	<b>02 Credit Hours</b>
<b>Thesis</b>	<b>30 Credit Hours</b>
<b>Total</b>	<b>50 Credit Hours</b>

#### I. Inorganic Chemistry

<b>CODE</b>	<b>COURSE</b>	<b>Cr. Hrs.</b>	<b>CODE</b>	<b>COURSE</b>	<b>Cr. Hrs.</b>
CHM-721	Multinuclear NMR Spectroscopy	3	CHM-726	Physical Methods in Inorganic Chemistry	3
CHM-722	Inorganic Electronic Spectroscopy	3	CHM-727	Inorganic Material Chemistry	3
CHM-723	Kinetics and Mechanisms of Inorganic Reactions	3	CHM-728	Catalysis	3
CHM-724	Organo-transition Metal Chemistry	3	CHM-729	Special Topics in Inorganic Chemistry	3
CHM-725	Bio-Inorganic Chemistry	3			



## II. Organic Chemistry

CODE	COURSE	Cr. Hrs.	CODE	COURSE	Cr. Hrs.
CHM-741	Protecting Groups in Organic Synthesis	3	CHM-752	Advanced Heterocyclic Chemistry	3
CHM-742	Organic Synthesis-Retrosynthetic Approach	3	CHM-753	Advanced Mass Spectrometry	3
CHM-743	Advanced Stereochemistry	3	CHM-754	Organic Photochemistry	3
CHM-746	Advances in Chromatographic Techniques	3	CHM-755	Organic Polymer Chemistry	3
CHM-747	Chemistry of Isoprenoids and Steroids	3	CHM-756	Pericyclic Reactions	3
CHM-748	Chemistry of Glycosides	3	CHM-757	Advanced Stereoselective Synthesis	3
CHM-749	Biosynthesis of Natural Products	3	CHM-758	Modern Name Reactions in Organic Synthesis	3
CHM-750	Chemistry of Organometallic Compounds	3	CHM-759	Special Topics in Organic Chemistry	3
CHM-751	Reactive Intermediates in Organic Chemistry	3			



### III. Physical Chemistry

CODE	COURSE	Cr. Hrs	CODE	COURSE	Cr. Hrs
CHM-701	Physical Chemistry of Polymers	3	CHM-712	Solid State chemistry	3
CHM-702	Advanced Quantum Chemistry	3	CHM-708	Advanced Surface Chemistry	3
CHM-703	Electrode Process	3	CHM-713	Colloid Chemistry	3
CHM-704	Magnetic Resonance Spectroscopy	3	CHM-714	Advanced Nuclear and Radiation Chemistry	3
CHM-705	Advanced Chemical Kinetics	3	CHM-715	Applied Chemical Thermodynamics	3
CHM-706	Advanced Molecular Spectroscopy	3	CHM-716	Electro analytical Methods and Techniques	3
CHM-707	Advanced Photochemistry	3	CHM-717	Special Topics in Physical Chemistry	3
CHM-709	Advanced Solution Chemistry	3	CHM-718	Physical Chemistry of Environment	3
CHM-710	Chemistry of Advanced Materials	3	CHM-719	Special Topics in Physical Chemistry	3
CHM-711	Advanced Statistical Mechanics	3			

### IV-Analytical Chemistry

CODE	COURSE	Cr. Hrs.	CODE	COURSE	Cr. Hrs
CHM-761	Diffraction Methods of Analysis	3	CHM-767	Atmospheric Chemistry	3
CHM-762	Advanced Analytical Instrumental Techniques	3	CHM-768	Chromatographic Methods of Analysis	3
CHM-763	Advanced Thermal Analysis	3	CHM-769	Special Topics in Analytical Chemistry	3
CHM-764	Water and Soil Chemistry	3	CHM-770	X-Ray Methods of Analysis	3
CHM-765	Analysis and Characterization of Polymers	3	CHM-771	Applied Industrial Processes	3
CHM-766	Advanced Atomic Spectroscopy	3	CHM-772	Special Topics in Analytical Chemistry	3



### V-Biochemistry

CODE	COURSE	Cr. Hrs.	CODE	COURSE	Cr. Hrs.
CHM-781	Biochemistry of Disease	3	CHM-787	Biological Oxidations	3
CHM-782	Enzyme structure and function	3	CHM-788	Lab Techniques in Biochemistry (Theory + Lab Work)	3
CHM-783	Fermentation and Biotransformation	3	CHM789	Biostatistics	3
CHM-784	Fundamentals of Molecular Biology	3	CHM-790	Research Methodology and scientific writing	3
CHM-785	Metabolomics	3	CHM-791	Techniques in Molecular Biology	3
CHM-786	Metabolic regulation	3	CHM-792	Special Topics in Bio Chemistry	3

### Student's Messages

MUST is journey of self-exploration for me. The environment here has proved to be very fascinating and conducive to learning. The faculty of Chemistry Department is polishing my practical skills to make me competent. Exposure to seminars and conferences has broadened my horizons. Certainly, I have made the right choice of MUST to structure myself for future endeavours.

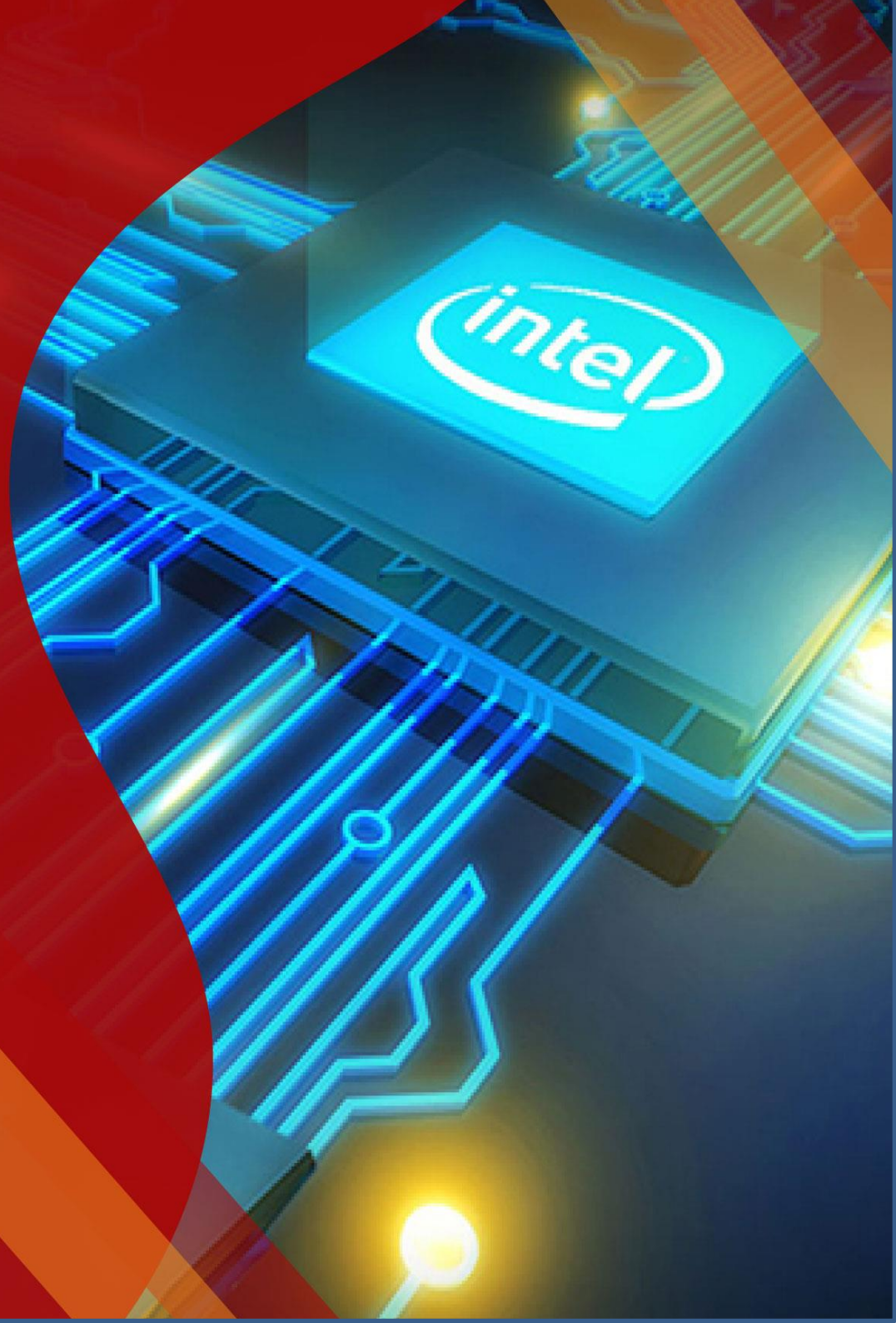


**Sanum Mushtaq**  
**Ph.D Scholar**

# DEPARTMENT OF CS&IT

## Programs Offered

- BS (CS)
- BS (IT)
- MCS
- MS (CS)





**Chairperson:**

Dr. Faisal Riaz

Tel: +92-5827-961028

E-mail: [chairman.csit@must.edu.pk](mailto:chairman.csit@must.edu.pk)

**Message from Chairperson:**

The department is focused on devising innovative, correct solutions to real life problems, while ensuring a level of excellence in the research and academia, providing world class learning environment.

Our success is evident from our high points such as highly professional, foreign qualified and experienced faculty, diverse degree programs, research achievements and successful alumni serving the top organization nation and worldwide. We have 4 full-time PhD faculty members supervising in the diverse research domains such as E-Learning, Data mining, Web Mining, Image Processing, Networks, Internet of Things, Artificial Intelligence, Self-Driving Vehicles etc.

We also boast our state-of-the-art facilities which include a well-stocked university library, fully equipped computer labs, online research databases, as well as printing and scanning facilities.

I am looking forward to seeing you at Department of Computer Science and wish all our students and graduates continued growth and success in their educational and professional endeavors.



**Faculty members of CS&IT Department**





## Faculty Members

### Dr. Faisal Riaz

**Designation:** Associate Professor

**Qualification:** Ph.D.

**Area of interest:** Autonomous Vehicles, Agents Based Modelling, Cognitive Radio, & Affective Computing

**E-mail:** [chairman.csit@must.edu.pk](mailto:chairman.csit@must.edu.pk)

### Syed Yasser Arafat

**Designation:** Assistant Professor

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### Dr. Yasir Mehmood

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### Mr. Kamran Hameed

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### Ms. Samreen Ayaz

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### Dr. Rehana Yasmin

**Designation:** Assistant Professor

**Qualification:** Ph.D (CS)



## Faculty Members

### Ms. Sofia Ghafoor

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### Ms. Rehana Khatoon

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### Mr. Abdul Ghafoor

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### Ms. Sabeen Zaib

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### Ms. Saeeda Kousar

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### Ms. Shafaq Mrtaza

**Designation:** Lecturer

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**Area of interest:** Genetic Algorithms

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## Faculty Members

### Ms. Sameea Arshid

**Designation:** Lecturer

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**Area of interest:**

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### Ms. Farzana Riaz

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**Qualification:** MS(IT)

**Area of interest:** IT Administration

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### Dr. Samina Khalid

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**Qualification:** Ph.D

**Area of interest:** Biomedical Image Processing,

**E-mail:** samina.csit@must.edu.pk

### Ms. Asma Jabeen

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**Qualification:** MS(CS)

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### Mr. Nahman Tariq

**Designation:** Lecturer

**Qualification:** MSc. (FC)

**Area of interest:** Determinist Ethernet and networks, Aerospace time triggered network

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### Ms. Farah Karim

**Designation:** Lecturer

**Qualification:** MS(IT)

**Area of interest:** Semantic Web and Big Data management

**E-mail:** Farah.csit@must.edu.pk



## Faculty Members

### Mr. Muhammad Adnan

**Designation:** Lecturer

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**Area of interest:** Computer Networks, Text retrieval

**E-mail:** madnanmoghal.csit@must.edu.pk

### Mr. Ghias Hamid

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### Ms Rabia Rauf

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**Area of interest:** Computer communication and networks

**Email:** rabia.csit@must.edu.pk

### Mr. Mohsin Ansari

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### Ms. Sobia Sher

**Designation:** Lecturer

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**Area of interest:** Image processing

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### Ms. Mehreen

**Designation:** Lecturer

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**Area of interest:** Artificial intelligence

**E-mail:** mehreen.csit@must.edu.pk



## Faculty Members

### **Ms. Sania Khadim**

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**Qualification:** MS(CS)

**Area of interest:** Artificial intelligence & Machine Learning

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### **Ms. Fakhira Waleed**

**Designation:** Lecturer

**Qualification:** MS(SE)

**Area of interest:** Software Engineering, Image Processing & Machine Learning

**E-mail:** fakhra.csit@must.edu.pk

### **Ms. Somyia Akram**

**Designation:** Jr. Lecturer

**Qualification:** MSc. (CS)



## About Department

The Department of Computer Science & Information Technology (CS&IT) was established in 2001 at Mirpur as a sub-campus of University of AJ&K, Muzaffarabad. This department has been merged into Mirpur University of Science and Technology, Mirpur (A.K) since 2008. The department offers an excellent learning environment, laboratories equipped with latest computers (all connected through Local Area Network) with internet facility, most recent books and qualified faculty. The department developed the curricula of academic programs at various levels to meet the national and international standards as defined by Higher Education Commission. The Department offers BS (Computer Science), BS (Information Technology) four years' degree programs and MCS and MS (CS) two years' degree programs. The BSCS and

BSIT degree programs are accredited by HEC, National Computing Education Accreditation Council (NCEAC).

## Program Mission & Objective

The objective of the studies is acquiring skills and knowledge to carry out research in Computer sc. / Information technology fields and apply the expertise in any new or existing domain of human life. The department focuses on producing computer and IT professionals who are able to explore new dimensions in the computing domain and look for fresh areas in which information technology may be applied.



### Admission Criterion:

#### Entry Requirement: For BS (CS) / BS (IT)

- F.Sc. (Pre-Engineering)
- F.Sc. (Pre-Medical)
- Intermediate in general science (Mathematics / Statistics / Economics)
- Intermediate in Computer Science (ICS)
- Intermediate in Commerce
- Diploma in IT / Electronics or equivalent to Intermediate

### Duration:

8-12 Semesters

### Degree Requirement

A student shall be awarded the degree in respective discipline provided that he/she has completed the fundamental courses, faculty courses, project/fieldwork/thesis/internship/practical training and comprehensive oral examination within the prescribed time period with at least 57.5% cumulative percentage.

### Scholarships Offered:

- |                               |                             |
|-------------------------------|-----------------------------|
| 1. Merit Based Scholarship    | 5. Ehsas Scholarships       |
| 2. HBL Foundation Scholarship | 6. MUST scholarship         |
| 3. Allied Bank Scholarship    | 7. Baitul Mall -Scholarship |
| 4. HEC need-base              | 8. NGOs scholarships        |



## Scheme of Study BS(CS)

<b>Duration</b>	8-12 Semesters
<b>Course</b>	130 Credits
<b>Oral Comprehensive Examination</b>	S/U
<b>Internship</b>	S/U
<b>Project</b>	06 Credits
<b>Total</b>	136 Credits

### SEMESTER ONE

Course Code	Pre-Req	Course Title	Lec. Hrs	Lab Hrs.	Credit Hrs.
BCS-1101	-	Intro. To information and Communication Technology	2	1	3 (2+1)
BCS-1102	-	Programming Fundamental	3	1	4 (3+1)
MAT-1103	-	Calculus and Analytical Geometry	3	0	3
ELE-1104	-	Basic Electronics	3	0	3
ENG-1105	-	English Composition & Comprehension	3	0	3
HUM-1106	-	Pakistan Studies	2	0	2
<b>Total</b>			<b>18</b>		





<b>SEMESTER-TWO</b>					
<b>Code</b>	<b>Pre-Req</b>	<b>Title</b>	<b>Lec. Hrs</b>	<b>Lab. Hrs</b>	<b>Credit Hrs.</b>
BCS-1201	BCS-1102	Object Oriented Programming	3	1	4 (3+1)
BCS-1202		Digital Logic Design	3	0	3
BCS-1203		Discrete Structures	3	0	3
MAT-1204		Linear Algebra	3	0	3
ENG-1205		Technical and Business Writing	3	0	3
HUM-1206		Islamic Studies	2	0	2
<b>Total</b>			<b>18</b>		
<b>SEMESTER THREE</b>					
<b>Course Code</b>	<b>Pre-Req</b>	<b>Course Title</b>	<b>Lec. Hrs</b>	<b>Lab Hrs.</b>	<b>Credit Hrs.</b>
BCS-2301		Data Structure and Algorithms	3	1	4 (3+1)
BCS-2302		Computer Architecture and Organization	3	0	3
MGS-2303		Human Resource Management	3	0	3
MAT-2304		Statistics and Probability	3	0	3
ENG-2305		Communication Skills	3	0	3
HUM-2306		Arabic	3	0	3
<b>Total</b>			<b>19</b>		



<b>SEMESTER-FOUR</b>					
<b>Code</b>	<b>Pre-Req</b>	<b>Title</b>	<b>Lec. Hrs</b>	<b>Lab. Hrs</b>	<b>Credit Hrs.</b>
BCS-2401		Database Systems	3	1	4 (3+1)
BCS-2402		Operating Systems	3	0	3
MSG-2403		Micro Processor and Assembly Language	2	1	3 (2+1)
BCS-2404		Computer Graphics	2	1	3 (2+1)
MAT-2405		Multivariate Calculus	3	0	3
<b>Total</b>			<b>16</b>		
<b>SEMESTER FIVE</b>					
<b>Course Code</b>	<b>Pre-Req</b>	<b>Course Title</b>	<b>Lec. Hrs</b>	<b>Lab Hrs.</b>	<b>Credit Hrs.</b>
BCS-3501		Web Design and Development	2	1	3 (2+1)
BCS-3502		Data Comm. & Computer Networks	3	0	3
BCS-3503		Design and Analysis of Algorithms	3	0	3
BCS-3504		Theory of Automata	3	0	3
MAT-3505		Differential Equations	3	0	3
BCS-3506		Financial Accounting	3	0	3
<b>Total</b>			<b>18</b>		



<b>SEMESTER-SIX</b>					
<b>Code</b>	<b>Pre-Req</b>	<b>Title</b>	<b>Lec. Hrs</b>	<b>Lab. Hrs</b>	<b>Credit Hrs.</b>
BCS-3601		Human Computer Interaction	3	0	3
BCS-3602		Software Engineering	3	0	3
BCS-3603		Mobile Computing	3	0	3
BCS-3604		Artificial Intelligence	3	0	3
BCS-3605		Data Mining	3	0	3
HUM-3606		Psychology	3	0	3
<b>Total</b>			<b>18</b>		
<b>SEMESTER SEVEN</b>					
<b>Course Code</b>	<b>Pre-Req</b>	<b>Course Title</b>	<b>Lec. Hrs</b>	<b>Lab Hrs.</b>	<b>Credit Hrs.</b>
BCS-4701		Fuzzy Logic	3	0	3
BCS-4702		Compiler Construction	3	0	3
BCS-4703		Numerical Computing	3	0	3
BCS-4704		Digital Image Processing	3	0	3
BCS-4705		System Programming	2	1	3
BCS-4706		Final Year Project (1)	-	-	S/U
<b>Total</b>			<b>15</b>		



SEMESTER-EIGHT					
Code	Pre-Req	Title	Lec. Hrs	Lab. Hrs	Credit Hrs.
BCS-4801		Information Security	3	0	3
BCS-4802		Software Project Management	3	0	3
BCS-4803		Professional Practices	2	0	2
BCS-4804		Final Year Project (2)	0	0	6
BCS-4805		Oral Comprehensive Examination	-	-	S/U
BCS-4806		Internship/ Practical Training	-	-	S/U
<b>Total</b>			<b>14</b>		

### Laboratories:

The department has air-conditioned laboratories equipped with latest computers. These labs provide students with the latest software based training to improve the professional computer and IT-skills essential for modern technical environments. Students utilize these labs facilities according to a pre-determined schedule as well as during their free times in order to carry out their practical and research work. In future department plans to establish four more computer labs.



## Scheme of Study BS(IT)

<b>Duration</b>	8-12 Semesters
<b>Course</b>	130 Credits
<b>Oral Comprehensive Examination</b>	S/U
<b>Internship</b>	S/U
<b>Project</b>	06 Credits
<b>Total</b>	136 Credits

### SEMESTER ONE

Course Code	Pre-Req	Course Title	Lec. Hrs.	Lab Hrs.	Credit Hrs.
BIT-1101	-	Fundamentals of ICT	2	1	3(2+1)
BIT-1102	-	Programming Fundamentals	3	1	4(3+1)
MAT-1103	-	Calculus and Analytical Geometry	3	0	3
MGS -1104	-	Financial Accounting	3	0	3
ENG-1105	-	English Comprehension	3	0	3
HUM -1106	-	Pakistan Studies	2	0	2
<b>Total</b>			<b>18</b>		



<b>SEMESTER-TWO</b>					
<b>Code</b>	<b>Pre-Req</b>	<b>Title</b>	<b>Lec. Hrs</b>	<b>Lab. Hrs</b>	<b>Credit Hrs.</b>
BIT-1201	BIT-1102	Object Oriented Programming	3	1	4(3+1)
BIT-1202	-	Intro to Computer Architecture	3	0	3
BIT-1203	-	Discrete Structures	3	0	3
MGS-1204	-	Human Resource Management	3	0	3
ENG-1205	-	Technical and Business Writing	3	0	3
HUM-1206	-	Islamic Studies	2	0	2
<b>Total</b>			<b>18</b>		
<b>SEMESTER THREE</b>					
<b>Course Code</b>	<b>Pre-Req</b>	<b>Course Title</b>	<b>Lec. Hrs</b>	<b>Lab Hrs.</b>	<b>Credit Hrs.</b>
BIT-2301	-	Data Structures and Algorithm	3	1	4(3+1)
BIT-2302	-	Computer Communication and Networks	3	0	3
BIT-2303	-	Operating System Concepts	3	0	3
MAT-2304	-	Statistics and Probability	3	0	3
ENG-2305	-	Communication Skills	3	0	3
HUM-2306	-	Arabic	3	0	3
<b>Total</b>			<b>18</b>		



<b>SEMESTER-FOUR</b>					
<b>Code</b>	<b>Pre-Req</b>	<b>Title</b>	<b>Lec. Hrs</b>	<b>Lab. Hrs</b>	<b>Credit Hrs.</b>
BIT-2401	-	Database Systems	3	1	4(3+1)
BIT-2402	-	Software Engineering-I	3	0	3
BIT-2403	-	Internet Architecture & Protocols	3	0	3
BIT-2404	-	Information System	3	0	3
MGS-2405	-	Organizational Behavior	3	0	3
MAT-2406	-	Linear Algebra	3	0	3
<b>Total</b>			<b>19</b>		
<b>SEMESTER FIVE</b>					
<b>Course Code</b>	<b>Pre-Req</b>	<b>Course Title</b>	<b>Lec. Hrs</b>	<b>Lab Hrs.</b>	<b>Credit Hrs.</b>
BIT-3501	-	Web Design and Development	2	1	3(2+1)
BIT-3502	-	DB Administration & Management	3	0	3
BIT-3503	-	Multimedia Technologies	3	0	3
BIT-3504	-	Telecommunication Systems	3	0	3
BIT-3505	BIT-2402	Software Engineering II	3	0	3
BIT-3506	-	Technology Management	3	0	3
<b>Total</b>			<b>18</b>		



<b>SEMESTER-SIX</b>					
<b>Code</b>	<b>Pre-Req</b>	<b>Title</b>	<b>Lec. Hrs</b>	<b>Lab. Hrs</b>	<b>Credit Hrs.</b>
BIT-3601	-	Human Computer Interaction	3	0	3
BIT-3602	-	Object Oriented Analysis & Design	3	0	3
BIT-3603	BIT-2401	Distributed Database Systems	3	0	3
BIT-3604	-	E-Commerce	3	0	3
BIT-3605	-	Systems and Network Administration	3	0	3
BIT-3606	-	Distributed Computing	3	0	3
<b>Total</b>			<b>18</b>		
<b>SEMESTER SEVEN</b>					
<b>Course Code</b>	<b>Pre-Req</b>	<b>Course Title</b>	<b>Lec. Hrs</b>	<b>Lab Hrs.</b>	<b>Credit Hrs.</b>
BIT-4701	-	Mobile Computing	3	0	3
BIT-4702	-	Network Security	3	0	3
BIT-4703	-	Data Mining	3	0	3
BIT-4704	-	Artificial Intelligence	3	0	3
BIT-4705	-	IT Project Management	3	0	3
BIT-4706	-	Capstone Project Part -1	-	-	S/U
<b>Total</b>			<b>15</b>		





SEMESTER-EIGHT					
Code	Pre-Req	Title	Lec. Hrs	Lab. Hrs	Credit Hrs.
BIT-4801	-	System Integration & Architecture	3	0	3
BIT-4802	-	Professional Practices	2	0	2
BIT-4803	-	Capstone Project Part 2	-	-	6
BIT-4805	-	Oral Comprehensive Examination	-	-	S/U
BIT-4806	-	Internship/ Practical Training	-	-	S/U
<b>Total</b>			<b>11</b>		



## MCS

### Admission Criterion:

- Bachelor of Physics
- Bachelor of Computer Science
- Bachelor of Commerce
- Bachelor of Statistics
- Bachelor of Economics
- Bachelor of Engineering
- BA with Economics / Statistics / Computer / Mathematics

### Scholarships Offered:

- |                               |                             |
|-------------------------------|-----------------------------|
| 1. Merit Based Scholarship    | 5. Ehsas Scholarships       |
| 2. HBL Foundation Scholarship | 6. MUST scholarship         |
| 3. Allied Bank Scholarship    | 7. Baitul Mall -Scholarship |
| 4. HEC need-base              | 8. NGOs scholarships        |

### Duration:

4 – 6 Semesters



EMO an award-winning project



### Scheme of Study (MCS)

<b>Duration</b>	4-6 Semesters				
<b>Courses</b>	66 Credits				
<b>Oral Comprehensive Examination</b>	S/U				
<b>Internship</b>	S/U				
<b>Project</b>	06 Credits				
<b>Total</b>	72 Credits				
<b>SEMESTER-ONE</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs.</b>	<b>Lab Hrs.</b>	<b>Credit Hrs.</b>
	MCS-111	Intro. Computer Programming	2	1	3
	MCS-112	Discrete Structures	3	0	3
	MCS-113	Web Design & Development	2	1	3
	MCS-114	Fundamentals of Algorithms	3	0	3
	MCS-115	Database Systems	2	1	3
	MCS-116	Tech. & Business Report Writing	3	0	3
	<b>Total</b>			<b>18</b>	
<b>SEMESTER-TWO</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs</b>	<b>Lab Hrs.</b>	<b>Credit Hrs.</b>
	MCS-121	Object Oriented Programming	2	1	3
	MCS-122	Theory of Automata	3	0	3
	MCS-123	Data Communication	3	0	3
	MCS-124	Data Structures & Algo. Analysis	2	1	3
	MCS-125	Intro. to Computer Architecture	3	0	3
	MCS-126	Software Engineering-I	3	0	3



			<b>Total</b>	<b>18</b>		
<b>SEMESTER-THREE</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs</b>	<b>Lab Hrs.</b>	<b>Credit Hrs.</b>	
	MCS-231	Computer Graphics & Animations	2	1	3	
	MCS-232	Software Engineering-II	3	0	3	
	MCS-233	Distributed Database Systems	2	1	3	
	MCS-234	Operating Systems	3	0	3	
	MCS-235	Compiler Construction	3	0	3	
	MCS-236	Visual Programming	2	1	3	
	<b>Total</b>			<b>18</b>		
<b>SEMESTER-FOUR</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs</b>	<b>Lab Hrs.</b>	<b>Credit Hrs.</b>	
	MCS-241	System Programming	2	1	3	
	MCS-242	Artificial Intelligence	3	0	3	
	MCS-243	Computer Networks	3	0	3	
	MCS-244	Modern Programming Language	2	1	3	
	MCS-245	Software Project	0	0	6	
	MCS-246	Reading & conference	0	0	S/U	
	MCS-247	Oral Comprehensive Examination	-	-	S/U	
	MCS-248	Internship / Practical Training	-	-	S/U	
<b>Total</b>			<b>18</b>			



## MS (CS)

### Admission Criterion:

- BS (CS/IT) 4 Years Degree Program (Min 136 credit hours), or
- M.Sc. (Computer Sciences) or MCS / MIT 02 years' degree program

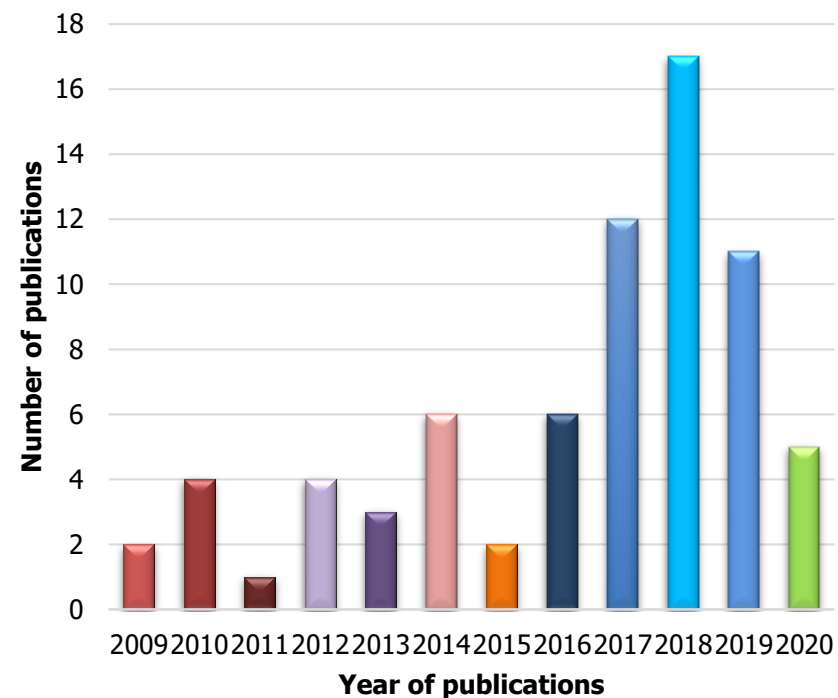
### Scholarships Offered:

- |                               |                             |
|-------------------------------|-----------------------------|
| 1. Merit Based Scholarship    | 5. Ehsas Scholarships       |
| 2. HBL Foundation Scholarship | 6. MUST scholarship         |
| 3. Allied Bank Scholarship    | 7. Baitul Mall -Scholarship |
| 4. HEC need-base              | 8. NGOs scholarships        |

### Duration:

4 – 6 Semesters

## Research Publications





### Scheme of Study for MS (CS)

<b>Duration</b>	4-6 Semester
<b>Course Work</b>	24 Credits
<b>Reading Seminar</b>	01 Credits
<b>Thesis</b>	06 Credits
<b>Total</b>	31 Credits

### Category wise Credit Hours Distribution

Category or Area			Credit Hours		
Core			06		
Elective			15		
Mandatory			03		
Reading Seminar			01		
Thesis			06		
<b>Total Credit Hours</b>			<b>31</b>		
Core Courses			Reading Seminar		
CODE	COURSE	CR. HRS	CODE	COURSE	CR. HRS
CS-5101	Advanced Analysis of Algorithms	3	CS-6102	Reading CS Seminar	1
CS-5102	Advanced Theory of Computation	3	<b>Thesis</b>		
Mandatory Courses			CODE	COURSE	CR. HRS
CODE	COURSE	CR. HRS	CS-6101	MS Thesis	6
CS-5103	Research Methods	3			



## Elective Courses

<b>Computer Networks and Security</b>					
Code	Course Title	Cr. Hrs.		Code	Course Title
CS-5104	Advanced Network Programming	3		CS-5201	Advanced Network Security
CS-5105	Advanced Computer Networks	3		CS-5202	Network Performance Evaluation
CS-5106	Introduction to Cryptography and Security Mechanisms	3		CS-5203	Advanced Wireless and Mobile Computing Networks
CS-5107	Advanced Wireless Networks	3		CS-5204	Autonomous Computing
<b>Artificial Intelligence</b>					
Code	Course Title	Cr. Hrs.		Code	Course Title
CS-5108	Design of Intelligent Systems	3		CS-5208	Agents
CS-5109	Decision Support Systems	3		CS-5209	Robotics
CS-5205	Machine Learning	3		CS-5210	Pattern Recognition
CS-5206	Advanced Neural Networks	3		CS-5211	Computational Intelligence
CS-5207	Natural Language Processing	3			
<b>Software Engineering</b>					
Code	Course Title	Cr. Hrs.		Code	Course Title
CS-5110	Advanced Software Engineering	3		CS-5214	Software Requirements Engineering
CS-5111	Advanced Software Project Management	3		CS-5215	Software Architectures
CS-5212	Object-Oriented Software Engineering	3		CS-5216	Software Patterns
CS-5213	Software Quality Assurance and Testing	3			



<b>Digital Signal and Image Processing / Computer Vision</b>						
<b>Code</b>	<b>Course Title</b>	<b>Cr. Hrs.</b>		<b>Code</b>	<b>Course Title</b>	<b>Cr. Hrs.</b>
CS-5112	Advanced Digital Image Processing	3		CS-5218	Multi-view Geometry	3
CS-5113	Advanced Digital Signal Processing	3		CS-5219	3D Computer Vision	3
CS-5114	Computer Vision	3		CS-5220	Multispectral Image Processing	3
CS-5217	Digital Watermarking and Steganography	3				
<b>Other Elective Courses</b>						
<b>Code</b>	<b>Course Title</b>	<b>Cr. Hrs.</b>		<b>Code</b>	<b>Course Title</b>	<b>Cr. Hrs.</b>
CS-5115	Advanced Computer Architecture	3		CS-5116	Advanced Operating System	3



DEPARTMENT OF

# MATHEMATICS



Programs Offered

BS Mathematics  
M.Sc. Mathematics  
M.Phil. Mathematics  
PhD Mathematics



**Chairperson:**

Dr. Syed Zakir Hussain Bukhari

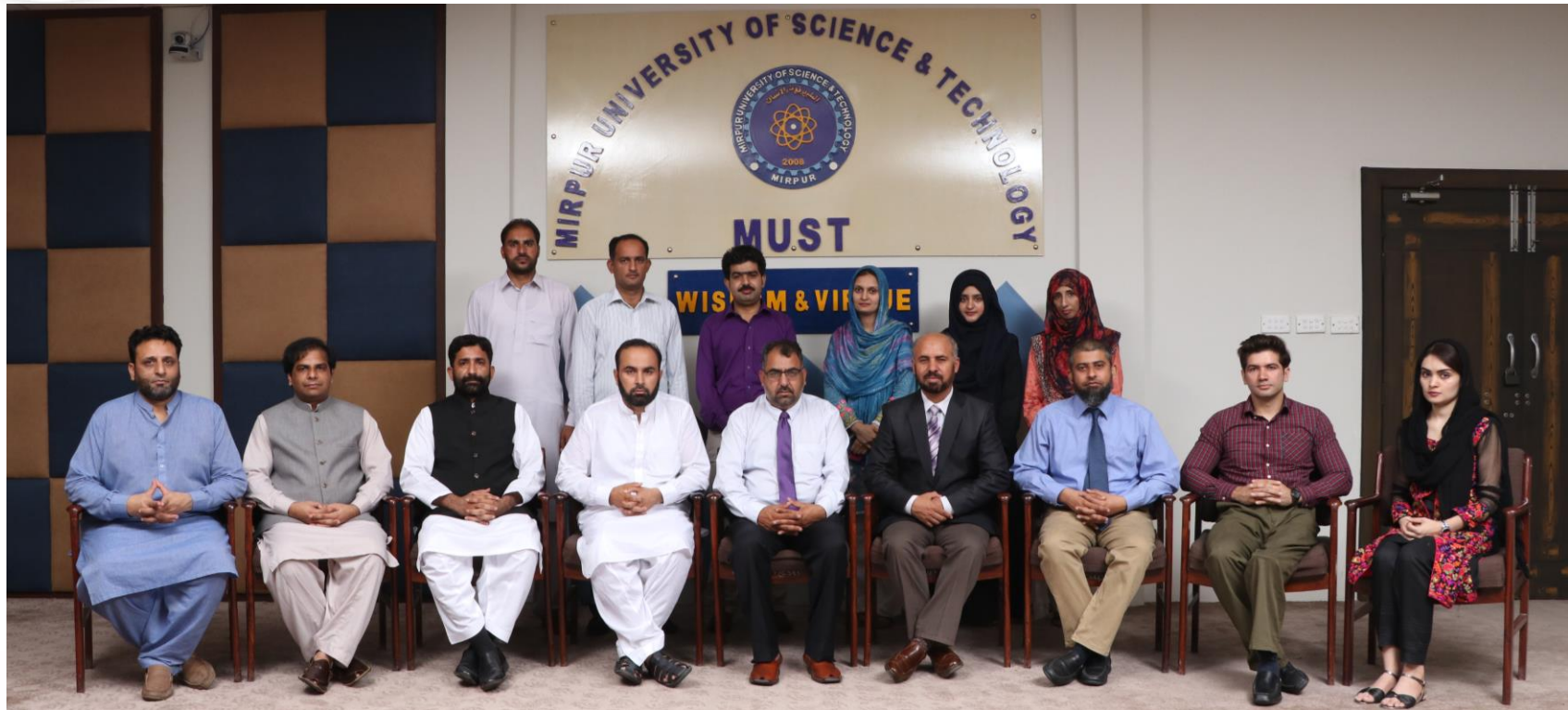
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**Message from Chairperson:**

Mathematics is a transition from the abstract to the concrete. The problem solving in the classroom leads to the laboratory and eventually to the industry. The department provides training to its students that inculcates creative and innovative thinking and makes them capable of understanding complex problems and their solutions. It is an essential part of our vision. Mathematics is rightly considered a brain of human efforts and endeavor from modeling to design and its diversity scattered in the universe. Its applications are found in many disciplines including engineering, computer, space and material sciences, biotechnology, mathematical biology, management etc. Under-graduate program aims to present fundamental knowledge in pure, applied and computational mathematics along with the allied courses of diverse nature to inculcate students with necessary background, tools and techniques to start careers in teaching, research and industry and to reach the Sustainable Development Goals. The graduate program is designed in the future prospective of research in pure, applied and computational mathematics and also finding applications on the broader spectrum of science, engineering and technologies in the diverse and conducive environment provided by MUST. All activities in the department are carried out under the teamwork of the faculty equipped with the expertise of versatile nature and renowned for competence and commitment. Our faculty is also continuously striving towards excellence in research and teaching in various fields and disciplines within MUST. Our commitment to the excellence is a testament to the philosophy of our institution and the goals of our stakeholders.



**Faculty members of Mathematics Department**



## Faculty Members

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## **BS Mathematics**

The BS program in mathematics is stated in Fall-2012 as per direction of MUST and in the future prospective of the Higher Education Commission (HEC), Pakistan. The program has been designed as par scheme of studies approved by the HEC of Pakistan to assure the quality education and align it with the national and international requirements.

The duration of BS program in Mathematics is 4-6 Years (8-12 Semesters). The main focus of the programs offered in the department is not entirely on applied mathematics. A significant importance is also given to pure mathematics which essentially plays a vital role in the general framework of applied mathematics, computer science, engineering and various other disciplines. The subjects of programming and numerical analysis cover some areas of computational mathematics. In BS program, subjects of English, Physics, Statistics, Sociology

and Psychology are introduced with diverse and multiple objectives.

### **Program Mission:**

The BS Program in Mathematics aims at providing students a solid foundation in the major areas of mathematics required in the structural and theoretical advancement of mathematics, and a deeper understanding of the role of mathematics in engineering and sciences. The Department strives to produce graduates who exhibit knowledge, comprehension, and creativity in the practice of mathematics as they pursue their careers in teaching, business, government institutions, or in industry.

### **Program Educational Objectives (PEOs):**

The objectives of the BS program include: to teach students basic concepts of mathematics, to empower them with analytical and computational skills, to develop critical thinking,



and to develop professional approach and work ethics. Moreover, the program is designed so that the students learn advanced mathematical concepts through the course work and semester projects.

### **Program Learning Objectives (PLOs):**

The curriculum of the BS program is very diverse. During the first four semesters, beside some of the fundamental mathematics courses, the students also take many general and compulsory courses like Physics, Mathematical Statistics, English, HRM, etc. These courses are so designed that students get useful knowledge and skills which help them towards completion of their degrees.

### **Admission Criterion:**

- Must have passed F.Sc. (Pre-Engineering)/ ICS or Intermediate with Mathematics/ Mathematics, Statistics & Computer with at least 45% marks.
- Minimum 45 % marks in matric and intermediate
- As per HEC requirement for admission, DAE with 60 %

### **Scholarships Offered:**

- |   |  |
|---|--|
| 1. Pak-USAID Merit & Need Based Scholarships    | 6. President AJK/ Chancellor MUST Scholarships             |
| 2. Pak-German Scholarships                      | 7. HEC & MUST Merit and Need Based Scholarships            |
| 3. MUST-Agha Khan Foundation Scholarships       | 8. HBL Merit and Need Based Scholarships                   |
| 4. MUST- Mansha Group of Companies Scholarships | 9. Laraib Energy Limited Merit and Need Based Scholarships |
| 5. MUST- AKCC&I, AKTA Scholarships              | 10. Ahsaas Program Scholarships                            |

### **Duration:**

8-12 Semesters



## Scheme of Study BS Mathematics (Fall/2020)

1 <sup>st</sup> Year				
Semester-I				
Course Code	Course Title	Lec. Hrs.	Lab. Hrs.	Credit Hrs.
ISL-1101	Islamic Studies	2	0	2
ENG-1102	English-I	3	0	3
COM-1103	Introduction to Computer and Its Applications	2	1	3
PHY-1104	Physics-I	3	0	3
MAT-1105	Calculus-I	4	0	4
MAT-1106	Foundation of Mathematics	3	0	3
Semester-II				
Course Code	Course Title	Lec. Hrs.	Lab. Hrs.	Credit Hrs.
HUM-1201	Arabic	2	0	2
ENG-1202	English-II	3	0	3
HUM-1203	Pakistan Studies	2	0	2
PHY-1204	Physics-II	3	0	3
MAT-1205	Calculus-II	4	0	4
MAT-1206	Linear Algebra-I	3	0	3



<b>2<sup>nd</sup> Year</b>				
<b>Semester-III</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Credit Hrs.</b>
ENG-2302	English-III	3	0	3
MAT-2303	Mathematical Statistics I	3	0	3
MAT-2304	Mechanics-I	3	0	3
MAT-2305	Calculus-III	4	0	4
MAT-2306	Linear Algebra-II	2	0	2
<b>One Optional</b>				
HUM-2301	Introduction to Sociology	3	0	3
HUM-2308	HR Management	3	0	3
<b>Semester-IV</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Credit Hrs.</b>
MAT-2402	Differential Equations I	2	0	2
MAT-2403	Mathematical Statistics II	3	0	3
MAT-2404	Mechanics-II	3	0	3
MAT-2405	Metric Spaces	2	0	2
MAT-2406	Number Theory	2	0	2
<b>One Optional</b>				
PSY-2401	Educational Psychology	3	0	3
HUM-2408	Organizational Behavior	3	0	3
MAT-2409	Business Mathematics	3	0	3
HUM-2410	Entrepreneurship	3	0	3



<b>3<sup>rd</sup> Year</b>				
<b>Semester-V</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Credit Hrs.</b>
MAT-3501	Real Analysis-I	3	0	3
MAT-3502	Differential Equations II	3	0	3
MAT-3503	Differential Geometry-I	3	0	3
MAT-3504	Analytical Mechanics	3	0	3
MAT-3505	Topology	3	0	3
MAT-3506	Abstract Algebra	3	0	3
<b>Semester-VI</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Credit Hrs.</b>
MAT-3601	Real Analysis-II	3	0	3
MAT-3602	Partial Differential Equations	3	0	3
MAT-3603	Numerical Methods-I	3	0	3
MAT-3604	Complex Analysis	3	0	3
MAT-3605	Tensor Analysis	2	0	2
MAT-3606	Scientific Programming	2	1	3



<b>4<sup>th</sup> Year</b>				
<b>Semester-VII</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Credit Hrs.</b>
MAT-4702	Mathematical Physics	3	0	3
MAT-4704	Functional Analysis	3	0	3
MAT-4715	Conference/Seminar/Reading-I		S/U	
MAT-4716	Project/Report	0	0	3+3
<b>Two Optional Courses</b>				
MAT-4701	Measure Theory	3	0	3
MAT-4703	Numerical Methods II	3	0	3
MAT-4705	Fluid Mechanics I	3	0	3
MAT-4706	Operation Research	3	0	3
MAT-4707	Discrete Structures	3	0	3
MAT-4708	-----	3	0	3
MAT-4709	Quantum Mechanics-I	3	0	3
MAT-4710	Ring Theory	3	0	3
MAT-4711	Analytical Dynamics	3	0	3
MAT-4712	Introduction to Difference Equations	3	0	3
MAT-4713	Differential Geometry-II	3	0	3
MAT-4714	Electromagnetic Theory-I	3	0	3



<b>Semester-VIII</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Credit Hrs.</b>
MAT-4803	Integral Equations	3	0	3
MAT-4815	Conference/Seminar/Reading-II		S/U	
MAT-4816	Comprehensive Oral Examination		S/U	
<b>Three Optional Courses</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Credit Hrs.</b>
MAT-4801	Mathematical Systems Theory	3	0	3
MAT-4802	Mathematical Modeling	3	0	3
MAT-4804	Optimization Theory	3	0	3
MAT-4805	Fluid Mechanics II	3	0	3
MAT-4806	Algebraic Topology	3	0	3
MAT-4807	Special Functions	3	0	3
MAT-4808	Financial Mathematics	3	0	3
MAT-4809	Quantum Mechanics-II	3	0	3
MAT-4810	Introduction to Combinatorics	3	0	3
MAT-4811	Dynamical Systems	3	0	3
MAT-4812	Theory of Elasticity	3	0	3
MAT-4813	Special Theory of Relativity	3	0	3
MAT-4814	Electromagnetic Theory-II	3	0	3



### **M.Sc. Mathematics**

The Department of Mathematics was established in 2009 with the commencement of M.Sc program. The program has been designed as par scheme of studies approved by the HEC of Pakistan to assure the quality education and aligned it with the national and international requirements.

The duration of MSc program in Mathematics is 2-4 Years (4-8 Semesters). The main focus of the programs offered in the department is not entirely on applied mathematics. A significant importance is also given to pure mathematics which essentially plays a vital role in the general framework of applied mathematics, computer science, engineering and various other disciplines. The subjects of programming and numerical analysis cover some areas of computational mathematics.

### **Program Mission**

The MSc Program in Mathematics aims at providing students with a solid foundation in the major areas of mathematics, an appreciation for the structures and theories of advanced mathematics, and a deeper understanding of the role of mathematics in engineering and sciences. The Department strives to produce graduates who exhibit knowledge, comprehension, and creativity in the practice of mathematics as they pursue their careers in teaching, business, government, or in industry.

### **Program Educational Objectives (PEOs)**

The objectives of the MSc program also include: to teach students basic concepts of mathematics, to empower them with analytical and computational skills, to develop critical thinking, and to develop professional approach and work





ethics. Moreover, the program is designed in such a way that the students can learn advanced mathematical concepts through the course work and the semester projects.

### Program Learning Objectives (PLOs)

The curriculum of the two year MSc program is so designed that students learn analytical and computational skills for solving mathematical problems. The students are so trained through the class room activities and assessments that can confidently do industrial, managerial, and teaching assignments.

#### Admission Criterion:

- B.Sc. with Mathematics A & B Courses or BS.Ed. with Physics and Mathematics

- No third division in Matric, Intermediate, or B.Sc

#### Scholarships Offered:

- |   |  |
|---|--|
| 1. Pak-USAID Merit & Need Based Scholarships    | 6. President AJK/ Chancellor MUST Scholarships             |
| 2. Pak-German Scholarships                      | 7. HBL Merit and Need Based Scholarships                   |
| 3. MUST-Agha Khan Foundation Scholarships       | 8. MUST Merit and Need Based Scholarships                  |
| 4. MUST- Mansha Group of Companies Scholarships | 9. Laraib Energy Limited Merit and Need Based Scholarships |
| 5. MUST- AKCC&I, AKTA Scholarships              | 10. Ahsaas Program Scholarships                            |

#### Duration:

4 – 6 Semesters



### Scheme of Study (M.Sc. Mathematics)

	Course Code	Course Title	Lec. Hrs.	Lab. Hrs.	Crdeit Hrs
<b>1<sup>st</sup> Semester</b>	MAT-5101	Real Analysis-I	3	0	3
	MAT-5102	Ordinary Differential Equations	3	0	3
	MAT-5103	Differential Geometry-I	3	0	3
	MAT-5104	Analytical Mechanics	3	0	3
	MAT-5105	Topology	3	0	3
	MAT-5106	Abstract Algebra	3	0	3
	Course Code	Course Title	Lec. Hrs.	Lab. Hrs.	Crdeit Hrs
<b>2<sup>nd</sup> Semester</b>	MAT-5201	Real Analysis-II	3	1	3
	MAT-5202	Partial Differential Equations	3	1	3
	MAT-5203	Numerical Methods I	3	1	3
	MAT-5204	Complex Analysis	3	1	3
	MAT-5205	Tensor Analysis	2	1	2
	MAT-5206	Scientific Programming	2	1	3



<b>3rd Semester</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Crdeit Hrs</b>	
	MAT-6302	Mathematical Physics	3	1	3	
	MAT-6304	Functional Analysis	3	1	3	
	MAT-6316	Project	0	0	3+3	
	MAT-6315	Conference/Seminar/Reading-I	S/U	-	-	
	<b>Two Optional Courses</b>					
	MAT-6301	Measure Theory	3	0	3	
	MAT-6303	Numerical Methods II	3	0	3	
	MAT-6305	Fluid Mechanics-I	3	0	3	
	MAT-6306	Operation Research	3	0	3	
	MAT-6307	Number Theory	3	0	3	
	MAT-6308	Mathematical Statistics	3	0	3	
	MAT-6309	Quantum Mechanics-I	3	0	3	
	MAT-6310	Ring Theory	3	0	3	
	MAT-6311	Analytical Dynamics	3	0	3	
MAT-6312	Introduction to Difference Equations	3	0	3		
MAT-6313	Differential Geometry-II	3	0	3		
MAT-6314	Electromagnetic Theory-I	3	0	3		



4 <sup>th</sup> Semester	Course Code	Course Title	Lec. Hrs.	Lab. Hrs.	Crdeit Hrs	
	MAT-6403	Integral Equations	3	0	3	
	MAT-6416	Comprehensive Oral Examination	0	S/U	0	
	MAT-6415	Conference/Seminar/Reading-II	0	S/U	0	
	<b>Three Optional Courses</b>					
	MAT-6401	Mathematical Systems Theory	3	0	3	
	MAT-6402	Mathematical Modeling	3	0	3	
	MAT-6404	Optimization Theory	3	0	3	
	MAT-6405	Fluid Mechanics-II	3	0	3	
	MAT-6406	Algebraic Topology	3	0	3	
	MAT-6407	Special Functions	3	0	3	
	MAT-6408	Financial Mathematics	3	0	3	
	MAT-6409	Quantum Mechanics-II	3	0	3	
	MAT-6410	Introduction to Combinatorics	3	0	3	
	MAT-6411	Dynamical Systems	3	0	3	
MAT-6412	Theory of Elasticity	3	0	3		
MAT-6413	Special Theory of Relativity	3	0	3		
MAT-6414	Electromagnetic Theory-II	3	0	3		

**Note:-** Elective course mentioned above without any pre-requisite can be taught in 3<sup>rd</sup> or 4<sup>th</sup> semester. These courses can only be offered on the availability of the relevant teacher



## **M.Phil. Mathematics**

The MPhil programs in mathematics was launched in 2010. It aimed at imparting quality education to the youth of Mirpur and the surrounding districts, at an affordable cost. The program gave an opportunity to the talented youth to satiate their desire to learn and excel in mathematics. The core objectives of the program include: to teach students basic concepts of mathematics, to empower them with analytical and computational skills, to develop critical thinking, and to develop professional approach and work ethics. Moreover, the program is designed in such a way that the students can learn advanced mathematical concepts through the course work and projects and finally a thesis of 6 credit hours. Alhamdulillah, a large number of students took advantage of this opportunity at the door step with minimum cost. These students are now playing very active role at various positions in the state and elsewhere in Pakistan. Some of these scholars are also pursuing for their higher education in the renowned institutions of the world.

## **Program Mission**

The MPhil Program in the Department of Mathematics, MUST, Mirpur, AJ&K is focused to provide a research conducive environment for learning to nurture intellectual leadership equipped with critical thinking, problem solving skills and innovation required for higher education.

## **Program Educational Objectives (PEOs)**

The objectives of the MPhil program also include: to teach students basic concepts of mathematics, to empower them with analytical and computational skills, to develop critical thinking, and to develop professional approach and work ethics. Moreover, the program is designed in such a way that the students can learn advanced mathematical concepts through the course work and the semester projects.

## **Program Learning Objectives (PLOs)**

The curriculum for MPhil program is so designed that the students undertaking research in this department will have a chance to learn not only the fundamental courses of



mathematics but also advanced courses related to their area of specialization and interest. Fundamental and emerging specializations in the domain of mathematics, like systems and control, computational and theoretical fluid dynamics, advanced complex analysis, mathematical modelling of biological systems, and applied and theoretical statistics etc., will be offered as area of research for graduate students at this department. The mathematics department is also providing support to other engineering and sciences departments of MUST, so upon successful completion of the courses taught by mathematics faculty, students will be able to:

**PLO-01:** Apply knowledge of mathematics, science, and engineering fundamentals to the solution of complex problems involved in different areas of engineering and sciences.

**PLO-02:** Identify, formulate, search literature, and analyze mathematical models governing laws of physics and other engineering sciences.

**PLO-03:** Design solution strategy for mathematical models arising in aerospace engineering, electrical engineering, mechanical engineering, and other science and engineering disciplines.

**PLO-04:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling the physical phenomena with an understanding of the limitations.

**PLO-05:** Communicate effectively on mathematical activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive instructions effectively.

**PLO-06:** Apply ethical principles and exhibit commitment to professional ethics, responsibilities and norms of the profession.

#### **Admission Criterion:**



- Candidates must have passed M.Sc./ BS (4 years) with at least 65% marks in the relevant discipline with no 3rd division in the academic record.
- GAT by NTS with minimum 50% cumulative score.

**Duration:**

4-6 Semesters



## Scheme of Study (M.Phil. Mathematics)

<b>Course Work</b>	24
<b>Seminar</b>	01
<b>Thesis</b>	06
<b>Research Methodology and Scientific Writing</b>	S/U
<p>*This course will be a non-credit course. This will be offered in 3rd semester when students start their thesis. This will be an S/U based course but students have to pass it for completing the degree requirements. Its assessments will be based on home assignments.</p>	

<p>In the following, a list of core courses is given. A student will have to complete 12 credit hours (4 courses) of his/her course work from these courses.</p>		
No.	Course Title	Credit Hrs
MAT-7004	Mathematical Analysis	03
MAT-7005	Advanced Mathematical Physics	03
MAT-7006	Riemanian Geometry	03
MAT-7007	Advanced Complex Analysis	03
MAT-7008	Mathematical Techniques	03
MAT-7009	Advanced Topology	03
MAT-7010	Advanced Abstract Algebra	03





### Elective Courses (12 credit hrs.)

In the following, a list of elective courses is given. A student will have to complete 12 credit hours of his/her course work from these courses.

No.	Course Title	Credit Hrs
MAT-7011	Advanced Numerical Analysis	03
MAT-7012	Geometric Functions Theory	03
MAT-7013	Advanced Optimization Theory	03
MAT-7014	Advanced Mathematical Modeling	03
MAT-7015	Nonlinear Systems and Control	03
MAT-7016	Optimal Control	03
MAT-7017	Sampling Techniques	03
MAT-7018	Multivariate Analysis	03
MAT-7019	Finite Mixture Distributions	03
MAT-7020	Mathematical Techniques for Boundary Value Problems	03
MAT-7021	Non-Newtonian Fluid Mechanics	03
MAT-7022	Fundamentals of the Theory of Fluids	03
MAT-7023	Group Methods for Differential Equations	03
MAT-7024	Computer Applications in Mathematics	03
MAT-7025	Fundamentals of Finite Element Methods	03
MAT-7026	Advanced Integral Equations	03
MAT-7027	Approximation Theory	03
MAT-7028	Complex Analysis of Several Variables	03
MAT-7029	Advanced Analytical Dynamics	03



MAT-7030	Introduction to Robotics	03
MAT-7031	Stochastic Processes	03
MAT-7032	Estimation Theory	03
MAT-7033	Time Series	03
MAT-7034	Mathematical Ecology	03
MAT-7035	Biomathematics	03
MAT-7036	Advances in Discrete Mathematics and Applications	03
MAT-7037	Graph Theory	03
MAT-7038	Lie Algebra	03
MAT-7039	Advanced PDEs	03



## **PhD Mathematics**

The PhD Program in Mathematics is started in Spring-2015. This program is aimed at imparting quality education at an affordable cost. The program provided opportunity to the talented youth to excel in mathematics. The core objectives of the program to empower students with analytical and computational skills which develop the critical thinking and professional approach and work ethics. Moreover, the program is designed in such a way that the scholars can learn advanced mathematics and work in a research conducive environment of MUST and share wisdom through collaboration in research projects

### **Program Educational Objectives (PEOs)**

Our students will be equipped not only with advanced mathematical tools but also acquire skill set needed to apply mathematics towards real life problems in different fields of

engineering, sciences, economics, business and finance, etc. Moreover, our graduates will be able to:

1. Collaborate with Engineers and scientists from industry and academia in their research/projects to promote the industry-academia linkages;
2. Promote the culture of interdisciplinary novel research and produce fundamental & applied quality research in Pakistan;
3. Contribute through active research in the emerging areas of science and engineering, for instance, systems and control, computational and theoretical fluid dynamics, advanced complex analysis, mathematical modelling of biological systems, and statistics etc.

The curriculum for PhD program is so designed that the students undertaking research in this department will have a chance to learn not only the fundamental courses of mathematics but also advanced courses related to their area of



specialization and interest. Fundamental and emerging specializations in the domain of mathematics, like systems and control, computational and theoretical fluid dynamics, advanced complex analysis, mathematical modelling of biological systems, and applied and theoretical statistics etc., will be offered as area of research for graduate students at this department. The mathematics department is also providing support to other engineering and sciences departments of MUST, so upon successful completion of the courses taught by mathematics faculty, students will be able to:

**PLO-01:** Apply knowledge of mathematics, science, and engineering fundamentals to the solution of complex problems involved in different areas of engineering and sciences.

**PLO-02:** Identify, formulate, search literature, and analyze mathematical models governing laws of physics and other engineering sciences.

**PLO-03:** Design solution strategy for mathematical models arising in aerospace engineering, electrical engineering, mechanical engineering, and other science and engineering disciplines.

**PLO-04:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling the physical phenomena with an understanding of the limitations.

**PLO-05:** Communicate effectively on mathematical activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive instructions effectively.

**PLO-06:** Apply ethical principles and exhibit commitment to professional ethics, responsibilities and norms of the profession.



### Admission Criterion:

- Must have passed M.Phil with at least 65% marks or MS with 3 CGPA in Mathematics
- GAT (Subject) NTS/ GRE (Subject) as per the HEC requirements.
- No D grade in the Academic Career
- Consent from the Supervisor within the Department

### Duration:

6-16 Semesters

### Scheme of Study Detail

#### Semester-I

Following advanced courses of Mathematics will be offered in this semester.

1. Core I	2. Elective I	3. Elective II
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#### Semester-II

Following foundation courses of the specialized areas will be offered in this semester.

1. Core II	2. Elective III	3. Elective IV
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### Semester-III and IV:

Students will complete his/her course work (if it is not finished in the first two semesters) and clear the Comprehensive Examination (Written and Oral) by the end of the 4th semester.

### Semester-V and VI:

Students will submit synopsis in the 5th semester to the relevant body and after approval of the synopsis, research work will start formally. The two Seminars will be evaluated after the submission of synopsis and before the public defense of the thesis. After completing the research work and the degree award requirements, the process for the public defense will be started. The students who can't finish their thesis by the end of the 6th semester, will seek approval from the relevant authority (AS&RB) for an extension to complete their degree.



## Scheme of Study (PhD in Mathematics)

<b>Duration</b>	<b>3 - 8 Years</b>
<b>Courses</b>	<b>18 Credit Hours</b>
<b>Seminar</b>	<b>02 Credit Hours</b>
<b>Thesis</b>	<b>50 Credit Hours</b>
<b>Total</b>	<b>70 Credit Hours</b>

<b>List of Courses for PhD Program</b>		
<b>A. Compulsory Requirements</b>		
<b>No.</b>	<b>Course Title</b>	<b>Credit Hrs</b>
MAT-7998	Seminar I	01
MAT-7999	Seminar II	01
MAT-8000	Thesis	50
Comprehensive Examination (Written & Oral) P/F		



### B. Elective Courses\* (18 credit hrs)

In the following, a list of elective courses is given. A student will hav to complete 18 credit hours of his/her course work from these courses on the recommendation of his/her supervisor.

MAT-8001	Advanced Functional Analysis	03
MAT-8002	Advanced Partial Differential Equations	03
MAT-8003	Variational Inequalities	03
MAT-8004	Convex Analysis	03
MAT-8005	Parameter Estimation and Sensitivity Analysis	03
MAT-8006	Semigroups in Geometric Functions Theory	03
MAT-8007	Differential Subordination Theory and Applications	03
MAT-8008	Conformal Mappings	03
MAT-8009	Perturbation Methods	03
MAT-8010	Electro-dynamics	03
MAT-8011	Magneto-hydro-dynamics	03
MAT-8012	Fundamentals of Turbulence	03
MAT-8013	LIE Group Analysis of Differential Equations	03
MAT-8014	Selected Topics in Applied Mathematics	03
MAT-8015	Selected Topics in Pure Mathematics	03
MAT-8016	Numerical Solutions of PDEs	03
MAT-8017	Design Methods for Control Systems	03
MAT-8018	Optimal State Estimation	03
MAT-8019	Linear Matrix Inequalities	03
MAT-8020	Advanced Probability Theory	03



MAT-8021	Advanced Sampling Techniques	03
MAT-8022	Advanced Finite Mixture Distributions	03
MAT-8023	Advanced Mathematical Statistics	03
MAT-8024	Stochastic Differential Equations	03
MAT-8025	Fixed Point Theory and Applications	03
MAT-8026	Integral Inequalities	03
MAT-8027	Banach Algebras	03
MAT-8028	Harmonic Functions Theory	03
MAT-8029	Cosmology	03
MAT-8030	Bifurcation and Chaos	03
*Apart from this list, a student may also register in a course with M.Phil. class with the consent of his/her supervisor provided the student did not take this course already while doing M.Phil.		





## ALUMNI MESSAGES

I was a part of this Department in pursuing for BS degree. The Department had provided me a rich training, practical approach and knowledge to the latest techniques and tools. Innovative and learning environment with diversity guided me to meet the emerging challenges of my job as professional



**Kamran Khan**  
**BS Mathematics**

The Department of Mathematics is inspiring not only through its teaching but by the opportunities it provided. It is designed and administered so efficiently I not only felt the warmth but a support for my stay as well



**Hamza Tariq**  
**MSc Mathematics**

I got my MSc from MUST with distinction. I am proud and privileged as a scholar of this Department as the faculty is highly qualified and competent and faculty members are cooperative and highly skilled in their respective fields.



**Muhammad Seyab**  
**MPhil Mathematics**

# DEPARTMENT OF PHYSICS



## OUR VISION

"To provide broad, innovative and quality education in Physics to contribute to greater good of community".

## Programs Offered

BS Physics  
M.Sc. Physics  
M.Phil. Physics  
Ph.D. Physics



**Chairperson:**

Dr. Muhammad Irfan

Tel.: +92-05827-961111

E-mail: [chairperson.physics@must.edu.pk](mailto:chairperson.physics@must.edu.pk)

**Message from Chairperson:**

Physics is devoted to the study and understanding of nature. It is considered the fundamental science, which deals with the constituents, properties and evolution of the entire universe, from the smallest subatomic particles to the largest galaxies, and is concerned with the mathematical formulation of the fundamental laws of nature.

The department of Physics was established in September, 2009 with the objective to prepare students for academic and industrial careers at the forefront of science and technology in the country. The department offers BS (4 years, started from Session 2018), M.Sc., M.Phil. and Ph.D. degree programs. The contents of the taught courses represent a balance unify of both theoretical and practical knowledge with a view of feeding a skilled work to meet the modern standards of the country in the field of physics and technology. The department has five basic teaching Laboratories, one each for Electronics, Solid State Physics, Nuclear Physics, Computational Physics and Modern Physics and three research Laboratories; Laser & Spectroscopy, Materials Science and Theoretical Plasma Physics for M.Phil. and Ph.D. scholars. The research is an integral part of the programs, for promoting a research culture in the country in general and the University in particular. In this connection, the department has also entered into collaboration and knowledge integration with several other universities and research institutes to carry out joint research projects.



**Faculty members of Physics Department**



## Faculty Members

### Prof. Dr. Shaukat Mahmood

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### Dr. Muhammad Ayub

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### Dr. Azhar Hussain

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### Dr. Tariq Aziz

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## Faculty Members

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### Arslan Ali

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### Maria Khalil

Designation: Lecturer  
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E-mail: [maria.phy@must.edu.pk](mailto:maria.phy@must.edu.pk)



## BS Physics

The BS Physics Program was started in 2018. It is a four (04) year degree program comprising of eight (08) semesters of 128 Credit Hours. Scheme of study includes 22 Credit Hours of Compulsory Courses, 21 Credit Hours of General Courses, 27 Credit Hours of Foundation Courses, 49 Credit Hours of Major Courses, 09 Credit Hours Elective Courses. In last two semester a student can choose between 06 Credit Hours Thesis or optional courses.

### Program Mission

To produce well-rounded critical thinkers and lifelong graduates who are prepared to successfully perform in higher study or professional work in Physics, education, or relevant fields.

### Program Educational Objectives (PEOs)

1. This program enables the students to scientifically understand and analyze the behavior of Physics in nature.
2. This program oriented the students with many interdisciplinary subjects; Electronics, Mathematics, Energy, Physics of life, Nanotechnology, Computer and Information Technology, Classical Mechanics, Quantum Mechanics, Waves, Thermodynamics and other basics of Physics.

#### Admission Criterion:

- The eligibility criterion for admission in BS Physics is Intermediate/A-Level or Equivalent with Physics and Mathematics with minimum 45% marks

#### Duration:



8-12 Semesters

### Scheme of Study (BS Physics)

<b>Duration:</b>	8-12 Semesters	
<b>Courses:</b>	128 Credit Hours	
<b>Compulsory</b>	22	
<b>General</b>	21	
<b>Foundation</b>	27	
<b>Major</b>	49	
<b>Elective</b>	09	
<b>Final Year Project/Special Paper:</b>	03+03=06	
<b>Total:</b>	134 Credit Hours	
<b>SEMESTER-I</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>
PHY-1101	Mechanics (F-1)	04
*	(GOF-1)	03
PHY-1102	Lab-I (F-2)	01
COM-1105	Introduction to Computing (C-1)	03
ENG-1107	English-I (C-2)	03
MAT-1115	Calculus-I (C-3)	03
	<b>Total</b>	<b>17</b>







<b>SEMESTER-II</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>
PHY-1203	Electricity and Magnetism (F-3)	04
PHY-1204	Heat and Thermodynamics (F-4)	03
PHY-1205	Lab-II (F-5)	01
COM-1205	Programming Fundamentals (GRF-1)	03
ENG-1207	English-II (C-4)	03
MAT-1215	Calculus II (C-5)	03
	<b>Total</b>	<b>17</b>
<b>SEMESTER-III</b>		
<b>Course Code</b>	<b>Course title</b>	<b>Credits</b>
PHY-2306	Waves and Oscillations (F-6)	03
PHY-2307	Modern Physics (F-7)	03
ENG-2307	English-III (C-6)	03
PHY-2308	Lab-III (F-8)	01
*	(GOF-2)	03
MAT-2315	Linear Algebra (Math-IIIG)	03
PS-2317	Pakistan Studies (C-7)	02
	<b>Total</b>	<b>18</b>



<b>SEMESTER-IV</b>		
<b>Course code</b>	<b>Course title</b>	<b>Credits</b>
PHY-2409	Optics (F-9)	03
PHY-2410	Lab-IV (F-10)	01
*	(GOF-3)	03
MAT-2415	Differential Equations (Math-IVG)	03
STA-2420	Probability and Statistics (GRF-2)	03
ISL-2412	Islamic Studies (C-8)	02
PHY-2411	Computational Physics (F-11)	03
	<b>Total</b>	<b>18</b>
<b>SEMESTER-V</b>		
<b>Course code</b>	<b>Course title</b>	<b>Credits</b>
PHY-3512	Mathematical Methods of Physics-I (M)	03
PHY-3513	Classical Mechanics (M)	04
PHY-3514	Electromagnetic Theory-I (M)	03
PHY-3515	Electronics-I (M)	03
PHY-3516	Lab-V (M)	02
	<b>Total</b>	<b>15</b>



<b>SEMESTER VI</b>		
<b>Course Code</b>	<b>Course title</b>	<b>Credits</b>
PHY-3617	Mathematical Methods of Physics-II (M)	03
PHY-3618	Quantum Mechanics – I (M)	03
PHY-3619	Electromagnetic Theory-II (M)	03
PHY-3620	Electronics-II (M)	03
PHY-3621	Solid State Physics-I (M)	03
PHY-3622	Lab-VI (M)	02
	<b>Total</b>	<b>17</b>
<b>SEMESTER-VII</b>		
<b>Course code</b>	<b>Course title</b>	<b>Credits</b>
PHY-4723	Nuclear Physics (M)	03
PHY-4724	Quantum Mechanics – II (M)	03
PHY-4725	Atomic Physics (M)	03
PHY-4726	Solid State Physics-II (M)	03
PHY-4727	Lab-VII (M)	02
PHY-4899/47XX	Research Project/Special Paper (M)	03
	<b>Total</b>	<b>17</b>



<b>SEMESTER–VIII</b>		
<b>Course code</b>	<b>Course title</b>	<b>Credits</b>
PHY-4828	Thermal and Statistical Physics (M)	03
PHY-48XX	Elective course-I	03
PHY-48XX	Elective course-II	03
PHY-48XX	Elective course –III	03
PHY-4899/48XX	Research project/Special Paper(M)	03
	<b>Total</b>	<b>15</b>

\* Code and subject shall be chosen from the list of GOF courses, subject to availability of faculty and suitability to the program need.

\*\* Special paper shall be selected from the list of elective courses subject to availability of teacher and suitability to the program need

**GRF** = General subjects from Faculty of Natural & Applied Sciences

**GOF** = General subjects other than Faculty of Natural & Applied Sciences



### List of (GOF) Courses:

Sr.#	Codes	Subjects	Sr.#	Codes	Subjects
1	ARA-0001	Arabic	7	KS-0013	Kashmir Studies
2	ECO-0006	Economics	8	MC-0014	Mass Communications
3	ETRE-0008	Entrepreneurship	9	OB-0016	Organizational Behavior
4	HRM-0009	Human Resource Management	10	PSY-0019	Psychology
5	IR-0010	International Relations	11	SOC-0021	Sociology
6	ITM-0011	Introduction to management			



### List of Elective Courses:

First and second 'X' represent the year and semester respectively. Selection of a course from the list shall be made on the basis of availability of relevant faculty and suitability to the program need.

Course code	Course Title
PHY-XX29	Astro Physics
PHY-XX30	Atomic and Molecular Spectroscopy
PHY-XX31	Computer Simulations in Physics
PHY-XX32	Electronic Materials and Devices
PHY-XX33	Environmental Physics
PHY-XX34	Experimental Techniques in Particle and Nuclear Physics
PHY-XX35	Fluid Dynamics
PHY-XX36	Introduction to Materials Science
PHY-XX37	Introduction to Nanotechnology
PHY-XX38	Introduction to Photonics
PHY-XX39	Introduction to Quantum Computing
PHY-XX40	Laser Engineering

Course code	Course Title
PHY-XX41	Laser Physics
PHY-XX42	Methods of Experimental Physics
PHY-XX43	Particle Physics
PHY-XX44	Plasma Physics
PHY-XX45	Quantum Electronics
PHY-XX46	Quantum Field Theory
PHY-XX47	Quantum Information Theory
PHY-XX48	Quantum Optics
PHY-XX49	Research Methodology and Skill Enhancement
PHY-XX50	Semiconductor Physics
PHY-XX51	Surface Science



## **M.Sc. Physics**

The M.Sc. Physics Program was started in 2009. It is two-year degree program covered in four (04) semesters. The scheme of study includes total 66 Credit Hours, comprising of 54 Credit Hours Theory, 12 Credit Hours Lab work and 06 Credit Hours Thesis/special paper.

### **Program Mission**

To provide master level education in Physics to prepare individuals that may contribute to the progress of the nation through the pursuit of higher education

### **Program Educational Objectives (PEOs)**

Major objectives of the M.Sc. Physics programs are as follows:

**Objective No. 1:** To provide a broad, innovative, and quality education to graduate students in viable areas of Physics.

**Objective No. 2:** To impart quality teaching which ensures that students are able to analyse, model and design realistic problems in the vast areas of fundamental Physics as well as in Applied Physics.

**Objective No. 3:** To cultivate a strong approach of creative thinking and problem-solving skills in graduate students for future education.

**Objective No. 4:** To enhance and improve the written and oral communication skills of the students.

### **Program Learning Objectives (PLOs)**

1. Students are proficient in Basic Physics, Fundamental Mathematics, Applied Physics and relevant Computer skills.
2. Students are able to design and conduct experiments and to critically analyse the scientific data.
3. Students are prepared for future career and professional development.
4. Students perform and present their responsibilities at any level with honesty and dedication following high ethical and moral values.





## Laboratories

The Department has five basic teaching Laboratories for BS Physics and M.Sc. Physics Programs;

- Electronics
- Solid State Physics
- Nuclear Physics
- Computational Physics
- Modern Physics

### Admission Criterion:

The eligibility criterion for admission in M.Sc. Physics (02 Years Program) is B.Sc. or BS.Ed. with Physics, Mathematics applied and pure (Math-A&B) or Physics, Mathematics general course at least in 2nd division.

### Scholarships Offered:

- |   |  |
|---|--|
| 1. Pak-USAID Merit & Need Based Scholarships    | 6. President AJK/ Chancellor MUST Scholarships             |
| 2. Pak-German Scholarships                      | 7. HBL Merit and Need Based Scholarships                   |
| 3. MUST-Agha Khan Foundation Scholarships       | 8. MUST Merit and Need Based Scholarships                  |
| 4. MUST- Mansha Group of Companies Scholarships | 9. Laraib Energy Limited Merit and Need Based Scholarships |
| 5. MUST- AKCC&I, AKTA Scholarships              | 10. Ahsaas Program Scholarships                            |

### Duration:

4 – 6 Semesters



## Scheme of studies for (M. Sc. Physics)

### II-Compulsory Courses for M.Sc. Physics:

<b>Semester-I</b>				
<b>Course code</b>	<b>Course Title</b>	<b>Lecture Hrs.</b>	<b>Lab Hrs.</b>	<b>Cr. Hrs</b>
PHY-5101	Mathematical Methods of Physics- I	03	-	03
PHY-5102	Classical Mechanics	03	-	03
PHY-5103	Basic Electronics	03	-	03
PHY-5104	Electromagnetic Theory-1	03	-	03
PHY-5105	Laboratory Course-I (Electronics)	01 Cr. Hr =03 Hrs		03
<b>Total Credits</b>				<b>15</b>
<b>Semester-II</b>				
<b>Course code</b>	<b>Course Title</b>	<b>Lecture Hrs.</b>	<b>Lab Hrs.</b>	<b>Cr. Hrs</b>
PHY-5201	Mathematical Methods of Physics -II	03	-	03
PHY-5202	Nuclear Physics	03	-	03
PHY-5203	Solid State Physics	03	-	03
PHY-5204	Atomic Physics	03	-	03
PHY-5205	Laboratory Course-II (Solid State Physics)	1 Cr. Hr=03 Hrs		03
<b>Total Credits</b>				<b>15</b>



### III- Compulsory, Optional and Elective Courses for M.Sc Physics:

Semester-III				
Course code	Course Title	Lecture Hrs.	Lab Hrs.	Cr. Hrs
PHY-6301	Electromagnetic Theory-II	03	-	03
PHY-6302	Quantum Mechanics – I	03	-	03
PHY-6303	Computational Physics	03	-	03
PHY-6304	Laboratory Course (Nuclear Physics)	1 Cr Hr =3 Hrs	03	03
PHY-6305 / PHY-6400	Laser / Thesis	-	-	3/3
PHY-63----	Elective Course – I	03	-	03
<b>Total Credits</b>				<b>18</b>
Semester-IV				
Course code	Course Title	Lecture Hrs.	Lab Hrs.	Cr. Hrs
PHY-6401	Statistical Mechanics and Thermal Physics	03	-	03
PHY-6402	Quantum Mechanics-II	03	-	03
PHY-6403	Laboratory Course	1 Cr Hr=3 Hrs	03	03
PHY-6404 / PHY-6400	Plasma Physics / Thesis	03/--	-	03
PHY-64--	Optional Course	03	-	03
PHY-64--	Elective Advance Course II	03	-	03
<b>Total Credits</b>				<b>18</b>



**IV- Thesis:  
Semester-III & IV**

Course Codes	Course Title	Lecture Hrs.	Lab. Hrs.	Cr. Hrs.
PHY- 6(3-4)0	M.Sc. Thesis	-	-	03+03=06

**V- Elective Advance Course I:  
Semester-III**

Course Codes	Course Title	Lecture Hrs.	Lab. Hrs.	Cr. Hrs.
PHY-6306	Advance Course – I (Electronics)	03	-	03
PHY-6307	Advance Course - I (Solid State Physics)	03	-	03
PHY-6308	Advance Course – I (Nuclear Physics)	03	-	03

**VI- Elective Advance Course II:  
Semester-IV**

Course Codes	Course Title	Lecture Hrs.	Lab. Hrs.	Cr. Hrs.
PHY-6405	Advance Course-II (Electronics)	03	-	03
PHY-6406	Advance Course-II (Solid State Physics)	03	-	03
PHY-6407	Advance Course-II (Nuclear Physics)	03	-	03



### VII- Optional Courses:

Course Codes	Course Title	Lecture Hrs.	Lab. Hrs.	Cr. Hrs.
PHY-6408	Research Methodology	-	-	03
PHY-6409	Particle Physics	03	-	03
PHY-6410	Thin Film	03	-	03
PHY-6411	Medical Physics	03	-	03
PHY-6412	Non-Destructive Testing	03	-	03
PHY-6413	Polymer Physics	03	-	03
PHY-6414	Organic Semiconductors	03	-	03
PHY-6415	Bio- Physics	03	-	03
PHY-6416	Quantum Optics	03	-	03
PHY-6417	Computer Simulation	03	-	03
PHY-6418	Optoelectronics	03	-	03
PHY-6419	Cosmology and Relativity	03	-	03
PHY-6420	Environmental Physics	03	-	03
PHY-6421	Quantum Electronics	03	-	03
PHY-6422	Fluid dynamics	03	-	03
PHY-6423	Introduction to Nano Technology	03	-	03
PHY-6424	Renewable Energy	03	-	03

**Note:** The selection of optional courses shall be related to the availability of qualified staff and laboratory facilities.



## **M.Phil. Physics**

The M.Phil. Physics Program is a two to three years study program. This program is consisted of 06 to 08 semesters. This program is consisted of 31 Credit Hours, 24 Credit Hours Theory, 01 Credit Hours Seminar and a 06 Credit Hours Thesis is compulsory.

### **Program Mission**

To provide education and research facilities at an advanced level to pursue professional scientific career in viable areas of Physics.

### **Program Educational Objectives (PEOs)**

1. To provide a solid foundation in physics and research skills needed for further higher studies.
2. To understand and solve emerging scientific problems in physics and to share outcomes with the international community.

3. To prepare the scholars for the research and development (R&D) activities.
4. To provide necessary qualifications for employment in relevant fields.
5. To develop better written and oral communication skills.

### **Program Learning Objectives (PLOs)**

1. A proficiency in physics and research methodologies.
2. Ability to identify and solve scientific problems.
3. Capacity to design and conduct experiments and to analyse the scientific data.
4. Potential to serve efficiently in industrial, academic and research organizations.
5. Presentation and publishing of research work at national and international level.



### Admission Criterion:

5. The eligibility criterion for admission is BS/M.Sc. in Physics, at least 65% marks in Semester system and 50% in annual system. No third division in the academic career. HEC attested degrees are required.
6. The GAT-General ([www.nts.org.pk/gat/gat.asp](http://www.nts.org.pk/gat/gat.asp)) conducted by the National Testing Service (NTS) with a minimum 50% cumulative score will be required. at the time of admission to M.Phil. The GAT-General test is valid for a period of two years.

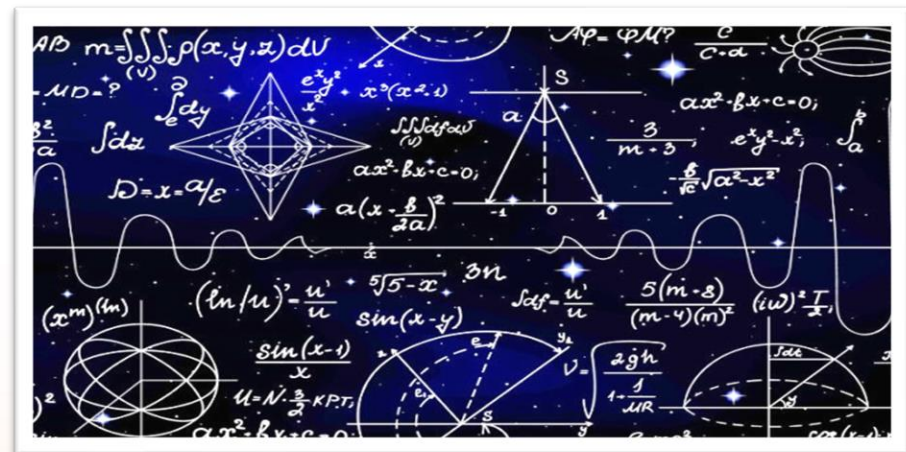
### Duration:

4-6 Semesters

### Laboratories for M.Phil. Physics and Ph.D. Physics Programs

The department has also three research Laboratories for M.Phil. and Ph.D. Physics programs;

- ❖ Laser & Spectroscopy
- ❖ Material Science Lab
- ❖ Theoretical Plasma





### Scheme of Study (M.Phil. Physics)

<b>Duration</b>	4-6 Semester	
<b>Course work</b>	24	
<b>Seminar (PHY-798)</b>	01	
<b>Thesis (PHY-799)</b>	06	
<b>Total</b>	31	
<b>Semester-I</b>		
<b>Course Title</b>	<b>Cr. Hrs.</b>	<b>Remarks</b>
Mathematical Methods of Physics	03	Compulsory
Graduate Level Physics Course	03	Elective I
Graduate Level Physics Course	03	Elective II
Graduate Level Physics Course	03	Elective III
<b>Total</b>	<b>12</b>	
<b>Semester II</b>		
<b>Course Title</b>	<b>Cr. Hrs.</b>	<b>Remarks</b>
Electrodynamics	03	Compulsory
Graduate Level Physics Course	03	Elective IV
Graduate Level Physics Course	03	Elective V
Graduate Level Physics Course	03	Elective VI
<b>Total</b>	<b>12</b>	





<b>Semester III - IV</b>		
<b>Course Title</b>	<b>Cr. Hrs.</b>	<b>Remarks</b>
Seminar (PHY-798)	01	Compulsory
Thesis (PHY-799)	06	Compulsory
<b>Total</b>	<b>07</b>	

<b>List of Compulsory Courses for M.Phil. Program:</b>		
<b>Code</b>	<b>Course Title</b>	<b>Cr. Hrs.</b>
PHY-701	Mathematical Methods of Physics	03



## **Ph.D. Physics**

The PhD Physics program is sufficiently flexible in its electives to provide an excellent preparation for careers in many different areas of pure and applied physics. Additionally, the scholars are mainly engaged in research along with initial broad training in fundamental core topics of physics as the foundation of modern technologies.

### **Program Mission**

To produce motivated and committed Ph.D degree holders who are able to do significant and independent research as an obligation to the nation.

### **Program Educational Objectives (PEOs)**

1. To produce individuals who can identify workable scientific problems related to physics from the literature survey.
2. To impart experimental/theoretical skills necessary for research in Physics.

3. To promote research culture and to inspire the students to contribute in local and international research activities.
4. The program intends to produce professional who firmly believe in research ethics.

### **Program Learning Objectives (PLOs)**

7. A proficiency in Physics and basic sciences.
8. Identification and formulation of solutions concerning scientific problems.
9. Design and conduct experiments and to critically analyse the scientific data.
10. Ability to connect the knowledge of physics to the real world problems.



## Scheme of Study (Ph.D. in Physics)

<b>Duration</b>	<b>6-16 semester</b>	
<b>Courses</b>	<b>18 Credit Hours</b>	
<b>Comprehensive Examination (Written &amp; Oral) (PHY-896)</b>	<b>Non-Credit</b>	
<b>Seminar I (PHY-897)</b>	<b>01 Credit Hours</b>	
<b>Seminar II (PHY-898)</b>	<b>01 Credit Hours</b>	
<b>Thesis</b>	<b>50 Credit Hours</b>	
<b>Total</b>	<b>70 Credit Hours</b>	
<b>Semester-I</b>		
<b>Course Title</b>	<b>Cr. Hrs.</b>	<b>Remarks</b>
Graduate Level Physics Course	03	Elective I
Graduate Level Physics Course	03	Elective II
Graduate Level Physics Course	03	Elective III
<b>Total</b>	<b>09</b>	
<b>Semester II</b>		
<b>Course Title</b>	<b>Cr. Hrs.</b>	<b>Remarks</b>
Graduate Level Physics Course	03	Elective IV
Graduate Level Physics Course	03	Elective V
Graduate Level Physics Course	03	Elective VI
<b>Total</b>	<b>09</b>	



<b>Semester-III-XVI</b>		
<b>Course Title</b>	<b>Cr. Hrs.</b>	<b>Remarks</b>
Comprehensive Examination (Written & Oral) (PHY-896)	Non Cr.	Compulsory
Seminar I (PHY-897)	<b>01</b>	Compulsory
Seminar II (PHY-898)	<b>01</b>	Compulsory
Thesis (PHY-899)	<b>50</b>	Compulsory
Total	<b>52</b>	

### **List of Elective Courses for M.Phil./Ph.D. Programs:**

<b>Semester-I</b>						
<b>Codes</b>	<b>Course Title</b>	<b>Cr. Hrs</b>		<b>Codes</b>	<b>Course Title</b>	<b>Cr. Hrs</b>
PHY-Y03	Advanced Nuclear Physics	03		PHY-Y11	Optoelectronics	03
PHY-Y04	Advanced Quantum Mechanics	03		PHY-Y12	Organic Semiconductor Devices	03
PHY-Y05	Applied Quantum Mechanics	03		PHY-Y13	Physics of Semiconductors	03
PHY-Y06	Group Theory	03		PHY-Y14	Physics of Thin Films – I	03
PHY-Y07	Material Science – I	03		PHY-Y15	Plasma Hydrodynamics and Controlled Fusion	03
PHY-Y08	Methods and Techniques of Experimental Physics-I	03		PHY-Y16	Quantum Field Theory-I	03
PHY-Y09	Nano Science and Technology	03		PHY-Y17	Quantum Information Theory-I	03
PHY-Y10	Non-Linear Physics – I	03		PHY-Y18	Quantum Optics-I	03



### Semester-II

Codes	Course Title	Cr. Hrs	Codes	Course Title	Cr. Hrs
PHY-Y19	Advanced Plasma Physics	03	PHY-Y32	Materials Science – II	03
PHY-Y20	Applications of Nano-Technology	03	PHY-Y33	Methods & Techniques of Experimental Physics-II	03
PHY-Y21	Atomic and Molecular Spectroscopy	03	PHY-Y34	Non-Linear Physics – II	03
PHY-Y22	Classical Theory of Fields	03	PHY-Y35	Particle Physics	03
PHY-Y23	Defects in Materials and Measuring Techniques	03	PHY-Y36	Physics of Semiconductors Devices	03
PHY-Y24	Dielectric Properties of Solids	03	PHY-Y37	Physics of Thin Films–II	03
PHY-Y25	Experimental Plasma Physics	03	PHY-Y38	Plasma Kinetic Theory and its Applications	03
PHY-Y26	Experimental Techniques in Particle & Nuclear Physics	03	PHY-Y39	Quantum Field Theory-II	03
PHY-Y28	Fundamentals of Polarized Light	03	PHY-Y40	Quantum Information Theory-II	03
PHY-Y29	Laser Induced Breakdown Spectroscopy (LIBS)	03	PHY-Y41	Quantum Optics-II	03
PHY-Y30	Magnetism and Magnetic Materials	03	PHY-Y42	Statistical Physics	03
PHY-Y31	Material Studies by Electron Emission	03	PHY-Y43	Surface Science and Scanning Electron Microscopy	03



## STUDENTS' MESSAGES

Choosing a good institution is a difficult job. I found Physics department one of the best departments in Natural Sciences. To become a Physicist was my dream and choice of MUST prove to be the best. The faculty of Physics department is polishing my practical skills to make me competent professional. "There is no alternate of MUST"



**M.Asif**  
**PhD Physics**  
**10<sup>th</sup> Semester**

Studying at MUST has given me new ideas and broad vision. The attitude of faculty members of Physics Department toward students is remarkable. Environment of MUST is conducive and character building. As a part of MUST I want to say only one thing: "Work hard and be honest"



**Methab Yaqoob**  
**M.Phil Physics**  
**1<sup>st</sup> Semester**

I am happy to be a part of MUST. I am satisfied with the teaching and experimental works. The faculty and supporting staff of the department is very cooperative. I am enjoying my time in the MUST and I must advice my juniors to join the MUST for their bright future. "MUST is the best Choice for Student"



**Zoya Khalid**  
**M.Sc Physics**  
**4<sup>th</sup> Semester**

Physics is my passion and my ambitions have always been very clear. MUST help me in enjoying the diversity of the subjects, projects, varied and includes all factors which keep it interesting. MUST is the most appropriate institute for females to have a great time with their studies.



**Saba Kiran**  
**BS Physics**  
**3<sup>rd</sup> Semester**

# DEPARTMENT OF ZOOLOGY

## Programs Offered

BS Zoology

M.Sc. Zoology

M.Phil. Zoology

Ph.D. Zoology





**Chairperson:**

Dr. Ansar Ahmed Abbasi

Tel. : +92-5827-961112

E-mail: [chairperson.zoology@must.edu.pk](mailto:chairperson.zoology@must.edu.pk)

**Message from Chairperson:**

It gives me immense pleasure to welcome you all as a student of Department of Zoology. Our academic diversity clearly reflects the origin of our Department, which was founded in 2010. As Chair of the Department of Zoology, I am proud to share the values-based guiding principles that underpin how our Department operates. These shared values, identified by the collective input of all of the stakeholders in the Department, are at the core of our Strategic Plan. I expect, you to be regular in studies, hardworking, and also to abide by the rules and regulations which is the basic requirement to seek knowledge and to maintain conducive environment in the department. The Department of Zoology has well equipped laboratories where practical exposure to strengthen the theoretical knowledge is provided. In addition to central library students have free access to departmental library which has wide collection of reference books, journals and relevant reading materials. The faculty of the department is highly qualified, competent and co-operative. May God bless you the wisdom and intelligence to accomplish your objectives in life.





## Faculty Members

### Dr. Ansar Ahmed Abbasi

Designation Assistant Professor  
Qualification PhD  
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### Dr. Khalid Hameed

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### Dr. Anser Ali

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### Dr. Rizwan Ullah

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### Mr. Usman Ali

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### Ms. Huma Ayub

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## Faculty Members

### **Mrs. Sundus Sajid**

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Qualification      M. Phil  
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Email:      [sundus.zoology@must.edu.pk](mailto:sundus.zoology@must.edu.pk)

### **Mrs. Sundas Farooq**

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### **Mrs. Samina Noor**

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### **Mr. Rameez Nisar**

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### **Mrs. Attoba Mushtaq**

Designation      Jr. Lecturer  
Qualification      M. Phil  
Area of interest:      Microbiology  
Email:      [attoba.zoology@must.edu.pk](mailto:attoba.zoology@must.edu.pk)



## **BS Zoology**

Zoology as a subject is multidisciplinary in nature, involves the study of living beings and their genetic, morphological, physiological and environmental attributes. This subject has significant role in human resources development, food security, environmental conservation, sustainable development and ultimately in alleviation of poverty. This degree program aims to impart fundamental concepts and knowledge of major disciplines of zoology. Students will be enabled to understand and imply principles and inter-relationships of biological system with particular reference to the animal diversity. Program consists of four years, at the successful completion of BS Zoology, graduates have a wide option to hunt a job in government and private sectors and abroad.

## **Program Mission**

This degree program aims to develop conceptual understandings in the field of zoology, enabling student to apply their knowledge to the betterment of the society.

## **Program Educational Objectives (PEOs)**

1. Perceive the significance and extent of the field of zoology in the modern era.
2. Achievement of mastery in the basic, advanced and current trends in zoology, prompt a curious, critical and scientific approach toward zoological problems.
3. Develop proficiency in the use of laboratory and equipment, practical work, experimentation, collection and interpretation of materials and data.
4. Equip student with strong oral/written communication skills, interdisciplinary and collaborative approaches.



5. Develop morality and professional behaviour in the students.

### Program Learning Objectives (PLOs)

1. Development of a vibrant and sound teaching system based on the experience and vision gathered from world reviews, literature, innovations, proceedings, symposia etc.
2. Designing and persistently updating the curricula to provide a wide comprehension in major fields of zoology including core, elective and special courses.
3. Establishment of well-equipped teaching and research laboratories depending on the available resources, maintaining a high level of scientific excellence in teaching, research, theses and publications.
4. To focus on emerging research problems relevant to national and global.

5. To inculcate ethical values in students, community-based and outreach activities to a possible extent for the betterment of the nation.

#### Admission Criterion:

F.Sc. (Pre-Medical) or equivalent with minimum 45% marks

#### Scholarships Offered:

- |   |  |
|---|--|
| 1. Pak-USAID Merit & Need Based Scholarships    | 6. President AJK/ Chancellor MUST Scholarships             |
| 2. Pak-German Scholarships                      | 7. HEC & MUST Merit and Need Based Scholarships            |
| 3. MUST-Agha Khan Foundation Scholarships       | 8. HBL Merit and Need Based Scholarships                   |
| 4. MUST- Mansha Group of Companies Scholarships | 9. Laraib Energy Limited Merit and Need Based Scholarships |
| 5. MUST- AKCC&I, AKTA Scholarships              | 10. Ahsaas Program Scholarships                            |

#### Duration:

8-12 Semesters



### Scheme of Study (BS Zoology)

<b>YEAR-I</b>		
<b>SEMESTER-I (Cr. 18)</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>
ENG-1107	English-I	3+0
PS-1117	Pakistan Studies	2+0
MAT-1115	Mathematics-I	3+0
BOT-1103	Botany-I	2+1
CHE-1104	Chemistry-I	2+1
ZOL-1101	Principles of Animal Life-I	3+1
	<b>Total Credits</b>	<b>18</b>
<b>SEMESTER-II (Cr. 18)</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>
ENG-1207	English-II	3+0
ISL-1212	Islamic Studies / Ethics	2+0
STA-1220	Statistics/bioeconomics	2+1
BOT-1203	Botany-II	2+1
CHE-1204	Chemistry-II	2+1
ZOL-1201	Principles of Animal Life-II	3+1
	<b>Total Credits</b>	<b>18</b>



<b>YEAR-II</b>		
<b>SEMESTER-III (Cr. 19)</b>		
<b>Course Code</b>	<b>Course title</b>	<b>Credits</b>
ENG-2107	English-III (Technical writing and presentation skills)	2+0
ARA-2101	Arabic	2+0
BOT-2103	Botany-III	2+1
CHE-2104	Chemistry-III	2+1
ZOL-2101	Animal Diversity-I	3+1
ZOL-2102	Animal Form and Function-I	3+1
	<b>Total Credits</b>	<b>18</b>
<b>SEMESTER-IV (Cr. 16)</b>		
<b>Course code</b>	<b>Course title</b>	<b>Credits</b>
COM-2205	Introduction to Computer	2+1
BOT-2203	Botany-IV	2+1
ZOL-2201	Animal Diversity-II	3+1
ZOL-2202	Animal Form and Function-II	3+1
CHE-2204	Chemistry-IV	2+1
	<b>Total Credits</b>	<b>17</b>



<b>YEAR-III</b>		
<b>SEMESTER-V (Cr. 17)</b>		
<b>Course code</b>	<b>Course title</b>	<b>Credits</b>
ZOL-3101	Molecular Cell Biology	3+1
ZOL-3102	Animal Physiology	3+1
ZOL-3103	Genetics	3+1
ZOL-3104	Environmental Biology	2+1
ZOL-3105	Evolution	2+0
	<b>Total Credits</b>	<b>17</b>
<b>SEMESTER VI (Cr. 17)</b>		
<b>Course Code</b>	<b>Course title</b>	<b>Credits</b>
ZOL-3201	General Biochemistry	3+1
ZOL-3202	Developmental Biology	3+1
ZOL-3203	Principles of Animal Taxonomy	2+1
ZOL-3204	Biostatistics	2+1
ZOL-3205	Paleontology	2+1
	<b>Total Credits</b>	<b>17</b>



<b>YEAR-IV SEMESTER-VII (Cr. 15)</b>		
<b>Course code</b>	<b>Course title</b>	<b>Credits</b>
ZOL-41**	Elective-I	2+1
ZOL-41**	Elective-II	2+1
ZOL-41**	Elective-III	2+1
ZOL-41**	Elective-IV	2+1
ZOL-41**	Elective-V	2+1
ZOL-4224	Research Project (research work will be started in semester VII and the credit will be given in semester VIII)	
	<b>Total Credits</b>	<b>15</b>
<b>SEMESTER-VIII (Cr. 21)</b>		
<b>Course code</b>	<b>Course title</b>	<b>Credits</b>
ZOL-42**	Elective-VI	2+1
ZOL-42**	Elective-VII	2+1
ZOL-42**	Elective-VIII	2+1
ZOL-42**	Elective-IX	2+1
ZOL-42**	Elective-X	2+1
ZOL-4223	Comprehensive Oral Examination	
ZOL-4224	Research Project	0+6*





### LIST OF ELECTIVE COURSES FOR BS-4 YEARS PROGRAM IN ZOOLOGY VII SEMESTER

Course code	Course Title	Lec. Hrs	Lab. Hrs	Credit Hrs.
ZOL-4101	Zoogeography	2	1	3
ZOL-4102	Reproductive Physiology	2	1	3
ZOL-4103	Clinical Endocrinology	2	1	3
ZOL-4104	Neurophysiology	2	1	3
ZOL-4105	Immunology	2	1	3
ZOL-4106	Hematology	2	1	3
ZOL-4107	Biotechnology-I	2	1	3
ZOL-4108	Biotechnology-II	2	1	3
ZOL-4109	General Toxicology	2	1	3
ZOL-4110	Human Genetics	2	1	3
ZOL-4111	General Microbiology	2	1	3
ZOL-4112	General Parasitology	2	1	3
ZOL-4113	Invertebrata	2	1	3
ZOL-4114	General Entomology	2	1	3
ZOL-4115	Principles of Fish Biology	2	1	3
ZOL-4116	Fisheries & Aquaculture	2	1	3
ZOL-4117	Limnology-A	2	1	3
ZOL-4118	Principles of Herpetology	2	1	3
ZOL-4119	Biodiversity	2	1	3
ZOL-4120	Histology	2	1	3
ZOL-4121	Biological Techniques	1	2	3
ZOL-4122	Research Methodology	2	1	3
ZOL-4224	Research Project	0	0	0



### LIST OF ELECTIVE COURSES FOR BS-4 YEARS PROGRAM IN ZOOLOGY VIII SEMESTER

Course Code	Course Title	Lec. Hrs	Lab. Hrs.	Credit Hrs.
ZOL-4201	Physiological Systems and Adaptations	2	1	3
ZOL-4202	Molecular Physiology	2	1	3
ZOL-4203	Endocrinology	2	1	3
ZOL-4204	Animal Behaviour	2	1	3
ZOL-4205	Economic Zoology	2	1	3
ZOL-4206	Bioremediation & Environmental Biotechnology	2	1	3
ZOL-4207	Biochemistry – II	2	1	3
ZOL-4208	Molecular Biology	2	1	3
ZOL-4209	Medical Microbiology	2	1	3
ZOL-4210	Applied Microbiology	2	1	3
ZOL-4211	Medical Parasitology	2	1	3
ZOL-4212	Helminthology	2	1	3
ZOL-4213	Vector Biology	2	1	3
ZOL-4214	Animal Pests and Disease Producing Organisms	2	1	3
ZOL-4215	Fish Physiology	2	1	3
ZOL-4216	Ichthyology (Fish Morphology)	2	1	3
ZOL-4217	Limnology-B	2	1	3
ZOL-4218	Vertebrata	2	1	3
ZOL-4219	Ornithology	2	1	3
ZOL-4220	Mammalogy	2	1	3
ZOL-4221	Wildlife	2	1	3
ZOL-4222	Environmental Issues	2	1	3
ZOL-4223	Comprehensive Oral Examination		S/U Basis	
ZOL-4224	Research Project	0	0	6



### **MSc Zoology**

This degree program aims to impart the major and modern concepts of zoology as applicable in recent advancements and practical uses under condition of region. This will enable the young students to understand principles of organization and interrelation in the biological systems, which are important for better research, planning and management of animal resources, environment, health and medicine, and population in the country. Program consists of four years, at the successful completion of M. Sc. Zoology, the graduates will be able to get jobs in wide range of professions in various government and nongovernmental organizations including teaching and research, administration and management, aquaculture, fisheries, lab diagnostics, wildlife, livestock and other areas. Graduates can also get similar jobs in abroad.

### **Program Mission**

This degree program aims to develop conceptual understandings in the field of zoology, enabling student to apply their knowledge to the betterment of the society.

### **Program Educational Objectives (PEOs)**

1. Perceive the significance and extent of the field of zoology in modern era.
2. Achievement of mastery in the basic, advanced and current trends in zoology, prompt a curious, critical and scientific approach toward zoological problems
3. Develop proficiency in the use of laboratory and equipment, practical work, experimentation, collection and interpretation of materials and data.
4. Equip student with strong oral/written communication skills, interdisciplinary and collaborative approaches.
5. Develop morality and professional behaviour in the students.



## Program Learning Objectives (PLOs)

1. Development of a vibrant and sound teaching system based on the experience and vision gathered from world reviews, literature, innovations, proceedings, symposia etc.
2. Designing and persistently updating the curricula to provide a wide comprehension in major fields of zoology including core, elective and special courses.
3. Establishment of well-equipped teaching and research laboratories depending on the available resources, maintaining a high level of scientific excellence in teaching, research, theses and publications.
4. To focus on emerging research problems relevant to national and global.
5. To inculcate ethical values in students, community-based and outreach activities to a possible extent for the betterment of the nation.

<b>Admission Criterion:</b>	
<ul style="list-style-type: none"> <li>• B.Sc. in Botany, Zoology, Chemistry or B.S.Ed. in Botany, Zoology, Chemistry with minimum 45%marks (2nd Division).</li> <li>• No 3rd division in academic career.</li> <li>• Age Limit 26 Years.</li> </ul>	
<b>Scholarships Offered:</b>	
1. Pak-USAID Merit & Need Based Scholarships	6. President AJK/ Chancellor MUST Scholarships
2. Pak-German Scholarships	7. HBL Merit and Need Based Scholarships
3. MUST-Agha Khan Foundation Scholarships	8. MUST Merit and Need Based Scholarships
4. MUST- Mansha Group of Companies Scholarships	9. Laraib Energy Limited Merit and Need Based Scholarships
5. MUST- AKCC&I, AKTA Scholarships	10. Ahsaas Program Scholarships
<b>Duration:</b>	
4 – 8 Semesters	



**Scheme of studies for (M. Sc. Zoology)**  
**Compulsory Courses for M.Sc. Zoology 1st and 2nd Semester**

<b>First Semester</b>		
<b>Course code</b>	<b>Course Title</b>	<b>Credits</b>
ZOL-5101	Molecular Cell Biology	3+1
ZOL-5102	Animal Physiology	3+1
ZOL-5103	Genetics	3+1
ZOL-5104	Environmental Biology	2+1
ZOL-5105	Evolution	2+0
	<b>Total Credits</b>	<b>17</b>
<b>Second Semester</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>
ZOL-5201	General Biochemistry	3+1
ZOL-5202	Developmental Biology	3+1
ZOL-5203	Principles of Animal Taxonomy	2+1
ZOL-5204	Biostatistics	2+1
ZOL-5205	Paleontology	2+1
	<b>Total Credits</b>	<b>17</b>



**i) List of Elective Courses for M. Sc. in Zoology 3rd Semester**

Course code	Course Title	Lec. Hrs	Lab. Hrs	Credit Hrs.
ZOL-6301	Zoogeography	2	1	3
ZOL-6302	Reproductive Physiology	2	1	3
ZOL-6303	Clinical Endocrinology	2	1	3
ZOL-6304	Neurophysiology	2	1	3
ZOL-6305	Immunology	2	1	3
ZOL-6306	Hematology	2	1	3
ZOL-6307	Biotechnology-I	2	1	3
ZOL-6308	Biotechnology-II	2	1	3
ZOL-6309	General Toxicology	2	1	3
ZOL-6310	Human Genetics	2	1	3
ZOL-6311	General Microbiology	2	1	3
ZOL-6312	General Parasitology	2	1	3

Course code	Course Title	Lec. Hrs	Lab. Hrs	Credit Hrs.
ZOL-6313	Invertebrata	2	1	3
ZOL-6314	General Entomology	2	1	3
ZOL-6315	Principles of Fish Biology	2	1	3
ZOL-6316	Fisheries & Aquaculture	2	1	3
ZOL-6317	Limnology-A	2	1	3
ZOL-6318	Principles of Herpetology	2	1	3
ZOL-6319	Biodiversity	2	1	3
ZOL-6320	Histology	2	1	3
ZOL-6321	Biological Techniques	1	2	3
ZOL-6322	Research Methodology	2	1	3
ZOL-6424	Thesis	0	0	0



### List of Elective Courses for M. Sc. in Zoology 4th Semester

Course code	Course Title	Lec. Hrs	Lab. Hrs	Credit Hrs.
ZOL-6401	Physiological Systems and Adaptations	2	1	3
ZOL-6402	Molecular Physiology	2	1	3
ZOL-6403	Endocrinology	2	1	3
ZOL-6404	Animal Behaviour	2	1	3
ZOL-6405	Economic Zoology	2	1	3
ZOL-6406	Bioremediation & Environmental Biotechnology	2	1	3
ZOL-6407	Biochemistry – II	2	1	3
ZOL-6408	Molecular Biology	2	1	3
ZOL-6409	Medical Microbiology	2	1	3
ZOL-6410	Applied Microbiology	2	1	3
ZOL-6411	Medical Parasitology	2	1	3
ZOL-6412	Helminthology	2	1	3

Course code	Course Title	Lec. Hrs	Lab. Hrs	Credit Hrs.
ZOL-6413	Vector Biology	2	1	3
ZOL-6414	Animal Pests and Disease Producing Organisms	2	1	3
ZOL-6415	Fish Physiology	2	1	3
ZOL-6416	Ichthyology (Fish Morphology)	2	1	3
ZOL-6417	Limnology-B	2	1	3
ZOL-6418	Vertebrata	2	1	3
ZOL-6419	Ornithology	2	1	3
ZOL-6420	Mammalogy	2	1	3
ZOL-6421	Wildlife	2	1	3
ZOL-6422	Environmental Issues	2	1	3
ZOL-6423	Comprehensive Written Examination	S/U Basis		
ZOL-6424	Thesis	0	0	6



## **M.Phil. Zoology**

M. Phil degree is a research based specialization that provides a systematic research, critical analysis, problem recognition and solution designing abilities to a scholar. One year academic activities are followed by one-year research activity. At the end of research, thesis written by scholar is evaluated by internal and external examiners. A public defense is notified by the department and scholar defends thesis publically. Scholar needs strong communication skills, usually developed through assignment and seminar presentations held in earlier semesters. Degree is awarded at the end of successful public defense. M. Phil in zoology gives wide chances of job in public and private sector DAIs, colleges, research organizations, industries, abroad institutions and would pave a way for doctoral studies.

## **Program Mission**

M. Phil Zoology program aims to impart solution based philosophical and research aptitude to the emerging problems in zoology.

## **Program Educational Objectives (PEOs)**

- To enhance the professional capabilities of scholars and empowers them with the most advanced and contemporary comprehension of zoology.
- To provide healthier opportunities and latest research methodologies for cutting edge basic and applied research relevant to national and global needs and develop scholar's innovative, novel and critical perspectives on research problem.
- To develop strong communication and managerial skills, multidisciplinary and collaborative scientific culture among scholars.





- To inculcate ethical values in scholars for the betterment of the humanity.
- To provide students with opportunities to publish their research work in reputed national and international journals.

### **Program Learning Objectives (PLOs)**

1. Development of a vibrant and sound teaching system based on the experience and vision gathered from world reviews, literature, innovations, proceedings, symposia etc.
2. Designing and persistently updating the curricula to provide a wide comprehension in major fields of zoology including core, elective and special courses.
3. Establishment of well-equipped teaching and research laboratories depending on the available resources, maintaining a high level of scientific excellence in teaching, research, theses and publications.

4. To focus on emerging research problems relevant to national and global.
5. To inculcate ethical values in students, community-based and outreach activities to a possible extent for the betterment of the nation.

#### **Admission Criterion:**

1. CGPA 3.00/4.00 in M.Sc. Zoology, Biology, Molecular Biology and Biotechnology with no third division in the academic career.
2. GAT General conducted by NTS will be required (if mentioned in the advertisement) with minimum 50% cumulative score

#### **Duration:**

4-6 Semesters



### Scheme of Study (M.Phil. Zoology)

<b>Duration</b>	4-6 Semester
<b>Course Work</b>	24
<b>Seminar</b>	01
<b>Thesis</b>	06
<b>Research Methodology and Scientific Writing</b>	S/U
<b>Total</b>	31

#### List of Elective Courses for M. Phil in Zoology

CODE	COURSE	CR. HRS	CODE	COURSE	CR. HRS
ZOL-701	Human Embryology and Teratology	3	ZOL-712	Fish Physiology and Breeding	3
ZOL-702	General and Comparative Endocrinology	3	ZOL-713	Advances in Aquaculture	3
ZOL-703	Advances in Molecular Cell Biology	3	ZOL-714	Conservation Biology of Wildlife	3
ZOL-704	Advances in Molecular Genetics	3	ZOL-715	Wildlife Diversity of Pakistan and AJ&K	3
ZOL-705	Advances in Human Genetics	3	ZOL-716	Advances in Environmental Biology	3
ZOL-706	Bioethics	3	ZOL-717	Fundamentals of Biotechnology	3
ZOL-707	Bioinformatics	3	ZOL-718	Instrumental Techniques	3
ZOL-708	Cancer Genetics	3	ZOL-719	Advances in Developmental Biology	3
ZOL-709	Systemic Toxicology	3	ZOL-720	Advances in Medical Parasitology	3
ZOL-710	Fundamentals of Microbiology	3	ZOL-721	Advances in Reproductive Physiology	3
ZOL-711	Biology and Control of Vertebrate Pests	3	ZOL-722	Recombinant DNA Technology	3



CODE	COURSE	CR. HRS	CODE	COURSE	CR. HRS
ZOL-723	Advances in Microbiology	3	ZOL-740	Industrial and Pharmaceutical Microbiology	3
ZOL-724	Wildlife Conservation of Pakistan and Azad Jammu & Kashmir	3	ZOL-741	Medical Biotechnology	3
ZOL-725	Diagnostic Techniques in Molecular Genetics	3	ZOL-742	Microbial Genomics	3
ZOL-726	Applied and Experimental Statistics	3	ZOL-743	Principle and Kinetics of Toxicology	3
ZOL-727	Comparative Physiology	3	ZOL-744	Regulation of Gene Expression	3
ZOL-728	Comparative Vertebrate Endocrinology	3	ZOL-745	Protected Areas Management, Ecological Restoration and Sustainable Development	3
ZOL-729	Physiology of Co-ordination	3	ZOL-746	Biological Toxicology	3
ZOL-730	Molecular Physiology of Gene Expression and Function	3	ZOL-747	Enzyme Technology	3
ZOL-731	Environmental Biotechnology	3	ZOL-748	Environmental Health	3
ZOL-732	Application of Biotechnology	3	ZOL-749	Research Methodology and Scientific Writing	3
ZOL-733	Population Genetics	3	ZOL-750	Fish Bioenergetics	3
ZOL-734	Biochemistry of Drug Action	3	ZOL-751	GIS Techniques	3
ZOL-735	Applied Entomology	3	ZOL-752	Restoration Ecology and Sustainable Development	3
ZOL-736	Behavioral Ecology	3	ZOL-753	Advances in Plasma Biology	3
ZOL-737	Biology of Birds and Mammals in Pakistan and AJK	3	ZOL-754	Plasma Medicine	3
ZOL-738	Principles of Wildlife Management	3	ZOL-755	Biological Tools, Techniques and Research Design	3
ZOL-739	Advances in Immunology	3			



### M. Phil 3<sup>rd</sup> and 4<sup>th</sup> Semesters

CODE	COURSE	Credit Hrs	Status
ZOL-798	Seminar	1	Compulsory
ZOL-799	Thesis	06	Compulsory
<b>Total Credits</b>		<b>7</b>	



## **Ph.D. Zoology**

PhD degree is a research-based specialization that provides a systematic research, critical analysis, problem recognition and solution designing abilities to a scholar. One-year academic activities are followed by two-year research activities. At the end of research, thesis written by scholar is evaluated by supervisory committee (having a supervisor and two members). If found satisfactory, this thesis is sent to at least two external referees working in the universities of developed countries and one national examiner. After successful evaluation of doctoral thesis by both foreign and local referees a public defense is notified by the department and scholar will defend thesis publically. One research paper published in HEC Recognized Journal is also mandatory for the degree. PhD in zoology gives wide chances of job in public and private sector

DAIs, colleges, research organizations, industries, abroad institutions.

### **Program Mission**

PhD Zoology program aims to impart solution based philosophical and research aptitude to the emerging problems in field of Zoology as well as in society.

### **Program Educational Objectives (PEOs)**

1. To enhance the professional capabilities of scholars and empowers them with the most advanced and contemporary comprehension of zoology.
2. To provide healthier opportunities and latest research methodologies for cutting edge basic and applied research relevant to national and global needs and develop scholar's innovative, novel and critical perspectives on research problem.



3. To develop strong communication and managerial skills, multidisciplinary and collaborative scientific culture among scholars.
4. To inculcate ethical values in scholars for the betterment of the humanity.
5. To provide students with opportunities to publish their research work in reputed national and international journals.

### **Program Learning Objectives (PLOs)**

1. Development of a vibrant and sound teaching system based on the experience and vision gathered from world reviews, literature, innovations, proceedings, symposia etc.
2. Designing and persistently updating the curricula to provide a wide comprehension in major fields of zoology including core, elective and special courses.
3. Establishment of well-equipped teaching and research laboratories depending on the available resources,

maintaining a high level of scientific excellence in teaching, research, theses and publications.

4. To focus on emerging research problems relevant to national and global.
5. To inculcate ethical values in students, community-based and outreach activities to a possible extent for the betterment of the nation.

#### **Admission Criterion:**

- Candidate must have passed M.S, M.Phil or equivalent 18-years education with at least CGPA 3.00/4.00 and at least 3.50/5.0 (at least 65% marks) in semester system and Ist division (60% marks) in annual system of examination.
- The Candidate must have Passed the GRE subject test or equivalent as per HEC/ University guidelines.

#### **Duration:**

6-16 Semesters



### Scheme of Study (Ph.D. in Zoology)

<b>Duration</b>	<b>6-16 semester</b>
<b>Courses</b>	<b>18 Credit Hours</b>
<b>Seminar &amp; symposia</b>	<b>02 Credit Hours</b>
<b>Thesis</b>	<b>50 Credit Hours</b>
<b>Total</b>	<b>70 Credit Hours</b>

<b>List of Courses for PhD in Zoology</b>		
<b>No.</b>	<b>Course Title</b>	<b>Credit Hrs</b>
ZOL-801	Integrated Biological Resource Management	3
ZOL-802	Project Writing Monitoring and Evaluation	3
ZOL-803	Advances in Molecular Biology	3
ZOL-804	Genomics	3
ZOL-805	Molecular Biology of RNA	3
ZOL-806	Cancer Biology	3
eZOL-807	Oncology and Growth Control	3
ZOL-808	Clinical Microbiology	3
ZOL-809	Forensic Science	3
ZOL-810	Plasma Treatment and Laboratory Technology	3

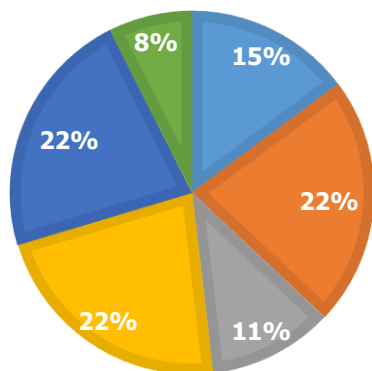


### PhD 3rd and onward Semesters

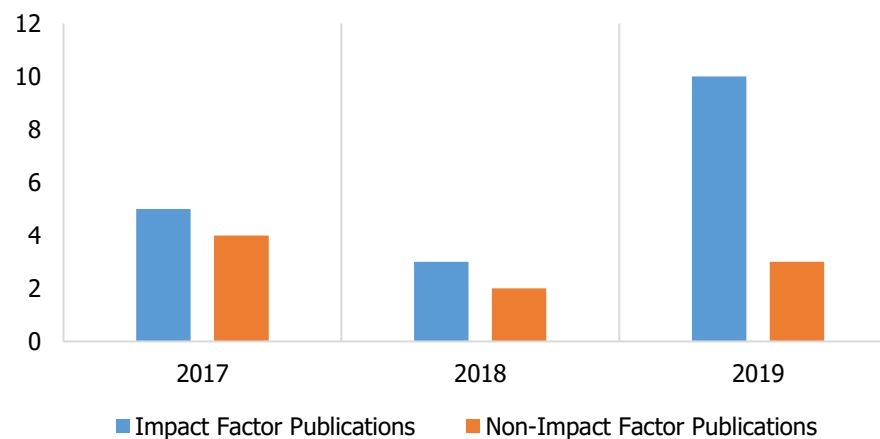
Code	Course Title	Credit Hrs	Status
ZOL-898	Seminar-I	1	Compulsory
ZOL-899	Seminar-II	1	Compulsory
ZOL-900	Thesis	50	Compulsory
<b>Total Credits</b>		<b>52</b>	

### PUBLICATIONS IN DIFFERENT FIELDS OF ZOOLOGY

- Cell and Molecular Biology
- Environmental Biology
- Parasitology
- Genetics
- Wildlife
- Microbiology



### PAPERS PUBLISHED in impact factor journals BY THE FACULTY OF ZOOLOGY during LAST THREE YEARS







## Laboratories

### 1) Human Molecular Genetics and Parasitology Lab

Human Molecular Genetics and Parasitology Lab is a state of the art lab established in 2019 in Department of Zoology, Home Economics Campus. We have highly sophisticated instrument installed in this lab. The major Instruments installed in this Lab Include PCR, Gel Electrophoresis apparatus, Gel Documentation System, Nano Drop Spectrophotometer, Ice Machine, Biochemical System and highly sophisticated microscopes. Students are actively engaged in research activities in this lab. The major focused area of research includes Identification of Genes involved in hereditary disorders and molecular characterization of sand flies and other vectors and parasites.





## 2) Cell Biology and Environmental Biology Lab

Cell biology and Environmental Biology Lab is Established at main campus of the university. We have also installed highly sophisticated lab equipments in this lab which include Rotary evaporator, biological Safety cabinet, -80 refrigerator, Co2 incubator, Elies plate Reader, flame photometer and UV/Vis spectrophotometer. The core area of the research includes enzyme assay and antibiotic activities of certain biological compounds. Another major focused area is environmental toxicology. Students of MPhil are actively engaged in research activities in this Lab.





## ALUMNI MESSAGES

I carry honor of being an alumni of Zoology MUST. Time flies like an arrow, reflecting on my 4 years' journey, I realize that it has been thoroughly a wonderful experience which not only nurtured my academia but also my co-curricular activities career here will be an invaluable legacy in my life. The Mphil program at Zoology MUST has played a vital role in improving my research aptitude. I do believe that what I learnt in Zoology MUST will give me a solid foundation for my professional life.



**Arrukh Avais Ch**  
**Mphil Zoology**

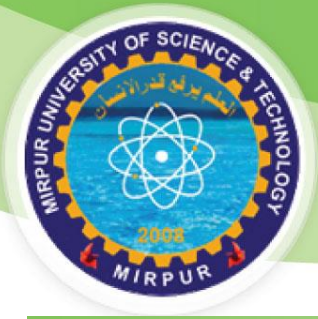
It's a great honor for me to be a part of such a prestigious department where I came across the best of teachers I ever had, whose positivity, encouragement and inspiration brightened my days. They Made me learn to go through difficulties. Brought my potentials to work. Sharpened my skills and took the best out of me in learning and then putting all the learnings in practices Respect and reverence to them.



**Saiqa Khushal**  
**Mphil Zoology**



**FACULTY OF  
SOCIAL SCIENCES  
AND HUMANITIES**



### **Dean Faculty of Social Sciences and Humanities**

Prof. Dr. Magsood Ahmed

Tel. : +92-05827-961014

E-mail: [deanarts@must.edu.pk](mailto:deanarts@must.edu.pk)

### **Dean's Message**

With education splitting into several waves, one feels the need for educational décor in a way that would uplift our spiritual, cultural and traditional perspectives and also undertake the historical facets of our beloved planet. Art and Humanities are the pillars of education same as we put weight on science and technology. We (The Mankind) have been able to nourish Art and Humanities over the years with more and more creativity coming into being and with its solemn affirmation to our rituals and historical events, it has generated several new and situational trends in the field of Arts and Humanities. Always among the highest expression of every culture the art teaches us much about every historical period through its buddings like literature, philosophy, religion and fine arts. To have a pure knowledge of arts one needs not only to study but also participate in the activities of art work. This would reveal several new horizons in the field of art with its chiasm enlightening the lives of many both educationally and spiritually. Universally speaking the arts surpass all language barriers and depict the world as a unit with slight changes every civilization has in their setups. Arts can bring every subject to life and turn abstraction into concrete reality. As Dean Faculty of Arts, I am honored to say that with the aspirations of the Vice Chancellor Mirpur University of Science and Technology, Prof. Dr. Habib-ur-Rehman (S.I), we have been able to successfully establish the faculty of arts considering the needs of people in general and specifically of Azad Kashmir. I am obliged and thankful to the faculty members for their hard work and full cooperation in illuminating the very new concepts of education in Azad Kashmir. I am also hopeful that with our efforts, we would be able to acclimatize many other educational reforms in the field of Arts and Humanities in coming years.

# DEPARTMENT OF EDUCATION

## Degree Programs Offered

Associate Degree in Education (ADE)

B.Ed. Elementary (4 years)

B.Ed. Elementary (2.5 years)

B.Ed. Secondary (1.5 years)

MA Education (2 years)

M.Phil. Education





### **Chairperson**

Dr. Razia Rizve

E-mail: [chairperson.education@must.edu.pk](mailto:chairperson.education@must.edu.pk)

### **Message from Chairperson**

Department of education has experienced continuous progress due to commitment to educational excellence. Our mission continues to drive our growth and progress, building on strong foundations. Faculty is dedicated to help every individual to attain his or her maximum potential, both academically and professionally. Fostering and celebrating our student's talents and achievements are at the core of all we do every day.



## Faculty Members

### **Dr Razia Rizve**

**Designation:** Assistant Professor

**Qualification:** Ph.D. Education

### **Saima Mir**

**Designation:** Lecturer

**Qualification:** MA Urdu

### **Humaira Abbasi**

**Designation:** Lecturer

**Qualification:** M.Phil Education

### **Munawwar Hussain**

**Designation:** J. Lecturer

**Qualification:** M.Phil Education

### **Dr Saira Farooq**

**Designation:** Assistant Professor

**Qualification:** Ph.D. Education

### **Kiran Saleem**

**Designation:** Lecturer

**Qualification:** MA History

### **Ambreen Aftab**

**Designation:** J. Lecturer

**Qualification:** MA English





## **Introduction:**

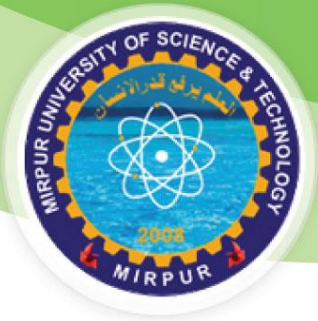
The Department of Education is very important in any society as its purpose is to produce well-qualified and trained teachers. Teaching is a very sacred profession and responsible job as it requires not only expertise in the related subject but also a calm and composed mind and a sense of building a nation. The Department of Education is practicing the teaching spirit in its students and expecting the same spirit in them as a teacher in their future. The scheme of study undertaken has been designed according to the specified guidelines of HEC. The Department of Education, MUST, Mirpur is situated in the main campus Mirpur. Its new building is under construction in Jarri Kas . The beautiful campus of the university is also a great attraction in the city of Mirpur.

## **Mission Statement:**

To facilitate the process of learning through provision of quality education as a main tool and ensure development of effective communication skills with the ability to think objectively and develop a mind with curiosity coupled with sense of innovation and creativity. Inculcate human values and character traits in the students to make them competitive in the challenging field of cognitive science.

## **Objectives:**

1. To facilitate students in learning process to develop them professionally equipped.
2. To develop the research culture among the students to be competitive.
3. To emphasize inclusive aspects of education as a mean to reform the society.
4. To incorporate human and scientific approach towards teaching profession.



## Associate Degree in Education :

### Eligibility Criteria

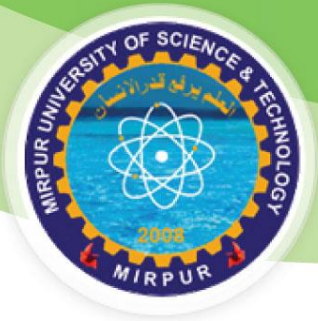
- FA/F.Sc/ A levels with minimum 2nd Division with no 3rd div in the academic career
- FA/F.Sc/ A levels with school subjects.
- The admission will be subjected to the provision of the character certificate from the last degree institution

### Duration of Degree

2 years (4 Semesters)

### Scheme of Study (Associate Degree in Education)

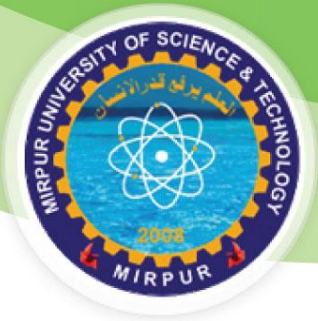
<b>Compulsory Courses</b>	18 Credits	
<b>Professional Courses</b>	21 Credits	
<b>Foundation Courses</b>	14 Credits	
<b>Content Courses</b>	09 Credits	
<b>Teaching Practice</b>	06 Credits	
<b>Total Credit Hours:</b>	<b>68 Credits</b>	
<b>SEMESTER-I</b>		
<b>Course Code</b>	<b>Courses</b>	<b>Credit Hrs</b>
ENG-1107	Functional English-I (Compulsory)	3
ISL-0012	Islamic Studies/ Ethics (Compulsory)	2
EDU-3103	Child Development (Foundation)	3
EDU-3104	Urdu / Regional Languages (Content)	3
EDU-3105	General Science (Content)	3
EDU-3106	General Methods of Teaching (Foundation)	3
	<b>Total Credit Hours</b>	<b>17</b>



<b>SEMESTER II</b>		
<b>Course Code</b>	<b>Courses</b>	<b>Credit Hrs</b>
ENG-1207	English-II (Communication Skills Compulsory)	3
EDU-3202	Computer Literacy (Compulsory)	3
EDU-3203	Classroom Management (Foundation)	3
EDU-3204	General Mathematics (Compulsory)	3
PS-0017	Pakistan Studies (Compulsory)	2
EDU-3206	Methods of Teaching Islamic Studies (Professional)	3
	<b>Total Credit Hours</b>	<b>17</b>
<b>SEMESTER III</b>		
<b>Course Code</b>	<b>Courses</b>	<b>Credit Hrs</b>
EDU-4301	Teaching Literacy Skills (Professional)	3
EDU-4302	Art, Crafts and Calligraphy (Content)	3
EDU-4303	Teaching of Urdu (Professional)	3
EDU-4304	Science II (Professional)	3
EDU-4305	Instructional and Communication Technology (ICT) in Education (Professional)	2
EDU-4306	Teaching Practice (Short Term)	3
	<b>Total Credit Hours</b>	<b>17</b>



<b>SEMESTER – IV</b>		
<b>Course Code</b>	<b>Courses</b>	<b>Credit Hrs</b>
EDU-4401	Classroom Assessment (Foundation)	3
EDU-4402	Teaching of English (Professional)	3
EDU-4403	Teaching of Mathematics (Professional)	3
EDU-4404	School, community and Teacher (Foundation)	3
EDU-4405	Teaching of Social Studies (Professional)	3
EDU-4406	The Teaching Practicum	3
	<b>Total Credit Hours</b>	<b>18</b>



## **B.Ed. Elementary (4 years)**

### **Admission Requirements**

1. FA/F.Sc / A level or equivalent with minimum 2nd Div with no 3rd div in the academic career
2. FA/F.Sc / A level with school subjects.
3. The admission will be subjected to the provision of the character certificate from the last degree institution

### **Duration of Degree**

4 years

### **Duration of Semester**

16-18 weeks

### **Semester**

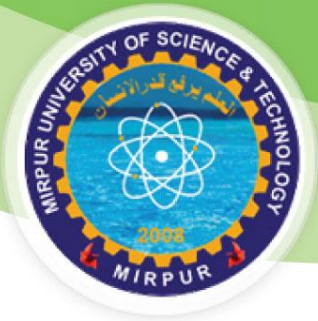
8 Semesters

### **Course Load per Semester**

15-18 Credit Hours

### **Number of Courses per Semester**

5-6 (Not more than 3 lab/ practical courses)



### Scheme of Study B. Ed. Elementary (Discipline 1: Urdu, English Discipline 2: History, Science)

<b>Compulsory Courses</b>	21 Credits	
<b>Professional Courses</b>	49 Credits	
<b>Foundation Courses</b>	23 Credits	
<b>Content Courses</b>	27 Credits	
<b>Teaching Practice</b>	15 Credits	
<b>Total Credit Hours:</b>	<b>135 Credits</b>	
<b>SEMESTER I</b>		
<b>Course Code</b>	<b>Courses</b>	<b>Credit Hrs.</b>
ENG-1107	Functional English-I (Compulsory)	3
ISL-0012	Islamic Studies/ Ethics (Compulsory)	2
EDU-3103	Child Development (Foundation)	3
EDU-3104	Urdu / Regional Languages (Content)	3
EDU-3105	General Science (Content)	3
EDU-3106	General Methods of Teaching (Foundation)	3
<b>Total Credit Hours</b>		<b>17</b>
<b>SEMESTER II</b>		
<b>Course Code</b>	<b>Courses</b>	<b>Credit Hrs.</b>
ENG-1207	English-II (Communication Skills Compulsory)	3
EDU-3202	Computer Literacy (Compulsory)	3
EDU-3203	Classroom Management (Foundation)	3
EDU-3204	General Mathematics (Compulsory)	3
PS-0017	Pakistan Studies (Compulsory)	2
EDU-3206	Methods of Teaching Islamic Studies (Professional)	3
<b>Total Credit Hours</b>		<b>17</b>



<b>SEMESTER III</b>		
<b>Course Code</b>	<b>Courses</b>	<b>Credit Hrs</b>
EDU-4301	Teaching Literacy Skills (Professional)	3
EDU-4302	Art, Crafts and Calligraphy (Content)	3
EDU-4303	Teaching of Urdu (Professional)	3
EDU-4304	Science II (Professional)	3
EDU-4305	Instructional and Communication Technology (ICT) in Education (Professional)	2
EDU-4306	Teaching Practice (Short Term)	3
<b>Total Credit Hours</b>		<b>17</b>
<b>SEMESTER – IV</b>		
<b>Course Code</b>	<b>Courses</b>	<b>Credit Hrs</b>
EDU-4401	Classroom Assessment (Foundation)	3
EDU-4402	Teaching of English (Professional)	3
EDU-4403	Teaching of Mathematics (Professional)	3
EDU-4404	School, community and Teacher (Foundation)	3
EDU-4405	Teaching of Social Studies (Professional)	2
EDU-4406	The Teaching Practicum	3
<b>Total Credit Hours</b>		<b>18</b>



<b>SEMESTER – V</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs</b>
EDU-5501	English – III (Technical Writing & Presentation Skills) (Compulsory)	3
EDU-5502	Foundations of Education (Foundation)	3
EDU-5503	Content Course – I(from selected discipline – I)	3
EDU-5504	Content Course – I(from selected discipline – II)	3
EDU-5505	Curriculum Development (Foundation)	3
EDU-5506	Educational Psychology (Foundation)	3
	<b>Total Credit Hours</b>	<b>18</b>
<b>SEMESTER – VI</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs</b>
EDU-5601	Contemporary Issues and Trends in Education (Professional)	3
EDU-5602	Content Course – II (from selected discipline – I)	3
EDU-5603	Content Course – II (from selected discipline – II)	3
EDU-5604	Comparative Education (Professional)	3
EDU-5605	Introduction to Guidance and Counseling (Professional)	3
	<b>Total Credit Hours</b>	<b>15</b>





<b>SEMESTER – VII</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs</b>
EDU-6701	Content Course – III(from selected discipline – I)	3
EDU-6702	Content Course – III(from selected discipline – II)	3
EDU-6703	Inclusive Education (Professional)	3
EDU-6704	Educational Management and Leadership	3
EDU-6705	Research Methods in Education (Professional)	3
EDU-6706	Teaching Practice (Short Term)	3
	<b>Total Credit Hours</b>	18
<b>SEMESTER – VIII</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs</b>
EDU-6801	School Management (Professional)	3
EDU-6802	Test Development and Evaluation (Profesional)	3
EDU-6803	Teaching Practice (Long Term)	6
EDU-6804	Research Project (Professional)	3
	<b>Total Credit Hours</b>	15
	<b>Grand Total Credit Hours</b>	135



## B.ED Elementary (2.5 years)

### Entry Requirements

- B.A. /B.Sc or equivalent with at least second division with no 3rd div in the academic career.
- Entry Test conducted by the university.
- The admission will be subjected to the provision of the character certificate from the last degree institution

### Scheme of Study (B. ED Elementary)

<b>Duration:</b>	4-6 Semesters	
<b>Thesis/Research Project</b>	06 Credit Hours	
<b>Teaching Practice</b>	03 Credit Hours	
<b>Total Courses</b>	87 Credit Hours	
<b>Oral comprehension examination</b>	S/U Basis	
<b>Bridging Semester (Zero)</b>		
<b>Course Code</b>	<b>Name of Subject</b>	<b>Credit Hours</b>
EDU-0001	English(Communication Skills)	03
EDU-0002	Mathematics	03
EDU-0003	Computer Education	03
EDU-0004	Management in Classroom	03
EDU-0005	Community, School and Teacher	03
EDU-0006	Development in Children	03
	<b>Total</b>	<b>18</b>



<b>Semester-I</b>		
<b>Course Code</b>	<b>Name of Subject</b>	<b>Credit Hours</b>
EDU-5101	Foundation of Education	03
EDU-5102	ICT in Education	03
EDU-5103	Education in Pakistan	03
EDU-5104	Educational Leadership & Management	03
EDU-5105	Contemporary Trends & Issues in Education	03
<b>Total</b>		<b>15</b>
<b>Semester-II</b>		
<b>Course Code</b>	<b>Name of Subject</b>	<b>Credit Hours</b>
EDU-5201	Educational Psychology	03
EDU-5202	Islamic System of Education	03
EDU-5203	Introduction to Curriculum Development	03
EDU-5204	Guidance & Counseling	03
EDU-5205	Educational Technologies	03
EDU-5206	Teaching Methods and Strategies	03
<b>Total</b>		<b>18</b>



<b>Semester-III</b>		
<b>Course Code</b>	<b>Name of Subject</b>	<b>Credit Hours</b>
EDU-6301	Research Methods in Education	03
EDU-6302/EDU-6303	Teaching of English/Urdu	03
EDU-6304	Comparative Education	03
EDU-6305/ EDU-6306/ EDU-6307	Teaching of Social Studies/ General Science/ Islamic Studies	03
EDU-6308	Teaching Practice	03
<b>Total</b>		<b>15</b>
<b>Semester-IV</b>		
<b>Course Code</b>	<b>Name of Subject</b>	<b>Credit Hours</b>
EDU-6401	Elementary & Secondary Education	03
EDU-6402	Higher Education	03
EDU-6403	Teacher Education	03
EDU-6404	Thesis /Research Project	06
EDU-6405	Educational Measurement and Evaluation	03
<b>Total</b>		<b>18</b>
<b>Total Credit Hours</b>		<b>66</b>



## B.ED Secondary (1.5 years)

### Entry Requirements

- M.A/M.Sc or equivalent with at least second division with no 3rd div in the academic career.
- Entry Test conducted by the university.
- The admission will be subjected to the provision of the character certificate from the last degree institution

### Scheme of Study (B. ED Secondary)

<b>Duration:</b>	03 Semesters
<b>Thesis/Research Project</b>	06 Credit Hours
<b>Teaching Practice</b>	06 Credit Hours
<b>Courses</b>	36 Credit Hours
<b>Total</b>	54 Credit Hours
<b>Oral comprehension examination</b>	S/U Basis

#### Semester-I

Course Code	Name of Subject	Credit Hours
EDU-3106	General Methods of Teaching	03
EDU-4401	Classroom Assessment	03
EDU-4404	School, Community and Teacher	03
EDU-5502	Foundations of Education	03
EDU-5505	Curriculum Development	03
EDU-5506	Educational Psychology	03
<b>Total</b>		<b>18</b>



<b>Semester-II</b>		
<b>Course Code</b>	<b>Name of Subject</b>	<b>Credit Hours</b>
EDU-6301	Research Methods in Education	03
EDU-6309	Teaching of Biology	03
EDU-6311	Teaching of Chemistry	03
EDU-6312	Teaching of Mathematics(Sec)	03
EDU-6310	Teaching of Physics	03
EDU-4306	Teaching Practice	03
<b>Total</b>		<b>18</b>
<b>Semester-III</b>		
<b>Course Code</b>	<b>Name of Subject</b>	<b>Credit Hours</b>
EDU-5604	Comparative Education	03
EDU-5605	Introduction to Guidance and Counseling	03
EDU-6802	Test Development and Evaluation	03
EDU-6804	Research Project	06
EDU-4306	Teaching Practice	03
<b>Total</b>		<b>18</b>



## M.A EDUCATION

### Entry Requirements

- B.A. /B.Sc or equivalent with at least second division with no 3rd div in the academic career.
- Entry Test conducted by the university.
- The admission will be subjected to the provision of the character certificate from the last degree institution

### Scheme of Study (M.A EDUCATION)

<b>Duration:</b>	4-6 Semesters	
<b>Thesis/Research Project</b>	06 Credit Hours	
<b>Teaching Practice</b>	06 Credit Hours	
<b>Total Courses</b>	69 Credit Hours	
<b>Oral comprehension examination</b>	S/U Basis	
<b>Semester-I</b>		
<b>Course Code</b>	<b>Name of Subject</b>	<b>Credit Hours</b>
EDU-5101	Foundation of Education	03
EDU-5102	ICT in Education	03
EDU-5103	Education in Pakistan	03
EDU-5104	Educational Leadership & Management	03
EDU-5105	Contemporary Trends & Issues in Education	03
	<b>Total</b>	<b>15</b>

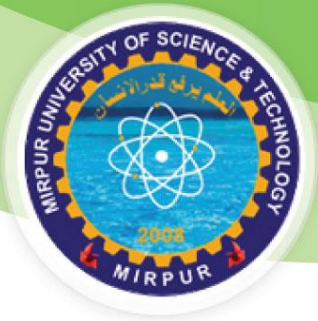


<b>Semester-II</b>		
<b>Course Code</b>	<b>Name of Subject</b>	<b>Credit Hours</b>
EDU-5201	Educational Psychology	03
EDU-5202	Islamic System of Education	03
EDU-5203	Introduction to Curriculum Development	03
EDU-5204	Guidance & Counselling	03
EDU-5205	Educational Technologies	03
EDU-5206	Teaching Methods and Strategies	03
	<b>Total</b>	<b>18</b>
<b>Semester-III</b>		
<b>Course Code</b>	<b>Name of Subject</b>	<b>Credit Hours</b>
EDU-6301	Research Methods in Education	03
EDU-6302/EDU-6303	Teaching of English/Urdu	03
EDU-6304	Comparative Education	03
EDU-6305/ EDU-6306/ EDU-6307	Teaching of Social Studies/ General Science/ Islamic Studies	03
EDU-6308	Teaching Practice	06
	<b>Total</b>	<b>18</b>





<b>Semester-IV</b>		
<b>Course Code</b>	<b>Name of Subject</b>	<b>Credit Hours</b>
EDU-6401	Elementary &Secondary Education	03
EDU-6402	Higher Education	03
EDU-6403	Teacher Education	03
EDU-6404	Thesis /Research Project	06
	<b>Or</b>	
EDU-4404	School, Community and Teacher	03
EDU-6406	Communication Skill	03
EDU-6405	Educational Measurement and Evaluation	03
	Total	<b>18</b>
	<b>Total Credit Hours</b>	<b>69</b>



## **M.Phil. Education**

The M.Phil. Programme is crucial for prospective researchers at the pre-doctoral level. The programme is designed to build the research capacity of scholars from varied backgrounds and provide a strong orientation in different areas of education.

M.Phil. programme will include Core courses and Area of Specialization. In addition, all the students will be required to undertake a Dissertation. The course will help to develop a rational conceptualization of educational research. Early stage research students will develop competency in undertaking independent micro and macro level research projects in the priority areas of teacher education and /or in the area of education interdisciplinary.

### **Objectives to Offer Program**

The students will be helped to:

- Reflect on the basic parameters within which the system of school education operates. These are: the learner, the

teacher, the teaching-learning process, pedagogy, the school context, the larger societal context, the support systems and various connections and interconnections between these parameters

- Appreciate that research would help to enhance efficiency, effectiveness, quality and excellence in the system of school education
- Develop an understanding about problems of education and methodology to explore alternative solutions.
- Develop competency in undertaking leadership in the areas of School Education and Teacher Education
- Develop a rational conceptualization of educational research.
- Develop competency in undertaking independent micro and macro level research projects in the priority areas of school education and teacher education.



## Admission Criteria

### Minimum Academic Requirement:

- A candidate seeking admission to the degree must have sixteen years of education or 4 years education after F.A. /F. Sc. or equivalent (at least 130 credit hours) with at least second division/CGPA 2.50 in the degree on the basis of which admission is requested.
- Any candidate having M. Ed (Education) M.A. Education degree with at least 45% marks of any recognized University with no 3rd div in the academic career shall be eligible to apply for the course.
- Passing the interview conducted by the admission committee of the department will be mandatory for the admission.

- The admission will be subjected to the provision of the character certificate from the last degree institution
- GAT with minimum of 50% score is compulsory.

## Duration

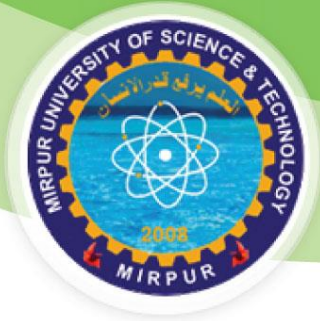
The duration of the course is 4 to 6 semesters, and total of 30 credit hours as per HEC criteria.

## Duration of the Semester

There shall be 2 semesters per year (Fall and Spring) of 18 weeks each. The commencement of semesters shall be regulated by the Academic Council.

## Medium of Instruction

The medium of instruction and examinations shall be English.



### Scheme of Study:

<b>Courses Semester 1 (12 Credit Hrs)</b>			
<b>Code</b>	<b>Course Title</b>	<b>Lab Hrs</b>	<b>Credit Hrs</b>
EDU-7101	Professional development of Teachers (Core)	0	3
EDU-7102	Qualitative Research Methods in Education (Core)	0	3
EDU-7103	Advanced Course on Educational Psychology (Professional)	0	3
EDU-7104	Educational Testing, Measurement and Evaluation (Professional)	0	3
<b>Courses Semester 2 (12 Credit Hrs)</b>			
<b>Code</b>	<b>Course Title</b>	<b>Lab Hrs</b>	<b>Credit Hrs</b>
EDU-7201	Educational change and Development (Core)	0	3
EDU-7202	Quantitative Research Methods in education (Core)	0	3
EDU-7203	Trends and issues in Teacher Education (Professional)	0	3
EDU-7204	Educational Policy, Planning and Management (Professional)	0	3
EDU-7002	Thesis	<b>Credit Hrs6</b>	
EDU-7001	Seminar	<b>Credit Hrs 1</b>	

<b>Sr. No.</b>	<b>Summary</b>	<b>Total Credit hrs.</b>
<b>I</b>	<b>Core Courses</b>	<b>12</b>
<b>ii</b>	<b>Elective Courses/Area of Specialization</b>	<b>12</b>
<b>iii</b>	<b>Thesis</b>	<b>06</b>
<b>iv</b>	<b>Seminar</b>	<b>1</b>
<b>TOTAL Credit hours</b>		<b>31</b>

# DEPARTMENT OF HOME ECONOMICS

## Our Vision

To empower students to meet and exceed challenges as active participants in shaping the future of our Home Economists.

## Degree Programs Offered

BS Home Economics after HSSC

BS Home Economics after SSC

M.Sc. Textile & Clothing

M.Sc. Food and Nutrition





**Chairperson:**

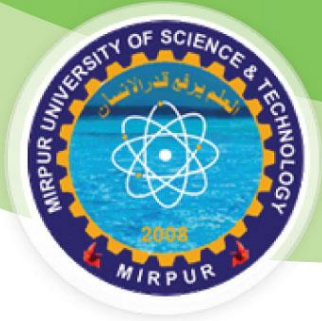
Rasheed Siddiqui

Tel: +92-5827-961052

E-mail: [chairperson.he@must.edu.pk](mailto:chairperson.he@must.edu.pk)

**Message from Chairperson:**

It is indeed my pleasure and honor to be part of MUST. An institution which is alma mater to many professionals and even most of the faculty. I humbly feel proud to be associated with this great institution under the dynamic and able command of Worthy Vice Chancellor (Dr. Maqsood Ahmed). I am also thankful to my colleagues in Home Economics Department who are serving with utmost potential, dedication and highly professional manner. The department aims to provide graduates the opportunities to acquire the knowledge and to develop the skills required for organization and management of resources and strengthen student's daily life experience and to stimulate ideas of creativity. This department develops students' individual capability by encouraging practical application of knowledge and problem-solving tasks.



## Faculty Members

**Mr. Rasheed Siddiquee**

**Designation:** Chairman

**Mrs. Nasreen Tariq**

**Designation:** Assistant Professor

**Mrs. Sobia Akram**

**Designation:** Lecturer

**Mrs. Amina Gul**

**Designation:** Lecturer

**Mrs. Tehmina Tabbasum**

**Designation:** J.Lecturer

**Ms. Gohar Iqbal**

**Designation:** J.Lecturer

**Mrs. Tayyaba Gul**

**Designation:** Assistant Professor

**Mrs. Rahat Sharif**

**Designation:** Assistant Professor

**Mrs. Asma Sagheer Khan**

**Designation:** Lecturer

**Mrs. Sabahat Zareen**

**Designation:** Lecturer

**Mrs. Nazish Zulfiqar**

**Designation:** Lecturer

**Mrs. Sehrish**

**Designation:** J.Lecturer



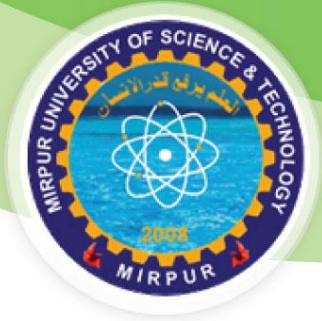
## Mission Statement

- To instruct about the universal values of households and families as environments within which individuals are supported to reach their full probable and to acknowledge their global interdependence.
- To highlight the social, economic and environmental influence of the management of everyday life of individuals, families and households.
- To promote the concept of families and households as operating within a larger social, economic and physical environment with a myriad of exchanges between individuals and these larger environments on a daily basis.
- To conduct research in areas relevant to Home Economics which increase the understanding of the environmental view of individuals, families and households in the larger environment.

## Objectives

- To provide up to date and modern education to the students.
- To inculcate true appreciation of religious and Islamic values in the practical lives of the students.
- To develop social susceptibilities and make students to cope better with their various roles not only as individuals, but as family members and citizens of the state.
- To develop a positive attitude towards life.
- To gear women towards professional careers and a general socio-economic development.
- To develop confidence in students to understand the importance of their diverse role as nation builders.
- To expose the students to the latest knowledge and technology to familiarize them with the advancements in the industrial sector.





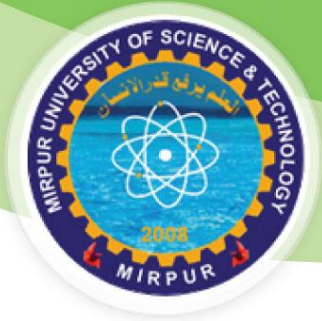
### **Jobs prospective for graduates:**

Our students have sound knowledge of Home Economics & they easily get jobs as:

- Nutritionist , dietitian , hotel managers, industry managers, food quality control manager , caterers, fashion designer, job in boutiques, owner of home industry, social mobilizes, Montessori teachers, head of child care centers, event manager, painters, interior designers, furniture designers, artist, calligrapher& creative editor.

### **Facilities**

<ul style="list-style-type: none"><li>• Food &amp; Nutrition Lab</li><li>• Textile&amp; Clothing Lab</li><li>• Art &amp; Design Lab</li><li>• Child Development &amp; Guidance Lab (Nursery section)</li><li>• Home Management &amp; Residence Lab</li></ul>	<ul style="list-style-type: none"><li>• Bio-Physics Lab</li><li>• Chemistry Lab</li><li>• Computer Lab</li><li>• Library</li><li>• Hostel Accommodation</li><li>• Transport</li><li>• Canteen</li><li>• Examination Hall</li></ul>
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## **Introduction of Home Economics Disciplines:**

### **Food and nutrition**

One of the most significant domain so many Home Economics curriculum is Food & Nutrition. Central focuses included learning many different ways of preparing nutrition meal as well as safe foods storage techniques ;this helped lay the foundation for how Food & Nutrition is incorporated into Home Economics curriculum today. Food & Nutrition based on meal management, food preservation, experimental food, food technology, institutional management, dietetics & community nutrition etc.

**Clothing & Textiles** This subject covers the main area of our need of clothing also concerned the textile chemistry, Textile marketing & merchandizing, textiles Engineering and textile designing etc.

**Human development** deals with the psychological needs of the child this area based on early child care,

psychology of the childhood, and theories of child development etc.

In nursery section, the children between ages of three to four years are enrolled each year, starting from September. The nursery section is provided with necessary amenities and its mode of activities is subject to participation and innovation of Home Economics.

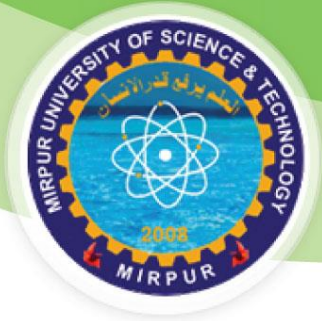
### **Home management & interior designing**

This field based on the management of money, budgeting, home furnishing and interior designing on commercial level.

### **Art & Design:**

In this field, it covers the applied interior designing, block printing, painting, pottery painting, sculpture etc

### **Subject based practical work:**



- Residence lab (15 days of stay in the residence lab, interior Designing)
- Textile Designing annual display
- Art Design Exhibitions and annual display
- Visits of Food & Nutrition to Hospitals and community nutrition program.
- Observation in Nursery Section through selected techniques

### **Nursery Section:**

In nursery section, the children between ages of three to four years are enrolled each year, starting from September. The nursery section is provided with necessary amenities and its mode of activities is subject to participation and innovation of Home Economics.

### **Multiple Events & Visits regarding subjects**

Department of **Home Economics** has arranged an annual food gala event this year (**2020**) which has been successful with the help of organizers and students of the department. Many other types of events and competitions are also organized by other disciplines very successfully e.g: An art competition under Art& Design discipline, Clothing & Textile etc. Different visits for students are arranged by department to help the students for better understanding. e.g.: A visit to Nafees Bakers & Sweets, Moreish, Chaaye-Khana (Jhelum) &Subway.





### Future Plan:

- The department plans to start different diploma and certificates courses of varying duration of different disciplines of Home Economics.
- Establishment of display center
- Up gradation of physical infrastructure of classrooms, labs and nursery.

### Admission Requirement

#### 1. For BS Programs

- 2nd After HSSC at least Division
- Entry test conducted by the University

#### 2. For M.Sc. Programs

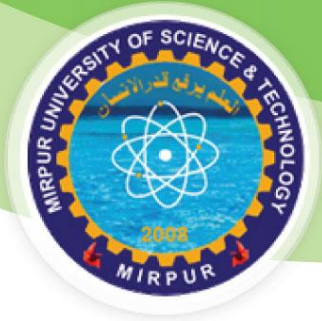
- Graduation at least 2nd Division (B.Sc. Home Economics) from any HEC recognized university.
- Graduation in Home Economics from HEC recognized university.
- Entry test conducted by the University



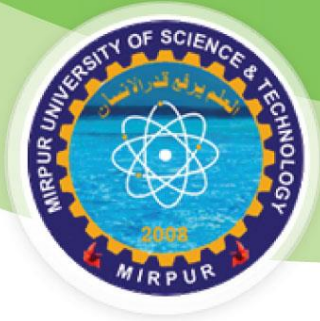


## Scheme of Study (BS 4 years degree program After HSSC)

<b>SEMESTER 1<sup>st</sup> (Total Credit Hours=18)</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lec.Cr.</b>	<b>Lab.Cr.</b>	<b>Cr.Hrs.</b>
HE-311	English-I	03	00	03
HE-312	Pakistan Studies	02	00	02
HE-313	Math/Stat-1	03	00	03
HE4-314	General-I Chemistry	02	00	02
HEF-315	Foundation-1 Introduction To Home Economics	02	00	02
HEF-316	Foundation-2 Introduction To Arts & Design I	02	01	03
HEF-317	Foundation-3 Clothing & Consumer Education	02	01	03
<b>SEMESTER 2<sup>nd</sup> (Total Credit Hours=18)</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lec.Cr.</b>	<b>Lab.Cr.</b>	<b>Cr.Hrs.</b>
HE-321	English-II	03	00	03
HE-322	Islamic Studies / Ethics	02	00	02
HE-323	Math / Stat – II / Univ. Optional	03	00	03
HEG-324	General-Ii Physics	02	00	02
HEG-325	General-Iii Psychology	02	00	02
HEF-326	Foundation-4 introduction To Arts & Design II	02	01	03
HEF-327	Foundation-5Advanced Clothing	02	01	03

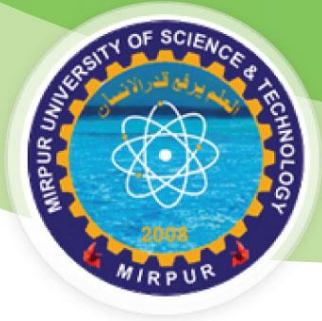


<b>SEMESTER 3<sup>rd</sup> (Total Credit Hours=18)</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lec.Cr.</b>	<b>Lab.Cr.</b>	<b>Cr.Hrs.</b>
HE-431	English-III	03	00	03
HE-432	introduction To Computer	02	01	03
HEG-433	GENERAL-IV Fundamentals Of Economics	02	01	03
HEF-434	Foundation-6 Life Span Development	02	01	03
HEF-435	Foundation-7 Home Mgt & Housing 1	02	01	03
HEF-436	Foundation-8 Fundamentals Of F&N	02	01	03
<b>SEMESTER 4<sup>th</sup> (Total Credit Hours=17)</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lec.Cr.</b>	<b>Lab.Cr.</b>	<b>Cr.Hrs.</b>
HE-441	English-IV /Arabic	03	00	03
HEG-442	GENERAL-V Biochemistry	02	01	03
HEG-443	GENERAL-VI Sociology	02	00	02
HEG-444	Foundation-9 Family & Community Development	02	01	03
HEF-445	Foundation-10 Home Management & Housing-II	02	01	03
HEF-446	Foundation-11 Meal Management	02	01	03



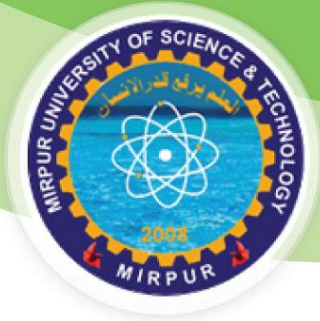
## SCHEME OF STUDIES FOR 5-8 SEMESTERS ACCORDING TO AREA OF SPECIALIZATION

ART & DESIGN		
SEMESTER FIVE		
Course Code	Course Title	Credit Hrs.
FOUNDATION-11	Home Economics Education, Administration & Supervision	03
MAJOR-I	Applied Art-I	03
MAJOR-II	Art Education-I	03
MAJOR-III	Essential of Interior Design-I	03
MAJOR-IV	Commercial Art	03
<b>Total</b>		<b>15</b>
SEMESTER SIX		
Course Code	Course Title	Credit Hrs.
FOUNDATION-13	Methods of Research in Home Economics	03
MAJOR-V	Applied Art-II	03
MAJOR-VI	Art Education-II	03
MAJOR-VII	Essential of Interior Design-II	03
MAJOR-VIII	Islamic Art	03
<b>Total</b>		<b>15</b>



<b>SEMESTER SEVEN</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
MAJOR-XI	INTERNSHIP/ Research Project	04
MAJOR-X	Art Appreciation-I	03
MAJOR-XI	Drawing & Painting	03
ELECTIVE-I	Interior Design/ The Craft of Hand Weaving/ Graphic Communication-I	03
ELECTIVE-II	Hand Built Pottery/ Textile Designing-I/ Methods of Art Education	03
<b>Total</b>		<b>16</b>
<b>SEMESTER EIGHT</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
MAJOR-XII	Research Project	04
MAJOR-XIII	Art Appreciation-II	03
MAJOR-XIV	Painting & Print Making	03
ELECTIVE-III	Weaving/ Methods of Art Education-II/ Interior Design-II	03
ELECTIVE-IV	Graphic Communication-II/ Ceramics/ Textile Design & Printing/ Internship	03
<b>Total</b>		<b>16</b>



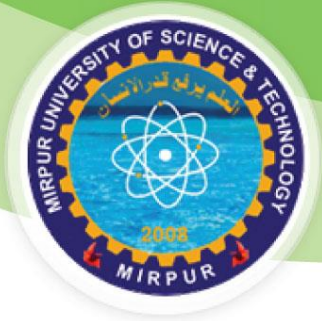


## SCHEME OF STUDIES FOR 5-8 SEMESTERS ACCORDING TO AREA OF SPECIALIZATION

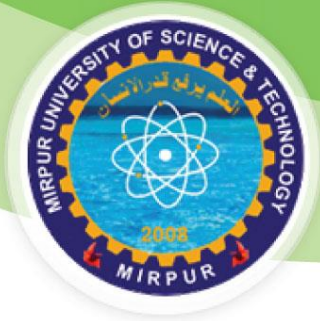
FOOD & NUTRITION		
SEMESTER FIVE		
Course Code	Course Title	Credit Hrs.
FOUNDATION-11	Home Economics Education, Administration & Supervision	03
MAJOR-I	Food Preservation	03
MAJOR-II	Experimental Foods	03
MAJOR-III	Advanced Nutrition	03
MAJOR-IV	Dietetics	03
<b>Total</b>		<b>15</b>
SEMESTER SIX		
Course Code	Course Title	Credit Hrs.
FOUNDATION-13	Methods of Research in Home Economics	03
MAJOR-V	Physiological Aspects of Nutrition	03
MAJOR-VI	Nutritional Biochemistry 1	03
MAJOR-VII	Food Microbiology	03
MAJOR-VIII	Community Nutrition	03
<b>Total</b>		<b>15</b>



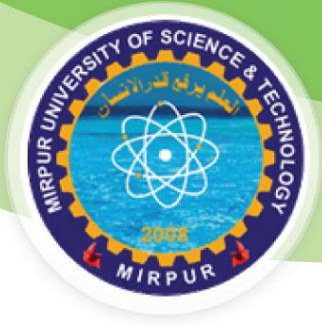
<b>SEMESTER SEVEN</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
MAJOR-XI	INTERNSHIP (hospital/community/institution)	04
MAJOR-X	Nutritional Biochemistry 2	03
MAJOR-XI	Food Technology	03
ELECTIVE-Ia	Institutional Management/ ELECTIVE-Ib Food Analysis	03
ELECTIVE-IIa	Life Cycle Nutrition/ ELECTIVE-IIb Nutritional Management & in Disasters	03
<b>Total</b>		<b>16</b>
<b>SEMESTER EIGHT</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
MAJOR-XII	Research Project	04
MAJOR-XIII	Applied Nutrition	03
MAJOR-XIV	Nutrition Health & Prevention	03
ELECTIVE-III	Sports Nutrition	03
ELECTIVE-IV	Food Allergies	03
<b>Total</b>		<b>16</b>



<b>TEXTILE &amp; CLOTHING</b>		
<b>SEMESTER FIVE</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
FOUNDATION-11	Home Economics Education, Administration & Supervision	03
MAJOR-I	Advanced Textile	03
MAJOR-II	Pattern Making	03
MAJOR-III	Fashion Designing & Illustration	03
MAJOR-IV	Textile Chemistry-1	03
<b>Total</b>		<b>15</b>
<b>SEMESTER SIX</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
FOUNDATION-13	Methods of Research in Home Economics	03
MAJOR-V	Textiles Computer aided Design	03
MAJOR-VI	Textile Chemistry 2	03
MAJOR-VII	Textile Testing	03
MAJOR-VIII	Textiles Dyeing & Printing	03
<b>Total</b>		<b>15</b>



<b>SEMESTER SEVEN</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
MAJOR-XI	INTERNSHIP / Research Project	04
MAJOR-X	Art of Draping	03
MAJOR-XI	EXPERIMENTAL Textile	03
ELECTIVE-Ia	Textile & Clothing Industrial Management / ELECTIVE-Ib Decorative Fabrics	03
ELECTIVE-IIa	Entrepreneurship / b) Historic Costume/ c) Economic, Social & Psychological Aspects of Clothing & Textile	03
<b>Total</b>		<b>16</b>
<b>SEMESTER EIGHT</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
MAJOR-XII	Research Project	04
MAJOR-XIII	Applied Textile Designing	03
MAJOR-XIV	Dress Designing through Draping	03
ELECTIVE-III	a) Marketing & Merchandizing b) Structural Textile Designing c) Fashion Photography	03
ELECTIVE-IV	a) Fashion & Boutique Management b) Functional Designing For Special People	03
<b>Total</b>		<b>16</b>



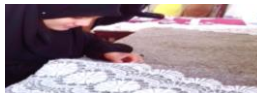
## STUDENTS' MESSAGES

It's a great honor for me to study in the best educational institute of AJK. This department gave me the finest knowledge in the field of home economics by emphasizing on the practical and research work specifically nutritional education. MUST is one of the best universities of Pakistan because it is not providing only quality education but also enabling you to get a beautiful experience of life. The grooming level here is much more than many other universities in Pakistan. They help you polish your personality not only professionally but also personally



Joining MUST was a pleasant decision .Being a part of Department of Home Economics is the most enjoyable and knowledge full experience as courses are well designed & organized. The ways my teachers have polished my hidden talents are spectacular that really helped me for Borden my vision & exposure.



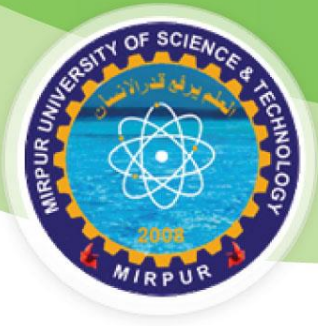




# DEPARTMENT OF INTERNATIONAL RELATIONS

## Degree Programs Offered

BS International Relations



### **Coordinator:**

Taimoor Akbar Chaudhury

Tel: +92-5828-961079

E-mail: [chairperson.ir@must.edu.pk](mailto:chairperson.ir@must.edu.pk)

### **Message from Coordinator:**

when the Mirpur University of Science and Technology (MUST), Mirpur AJK was found in 2008, its moto was "Wisdom and Virtue", by treading on the path of "Wisdom and Virtue", MUST has successfully develop future leaders with a high level of specialized theoretical and practical knowledge, as well as understanding and empathy toward the world's variety of cultures, enhancing their ability to contribute to the global society.

The Department of International Relations was established in 2018, and since then the team of the department is working very hard to add to the success of the MUST by imparting quality knowledge.

I greatly appreciate the great support by the Vice Chancellor, Dean Faculty of Social Sciences & Humanities and the local community of the AJ&K since the establishment of the Department of International Relations as the first BS level degree program in International Relations in the State of Azad Jammu and Kashmir.

In the 2 years that have passed, more than 97 students have been admitted into this Department from all over Azad Jammu and Kashmir and other provinces of Pakistan. On our campus, we have built a unique and global intellectual community, unsurpassed in the world.

We, at the Department of International Relations, MUST are working hard so that we may build leaders with the talent, skill and sense of duty to work and researching for the benefit of the world.





## Faculty Members

### **Taimoor Akbar Chaudhury**

**Designation:** Coordinator/Lecturer

**Qualification:** M.Phil.

**Area of interest:** Research Methodology, Middle Eastern Politics, Gender Issues, Disaster Diplomacy, and Governance & Public Policy

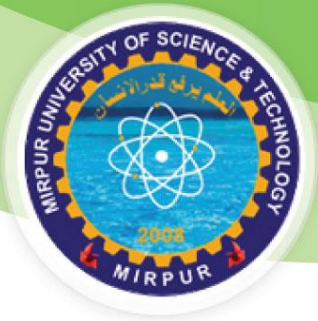
**E-mail:** [chairperson.ir@must.edu.pk](mailto:chairperson.ir@must.edu.pk)

### **Dr. Sohaib Khaliq**

**Designation:** Assistant Professor

**Qualification:** PhD

**Area of interest:** International Politics, Comparative Politics, Democratization, Development, Religion, Political Islam, Education Policy, Foreign Policy, South Asia, Middle East



## **B.S International Relations**

BS (International Relations) would be a degree that would give students an insight into a broad range of subjects related to international relations, while developing their expertise and capacity into critical research. This program is designed in line with the policy of Higher Education Commission of Pakistan for the bachelor's four years degree.

The program is comprised of 136 credit hours that are to be completed in a total of eight semesters. There will be 10 Compulsory Courses (HEC Requirement of Minimum 9 Courses of 25 Cr. Hrs), 7 Interdisciplinary General Courses, 13 Foundation Courses (HEC Requirement of Minimum 10-11 Courses of 30-33 Cr. Hrs), 14 Major Courses, and 4 Major Elective Courses.

### **PROGRAM EDUCATIONAL OBJECTIVES (PEOS)**

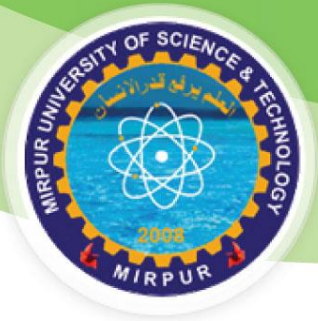
Department of International Relations will enhance its national and international stature by achieving a number of specific

academic objectives. Among the **strategic goals** articulated for the immediate future, the Department will:

The primary objective of the BS 4-Year program in International Relations is to acquaint the students with the broader concepts and theories of the discipline as well as inducing a broader comprehension and instilling an analytical approach towards political history of the world, contemporary conflicts, domestic politics and future global trends.

While designing the syllabus for the subjects, following objectives were kept in minds:

It is expected that the graduates of this programme shall have a sound grip on the subject. To achieve this objective an extensive and intensive program of BS (4 years) in International Relations is developed. Second, an interdisciplinary approach is adopted while designing the structure of the program. It will help the students to interact



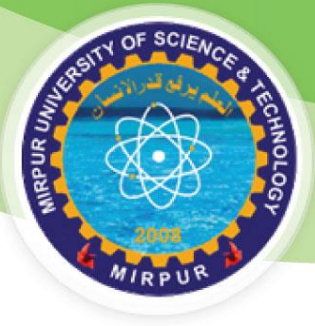
meaningfully with other branches of knowledge so as to ensure a better understanding of the state and society. Furthermore, the significant multidisciplinary nature of the discipline makes the discourses cosmopolitan and equally challenging.

Third, equipping the students with the best available research tools and techniques is one of the cardinal objectives of this program. The possible outcome is a class of graduates having sound analytical and critical aptitude, and to ensure their ability to evaluate the phenomena at hand more succinctly.

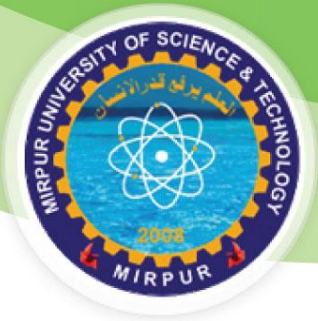
Fourth, our job is not to develop a generation of theorists only. Theory and practice go hand in hand. Therefore, the structure of the program is conceived and developed to ensure that the graduates are able to establish and develop a powerful link between theory and practice.

### **PROGRAM LEARNING OBJECTIVES (PLOS)**

- Describe the dominant theoretical approaches to international relations.
- Use their knowledge of the dominant theoretical approaches to international relations to interpret the behavior of international actors.
- Select methods of analysis appropriate to research in the student's chosen concentration and apply at least one of these methods to a research question in international relations.
- Integrate multiple disciplinary approaches to the study of international relations.
- Write grammatically correct and logically organized essays and papers



**Group photo of students Of IR Department**



### Admission Criterion:

FA/FSc or equivalent with at least 45% marks.

### Degree Requirements:

- |  |                                |
|--|--------------------------------|
| ➤ Degree Title: BS (04 Year) International Relations | ➤ Duration = 04 years          |
| ➤ Launched in Fall 2018                              | ➤ Semester System; 8 semesters |
| ➤ Morning program on regular basis                   | ➤ Credit hours = 136           |
| ➤ Admissions are done once in an academic year       | ➤ Score criteria = CGPA        |
|  | ➤ Session Fall                 |





## Scheme of Study: BS Program

<b>YEAR ONE - SEMESTER ONE</b>		
Course Code	Course Title	Credit Hrs.
ENG-1107	ENGLISH-I	3+0
PS-1117	PAKISTAN STUDIES	2+0
MAT-1115	MATHEMATICS	3+0
IR-1101	INTRODUCTION TO INTERNATIONAL RELATIONS (F-I)	3+0
IR-11__	(GENERAL-I)	3+0
IR-1102	INTRODUCTION TO POLITICAL SCIENCE	2+0
<b>Total</b>		<b>16</b>
<b>YEAR ONE – SEMESTER-TWO</b>		
Course Code	Course Title	Credit Hrs.
ENG-1207	ENGLISH-II	3+0
ISL-1212	ISLAMIC STUDIES	2+0
STA-1220	STATISTICS	3+0
IR-12__	(GENERAL-II)	3+0
IR-12__	(GENERAL-III)	2+0
IR-1203	APPROACHES AND THEORIES OF INTERNATIONAL RELATIONS (F-III)	3+0
<b>Total</b>		<b>16</b>



<b>YEAR TWO - SEMESTER THREE</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
ENG-2107	ENGLISH-III	3+0
COM-2105	INTRODUCTION TO COMPUTER SKILLS	3+0
IR-21__	GENERAL-IV	3+0
IR-21__	GENERAL-V	3+0
IR-2104	GLOBALIZATION AND INTERNATIONAL RELATIONS (F-IV)	3+0
<b>Total</b>		<b>15</b>
<b>YEAR TWO - SEMESTER FOUR</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
ARA-2201	INTERNATIONAL LANGUAGE	3+0
IR-22__	GENERAL-VI	3+0
IR-22__	GENERAL-VII	3+0
IR-2205	INTERNATIONAL RELATIONS: 1648-1945 (F V)	3+0
IR-2206	GEO-POLITICAL STRUCTURE OF THE WORLD (F-VI)	3+0
IR-2207	DYNAMICS OF KASHMIR CONFLICT	3+0
<b>Total</b>		<b>18</b>



<b>YEAR THREE - SEMESTER FIVE</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
IR-3108	INTERNATIONAL RELATIONS: 1945-2000 (F-VII)	3+0
IR-3109	PUBLIC INTERNATIONAL LAW-I (F-VIII)	3+0
IR-3110	REGIONAL AND INTERNATIONAL ORGANIZATIONS (F-IX)	3+0
IR-3111	FOREIGN POLICY ANALYSIS (M-I)	3+0
IR-3112	INTERNATIONAL POLITICAL ECONOMY (M-II)	3+0
IR-3108	INTERNATIONAL RELATIONS: 1945-2000 (F-VII)	3+0
<b>Total</b>		<b>18</b>
<b>YEAR THREE - SEMESTER SIX</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
IR-3213	RESEARCH METHODOLOGY-I (F-X)	3+0
IR-3214	PUBLIC INTERNATIONAL LAW-II (F-XI)	3+0
IR-3215	FOREIGN POLICY OF PAKISTAN (M-III)	3+0
IR-3216	DEFENCE AND STRATEGIC STUDIES (M-IV)	3+0
IR-3217	DIPLOMACY (M-V)	3+0
IR-3218	CONFLICT MANAGEMENT AND RESOLUTION (M-VI)	3+0
<b>Total</b>		<b>18</b>





<b>YEAR FOUR - SEMESTER SEVEN</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
IR-4119	COMPARATIVE AND DEVELOPMENTAL POLITICS (M-VII)	3+0
IR-4120	COMPARATIVE FOREIGN POLICY OF MAJOR POWERS: US, RUSSIA, CHINA (M-VIII)	3+0
IR-4121	INTERNATIONAL RELATIONS IN THE NEW MILLENNIUM (M-IX)	3+0
IR-41__	ELECTIVE-I	3+0
IR-41__	ELECTIVE-II	3+0
IR-4127 OR IR-4122	RESEARCH THESIS (M-XIV) OR HUMAN RIGHTS IN INTERNATIONAL RELATIONS (M-X)	3+0
<b>Total</b>		<b>18</b>
<b>YEAR FOUR - SEMESTER EIGHT</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
IR-4127 OR IR-4223	RESEARCH THESIS (M-XIV) OR INTERNATIONAL POLITICS OF ENVIRONMENT (M-XI)	3+0
IR-4224	ARMS CONTROL AND DISARMAMENT (M-XII)	3+0
IR-42__	ELECTIVE-III	3+0
IR-42__	ELECTIVE-IV	3+0
IR-4225	POLITICS OF PAKISTAN (M-XIII)	3+0
IR-4226	PEACE STUDIES (M-XIV)	3+0
<b>Total</b>		<b>18</b>

**Note:** Any of these (Optional)\* courses shall be offered subject to the availability of expert.

**TOTAL: 136**



## List of Elective Courses (With breadth and depth)

Following is the list of elective courses to be offered by the concerned department. The contents of the course(s) as well as the core and the suggested books will be pointed out by the faculty at the time, a course is offered.

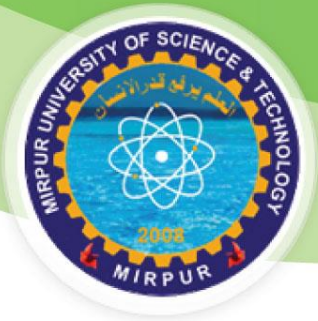
### A. Issues

- |   |  |
|---|--|
| 1. Research Report (Not permissible for those who will opt for Thesis)  | 18. International Relations in Islam                 |
| 2. Major Issues in International Relations                              | 19. Non-state Actors in International Relations      |
| 3. Comparative Political Systems of UK, US, Russia, and China (Any two) | 20. Media and International Relations                |
| 4. Foreign and Security Policies of European Union                      | 21. Gender and International Relations               |
| 5. Emerging Regional and World Orders                                   | 22. International Humanitarian Law                   |
| 6. Research Methodology-II  | 23. United Nations: Reforms and Restructuring        |
| 7. Modernization and Democratization in the Muslim World                | 24. OIC: Reforms and Restructuring                   |
| 8. Nuclear Non-proliferation  | 25. Enlightened Moderation and the Muslim World      |
| 9. Pakistan Defense and Security Policy                                 | 26. Cyber Wars                                       |
| 10. Nuclearization of South Asia  | 27. MNCs and NGOs in International Relations         |
| 11. Kinetic and Non-Kinetic Warfare                                     | 28. National Liberation Movements and Decolonization |
| 12. Politics of Indian Ocean  | 29. Ethnic Conflicts in Global Perspective           |
| 13. Use of Force in International Law                                   | 30. Religion, Ideology and International Relations   |
| 14. Foreign Policy of India   | 31. Science, Technology and International Relations  |
| 15. Contemporary Political Ideologies                                   | 32. Ethics and Morality in International Relations   |
| 16. International Migration and Politics                                | 33. Power Politics and Beyond                        |
| 17. Terrorism and Counter-terrorism                                     | 34. International Economic Groups                    |



## **B. Area Studies**

- |   |  |
|---|--|
| <ol style="list-style-type: none"><li>1. South Asia</li><li>2. South East Asia</li><li>3. Asia-Pacific</li><li>4. East Asia</li><li>5. Central Asia and Caucasus</li><li>6. Western Europe</li><li>7. Eastern Europe</li><li>8. North Europe: Scandinavian-Nordic Countries</li></ol> | <ol style="list-style-type: none"><li>9. Latin-Central America</li><li>10. South America</li><li>11. North America</li><li>12. Russian Federation and Eurasia</li><li>13. Middle East and North Africa (MENA)</li><li>14. Southern Africa</li><li>15. Central Africa</li></ol> |
|---|--|



## STUDENTS' MESSAGES

I am Huzaiifa Rasheed from IR department. To become a foreign officer was my dream and MUST proved to be the best. I have experienced that MUST is one of the most prestigious institute of Azad Kashmir, and one of the progressing universities of Pakistan. The university provides highly qualified teachers which are very cooperative. The teachers motivate me in achieving my goal. MUST is the best choice to build a bright future. The instate in particular cultivates a high standard of learning.



I am Hira Maroof from International relations department. To become a Civil Servant is my dream for which I choose MUST which is one of the best university of Azad Kashmir. It is no doubt that this University has many qualified teachers which are giving their best in educating us. They all are very cooperative, and this university has everything that motivates me day by day to pursue my dream.



I am Taqwa Waseem and a student of International relations currently in the second year. To become an ambassador of Pakistan I must have strong knowledge about economics, political science, history and globalization. MUST is one of the progressing universities of Pakistan which provides me with the right study and practice to chase my dream. Teachers of MUST are very dedicated to teaching. Their ability to develop relationships with students and engaging them in learning is proficient. They have motivated me in achieving my goals.



# INSTITUTE OF ISLAMIC STUDIES

The background features a photograph of a mosque with a large golden dome and white facade, situated on a pier over water. The sky is a vibrant sunset of orange and red. The image is overlaid with several semi-transparent green geometric shapes, including triangles and parallelograms, creating a modern, layered effect.

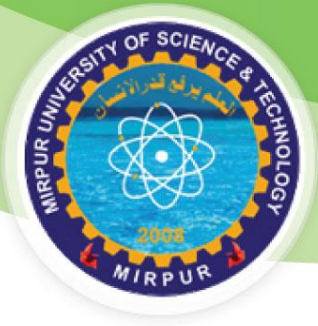
## Degree Programs Offered

BS Islamic Studies

BS Arabic

MA Islamic Studies

MPhil in Islamic Studies



**Director:**

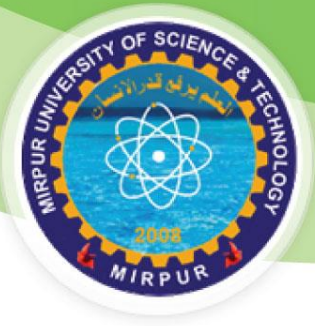
**Dr. Sajjad Ahmed**

**Tel:** +92-5827-961021

**Email:** [director.is@must.edu.pk](mailto:director.is@must.edu.pk)

**Message from Director:**

Praise be to Allah who has guided us to the blessing of Islam and peace be upon our Prophet Muhammad to whom Allah has sent to teach the human being the Quran and wisdom, and peace be upon his righteous family and companions. It gives me great pleasure to extend a very warm welcome to all of you on behalf of Faculty and Staff, to the Institute of Islamic Studies (IIS) at MUST Mirpur AJK. (IIS) has a 40 - year long history of dedication, spreading knowledge, and sustaining Islamic teachings. (IIS) is the constituent body of the Mirpur University of Science and Technology. It has been working under the banner of UAJK since 1980 (under MUST since 2009). It has produced hundreds of graduates who are serving the nation in different capacities. Where we continuously break new ground in the world of Islamic studies in both academia and research. We believe that clarifying the spirit of our Islamic heritage and its ability to serve all of humanity through its dynamic contributions to all aspects of life is a critical mission in today's world. The work ethics in this department is very simple: We respect and care for each other. Students, Faculties and Staffs are connected like a family and we support each other in our studies and research and encourage each other to succeed. I welcome you to be a part of this family in this new academic year. I wish each of you a great success. If you are not yet a member of our IIS family, I encourage you to become a part of it.



**Sitting:** Mr. Nasir Ud Din (Lecturer), Dr. Tahir Aslam (Assistant Prof.), Dr. Sajjad Ahmed (Director), Dr. Asghar Ali Khan (Assistant Prof.), Mr. M. Imran Khan (Lecturer)

**Standing:** Ms. Rashida Fatima (Lecturer), Ms. Ruqayya Akhtar (Visiting Faculty)



### **Dr. Sajjad Ahmed**

**Designation:** Assistant Professor

**Qualification:** PhD

**Area of interest:** Hadith & Seerah

**E-mail:** [director.is@must.edu.pk](mailto:director.is@must.edu.pk)

### **Dr. Asghar Ali khan**

**Designation:** Assistant Professor

**Qualification:** PhD

**Area of interest:** Quranic Science

**e-mail Contact:** [asghar.iis@must.edu.pk](mailto:asghar.iis@must.edu.pk)

### **Mr. Nasir Ud Din**

**Designation:** Lecturer

**Qualification:** MPhil

**Area of interest:** Comparative Religions

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### **Ms. Rashida Fatima**

**Designation:** Lecturer.

**Qualification:** MPhil

**Area of interest:** Arabic language and literature

**E-mail:** [rashida.iis@must.edu.pk](mailto:rashida.iis@must.edu.pk)

### **Ms. Ruqayyah Akhter**

**Designation:** Visiting Lecturer

**Qualification:** MPhil

**Area of interest:** Arabic language and literature

**E-mail:** [ruqyah786@gmail.com](mailto:ruqyah786@gmail.com)

## **Faculty Members**

### **Dr. Tahir Aslam**

**Designation:** Assistant Professor

**Qualification:** PhD

**Area of interest:** Arabic language and literature

**e-mail Contact:** [tahir.iis@must.edu.pk](mailto:tahir.iis@must.edu.pk)

### **Mr. Muhammad Imran khan**

**Designation:** Lecturer

**Qualification:** MPhil

**Area of interest:** Fiqh

**E-mail:** [Imran.isl@must.edu.pk](mailto:Imran.isl@must.edu.pk)

### **Ms. Summia Aziz**

**Designation:** Lecturer.

**Qualification:** MPhil

**Area of interest:** Arabic language

**E-mail:** [samia.aziz@must.edu.pk](mailto:samia.aziz@must.edu.pk)

### **Ms. Naila Ajmal**

**Designation:** Senior Research officer.

**Qualification:** MPhil

**Area of interest:** Seerah of the Holy Prophet (PBUH)

**E-mail:** [naila.isl@must.edu.pk](mailto:naila.isl@must.edu.pk)

### **Ms. Sadaf Sufian**

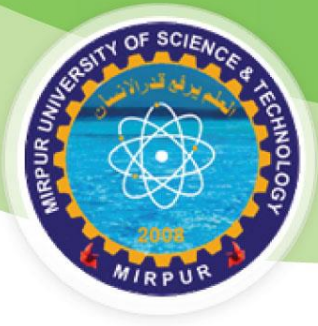
**Designation:** Visiting Lecturer

**Qualification:** MPhil

**Area of interest:** Quranic Sciences

**E-mail:** [sadaf.sufian21@gmail.com](mailto:sadaf.sufian21@gmail.com)





## **BS in Islamic Studies**

### **Mission Statement Of IIS**

Uniting peoples throughout the AJ&K on the plat form of Shari'ah. Sharing towards making of a knowledgeable, tolerant, prosperous and refined society under the banner of Quran and Sunnah in AJ&K according to vision of MUST MIRPUR.

### **Objectives of IIS**

- To produce competent scholars who are well versed in basic Islamic disciplines and capable of guiding the Muslim Ummah, conversant with today's changes, and able to meet the requirements of the future.
- To Provide in depth knowledge of basic Islamic Sciences Such as Quran & Hadith, Fiqh, Islamic History, Islamic thought, Seerah & Dawah.
- To Provide Skills of Islamic Education with an exposure to modern scientific, technological and social development.

### **Mission Statement for BS Islamic Studies**

To polish and groom by providing Islamic education and training to the new generation to become an useful group of the society by studying the diverse fields of Islamic Studies. The students are encouraged to attain quality education.

### **Program objectives**

- To produce graduates with high conceptual background.
- Disseminating the knowledge to students from the perspective of different Islamic school of thoughts.
- Developing analytical skills to comprehend fiqh, hadith, and tafseer of Quran.
- Enabling students to become good and vibrant Islamic scholar in order to serve Islam and its sublime purpose by imparting knowledge of Islamic thoughts.
- Contributing to right Islamic thinking.
- Preparing students for Islamic education at different levels.

**Admission Criterion:**

F. Sc/ FA/ A levels or equivalent at least second division or as per university rules.

**Duration:**

8-12 Semester

**Scholarships Offered:**

HBL Foundation Scholarship Application  
MUST Need Base Scholarship  
HEC Need Base Scholarship  
HEC Ehsaas Scholarship

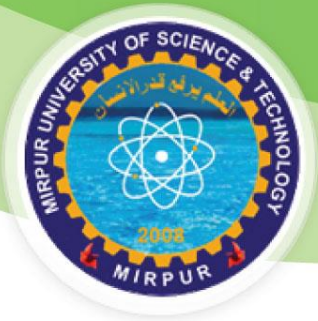


## Scheme of Study (Fall/2020)

Compulsory Requirements (the student has no choice)			General Courses to be chosen from other departments			Basic Courses for those having Khassah certificate from one of the five Madaris Boards (Tanzeemat al- Wifaq) recognized by the HEC		
9 courses			7-8 courses			3 courses		
Subject	Cr.		Subject	Cr.		Subject		Cr.
<b>1</b>	English I	3	<b>1</b>	Economics	3	<b>1</b>	Intermediate English-1	NC
<b>2</b>	English II	3	<b>2</b>	World History/Urdu	3	<b>2</b>	Intermediate English-2	NC
<b>3</b>	English III	3	<b>3</b>	International Relations	3	<b>3</b>	Intermediate Pak Studies	NC
<b>4</b>	English IV/ Uni. Optional*	3	<b>4</b>	General Science/ introduction to Management	3			
<b>5</b>	Pakistan studies	2	<b>5</b>	Sociology	3			
<b>6</b>	Islamic studies/ethics	2	<b>6</b>	Mass Communication	3			
<b>7</b>	Math/Stat-I	3	<b>7</b>	Logic/Computer	3			
<b>8</b>	Math/Stat-II/Uni. optional**	3	<b>8</b>	Psychology OR any other subject from the list of General subjects	3			
<b>9</b>	Introduction to Computer	3						
		25			24			NC

\* University/Department has the option to recommend any other Course in lieu of English IV

\*\*University/Department may recommend any other course in lieu of Mathematics



## Template for 4-Years BS in Islamic Studies Program

Discipline Specific Foundation Courses			Major Courses including Research Project/ Internship			Elective Courses within the Major		
9-10 Courses			11-13 Courses			4 Courses		
30-33 Credit hours			36-42 Credit hours			12 Credit Hours		
Subject		Cr.	Subject		Cr.	Subject		Cr.
1.	Introduction to the Selected topics of The Holy Quran	3	1.	Textual study of al-Quran-I	3	1.	Methods of Research	3
2.	Arabic Language	3	2.	Textual study of al-Quran-II	3	2.	(فقه الماليات)	3
3.	Uloom-al-Quran	3	3.	Textual study of Hadith-I	3	3.	Criminal Law (فقه الجنائيات)	3
4.	History & Compilation of Hadith	3	4.	Uloom-al-Hadith	3	4.	Islamic Morals (علم الأخلاق)	3
5.	Arabic Language- II	3	5.	Textual study of Muslim Family Laws	3	5.	Ilm al Kalam (علم الكلام)	3
6.	History of Fiqh (Islamic Law)	3	6.	The Ethics of Disagreement in Islam أدب الاختلاف	3	6.	Objectives of Shariah (مقاصد الشريعة)	3
7.	Study of Serah of Holy Prophet (PBUH)	3	7.	Introduction to World Religions	3	7.	Study of Selected Commentaries of Hadith (كتب حديث كى منتخب شروح كا مطالعه)	3
8.	History of Tafsir	3	8.	Al-Dawah-wal Irshad	3	8.	Study of Tasawuf مطالعه تصوف	3
9.	Study of Islamic Fiqh-I (العبادات)	3	9.	Textual study of al-Quran-III	2	9.	Islam & Science	3
10.	Usool al-Fiqh	3	10.	Cultural History of Islam	3			
11.	Arabic Through Quranic Text	3	11.	Islamic Economics	3			
12.	Intermediate English-1	NC	12.	Islam & Modern Political Thought	2			
13.	Intermediate English-2	NC	13.	Islam & Modern Social Thought	2			
14.	Intermediate Pak Studies	NC	14.	Textual Study of al-Fiqh al Akbar	2			
			15.	Thesis/Research Project	6			
<b>Total Credit Hours</b>		<b>33</b>	<b>Total Credit Hours</b>		<b>44</b>	<b>Total Credit Hours</b>		<b>18</b>

## MAP FOR 4 YEAR INTEGRATED PROGRAM OF BS IN ISLAMIC STUDIES



Semester First	Name of Subject	Credits
	Intermediate English I	NC
ENG-3107	English I	3
PS-3117	Pakistan Studies	2
MAT-3115	Mathimatics	3
IR-3110	International Relations (General Course –I)	3
MC-3114	Mass Communication (General Course –II)	3
ISL-3101	Introduction of Topics of Holy Quran.(F-1)	3
		<b>17</b>
<b>Second</b>		
	Intermediate English II	NC
ENG-3207	English-II	3
ISL-3201	Islamic Studies/Ethics (Compulsory)	3
STA-3220	Statistics (General Course – III)	3
COM-3205	Computer (General Course – IV)	3
ITM-3211	Introduction to Management (General Course –IV)	3
ISL-3202	Arabic Language – I (F-2)	3
		<b>18</b>
<b>Third</b>		
	Intermediate Pak Study	NC
ENG-4107	English-III	3
ISL-4101	Computer Applications in Islamic Studies	3
ECO-4106	Economics (General-V)	3
URD-4122	Urdu (General-VI)	3
ISL-4102	'Uloom-al-Quran (F-3)	3
		<b>15</b>
<b>Fourth:</b>		
ENG-4207	English-IV/University Optional	3



SOC-4221	Sociology (General-VII)	3
PSY-4219	Psychology (General – VIII)	3
ISL-4201	History & Compilation of Hadith (F-4)	3
ISL-4202	Arabic Languages-II (F-5)	3
ISL-4203	History of Fiqh (F-10)	3
		<b>18</b>
<b>Fifth</b>		
ISL-5101	Study of Serah of Holy Prophet (PBUH) (F-7)	3
ISL-5102	History of Tafsir and its Principles (F-8)	3
ISL-5103	Textual Study of al-Quran-I (M-1)	3
ISL-5104	Textual Study of Hadith-1 (M-2)	3
ISL-5105	Study of Islamic Fiqh-I (F-6)	3
		<b>15</b>
<b>Sixth</b>		
	Uloom -al-Hadith (F-9)	3
ISL-5201	Textual Study of Muslim Family Laws (M-3)	3
ISL-5202	Textual Study of al-Quran – II (M-2)	3
ISL-5203	Ethics of Disagreement in Islam (M-6)	3
ISL-5204	Comparative Study of World Religions (M-7)	3
ISL-5205	Textual Study of Fiqh al Akbar (M-14)	2
		<b>17</b>



<b>Seventh</b>		
ISL-6101	Al- Dawah wal Irshād (M-8)	3
ISL-6102	Usool al-Fiqh (F-10)	3
ISL-6103	Methodology of Research in Islamic Studies (E-1)	3
ISL-6104	History of Islamic Culture and Civilization (M-10)	3
ISL-6105	Study of Islamic Fiqh I (فقہ المالیات) (E-2)	3
ISL-6106	Study of Islamic Fiqh II (فقہ الجنایات) (E-3)	3
		<b>18</b>
<b>Eighth</b>		
ISL-6201	Islamic Economics (M-11)	3
ISL-6202	Islamic Morals (E-4)	3
ISL-6203	Philosophy and ilm al-Kalam (E-5)	3
ISL-6204	Thesis/Research Project	6
		<b>15</b>



## BS Arabic

### Mission Statement for BS Arabic

Illumination of Arabic Language & Literature in areas including usage of dictionaries, study of Research Methodologies, Phonetics, Arabic literature (poetry and prose), Rhetoric and criticism. It is expected that the students graduating with this degree will be able to implement / apply the knowledge that they acquire during this program, in their future professional and personal activities.

### Program objectives

- To make the students aware of History of Arab world, its geographical, cultural, political and economic conditions.

- To enable the students to study the works of renowned writers, poets and critics of Arabic language and literature.
- The students are aware of core linguistic concepts of Arabic language.
- To equip the students with the skill of reading, writing and speaking Arabic.
- To enable the students to conduct research on various topics
- To create in the students the capability of translating documents from English to Arabic and vice versa.

### Breakup of BS Arabic

Content	Description	Remarks
5.1 Title of the Degree	BS. Arabic	
5.2 Entrance Requirement	F. Sc/ FA/ A levels or equivalent at least second division or as per university rules	
5.3 Duration of the Program	8-12 Semester	
5.4 Credits (Credit Hours)	Course Work:133 Credits hrs.	
5.5 Evaluation Criteria (Examination)	As per University Rules	
5.6 Approval for the Scheme of Studies	Scheme of Study & Lay Out of the Courses	

### SCHEME OF STUDIES FOR BS (4 YEARS) ARABIC



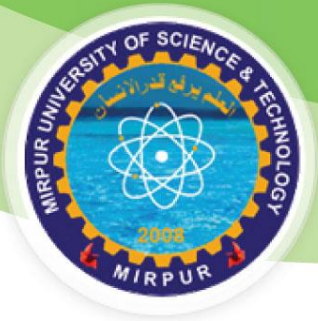


المنهج الدراسي لبرنامج (BS) أربع سنوات في اللغة العربية

1 <sup>st</sup> Semester الفصل الدراسي الأول		
Course Code	Course Title	Credit Hrs.
ENG-3107	English I –I انجليزية I	3
PAK-3117	Pakistan Studies – الدراسات الباكستانية	2
MAT-3115	Math الرياضيات	3
ARA-3111	Arabic Writing Skills – مهارات الكتابة العربية	3
IR-3110	International Relations العلاقات الدولية	3
ARA-3112	Applied Grammar I - I القواعد التطبيقية I	3
MC-3113	Communication skills – مهارات الإتصال	3 Non-Credits Hrs.
<b>Total</b>		<b>17</b>
2 <sup>nd</sup> Semester الفصل الدراسي الثاني		
Course Code	Course Title	Credit Hrs.
ENG-3207	English – II –II انجليزية II	3
ISL-3204	Islamic Studies/ Ethics- الدراسات الإسلامية / الأخلاقيات	2
ARA-3201	Applied Grammar II -II القواعد التطبيقية II	3
ARA-3202	Arabic World/ Muslim Worldالعالم العربي / العالم الإسلامي	3
ARA-3203	History of World/ Islamic Civilization تاريخ العالم/ الحضارة الإسلامية	3
COM-3205	Computer (General course)المدخل الى الحاسوب	3
<b>Total</b>		<b>17</b>
3 <sup>rd</sup> Semester الفصل الدراسي الثالث		



Course Code	Course Title	Credit Hrs.
ENG-4107	English-III III انجليزية	3
COM-4101	Introduction to Computer المدخل الى الحاسوب	3
ARA-4101	Applied Grammar III -III القواعد التطبيقية	3
ARA-4102	Literature Criticism النقد الأدبي	3
ARA-4103	Functional Arabic –II العربية الوظيفية	3
ARA-4104	Prosody – علم العروض	2
ECO-4106	Economicsالاقتصاد	3 Non-Credits Hrs.
<b>Total</b>		<b>17</b>
<b>4<sup>th</sup> Semester – الفصل الدراسي الرابع</b>		
Course Code	Course Title	Credit Hrs.
ENG-4207	English- IV / Education/ Uni. Optional انجليزية IV/ علم التربية/خيار الجامعة	3
ARA-4201	Applied Grammar IV -IV القواعد التطبيقية	3
ARA-4202	I الإنشاء والمحادثة	3
ARA-4203	Arabic Media /الأعلام العربي/ Geography	3
ARA-4204	Functional Arabic II -II العربية الوظيفية	3
SOC-4221	Sociology/علم الاجتماع	3 Non-Credits Hrs.
<b>Total</b>		<b>15</b>

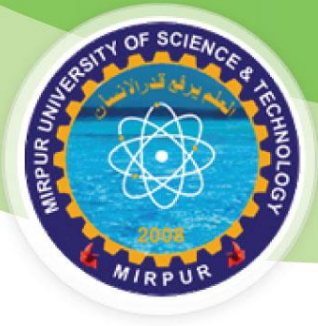


5 <sup>th</sup> Semester – الفصل الدراسي الخامس		
Course Code	Course Title	Credit Hrs.
ARA-5101	Rhetoric (علم البيان)	3
ARA-5102	Arabic Phonology & Tajweed (علم الأصوات والتجويد)	3
ARA-5103	II الإنشاء والمحاضرة II	3
ARA-5104	Religious Literature (Quran) (الأدب الديني (القرآن))	3
ARA-5105	Religious Literature (Hadith) (الأدب الديني (الحديث))	3
ARA-5106	Introduction to Linguistics I - I المدخل الى علم اللغة I	2
<b>Total</b>		<b>17</b>
6 <sup>th</sup> Semester – الفصل الدراسي السادس		
Course Code	Course Title	Credit Hrs.
ARA-5201	Classical Arabic Prose (النثر العربي القديم)	3
ARA-5202	Introduction to Linguistics II - II المدخل الى علم اللغة II	3
ARA-5203	History of Arabic Literature I - I تاريخ الأدب العربي I	3
ARA-5204	Classical Arabic Poetry (الشعر العربي القديم)	3
ARA-5205	Methodology of Research- منهج البحث	3
<b>Total</b>		<b>15</b>



7 <sup>th</sup> Semester – الفصل الدراسي السابع		
Course Code	Course Title	Credit Hrs.
ARA-5101	Rhetoric (علم البيان)	3
ARA-5102	Arabic Phonology & Tajweed (علم الأصوات والتجويد)	3
ARA-5103	II الإنشاء والمحاضرة II	3
ARA-5104	Religious Literature (Quran) (الأدب الديني (القرآن))	3
ARA-5105	Religious Literature (Hadith) (الأدب الديني (الحديث))	3
ARA-5106	Introduction to Linguistics I - I المدخل الى علم اللغة I	2
<b>Total</b>		<b>17</b>
8 <sup>th</sup> Semester – الفصل الدراسي الثامن		
Course Code	Course Title	Credit Hrs.
ARA-6201	Comparative Literature – الأدب المقارن	3
ARA-6202	Arabic Literature in the sub-continent (الأدب العربي في شبه القارة)	3
ARA-6203	Translation –II/II الترجمة	3
ARA-6204	Sources of Language / مصادر اللغة	3
ARA-6205	Computer Applications in Arabic	2
ARA-6206	Thesis/ Project (المشروع/ البحث)	3
<b>Total</b>		<b>17</b>

**Note:** Any of these (Optional)\* courses shall be offered subject to the availability of expert.



## **MA Islamic Studies (2-Years Program)**

### **Mission Statement for MA Islamic Studies**

In order to provide quality education in the field of Islamic studies. The department offers five major areas to its graduates i.e. Quran and its science, Hadith & its science, Islamic Fiqh, Islamic Jurisprudence and Arabic language & literature. The same is essential for the establishment of Islamic Society.

### **Program objectives**

1. To let the students, know the impact of subject on society and moral values.
2. To improve the communication skills and to develop their Islamic literary taste.
3. To create awareness in the students for analyzing the text of Quran & Hadith.

4. Implementation of true Islamic teachings for betterment of the individuals and society
5. To make the students capable of understanding and solving contemporary issues in the light of Islamic teaching.





Description	Remarks		
Title of the Degree	M. A. Islamic Studies		
Entrance Requirement	<ul style="list-style-type: none"> <li>B.A at least second division with Islamic Studies as elective subjects</li> <li>SSC = (Marks Obtained / Total Marks) * 10</li> <li>F.A / F.Sc = ((Marks Obtained / Total Marks) * 10</li> <li>B.A = ((Marks Obtained in Bachelor + Marks Obtained in Subject) / (Total Marks of (Bachelor + Subject)) * 50</li> <li>Entry Test = 30</li> </ul> Total = 100		
Duration of the Program	4-6 Semester		
Credits (Credit Hours)	Course Work : 60 Credits hrs.		
	Thesis : 06 Credits		
	Total Credit Hours: 60 Credits		
Evaluation Criteria (Examination)	<b>Sessional</b>	Quizzes	10%
		Assignments	10%
		Mid-Term	30%
	<b>Terminal</b>	50%	
Approval for the Scheme of Studies	Layout / Framework		
	Semester-Wise Breakdown		
	Detail of Courses		



### Scheme of Studies for MA- English 2-year program

Semester	Code	Course Title	Credit Hrs
1 <sup>st</sup>	ENG-5101	Academic Discourse	3
	ENG-5102	Phonetics and Phonology	3
	ENG-5103	Introduction to Language & Linguistics	3
	ENG-5104	History of English Literature	3
	ENG-5105	Poetry-I	3
2 <sup>nd</sup>	ENG-5201	Sociolinguistics	3
	ENG-5202	TESOL	3
	ENG-5203	Literary Criticism	3
	ENG-5204	Classical Drama	3
	ENG-5205	Victorian English Novels	3
3 <sup>rd</sup>	ENG-6301	Stylistics	3
	ENG-6302	Poetry-II	3
	ENG-6303	Shorter Fiction	3
	ENG-6304	Prose	3
	ENG-6305	Research Methodology	3
	ENG-6306	Semantics	3
4 <sup>th</sup>	ENG-6401	Pragmatics	3
	ENG-6402	Modern Drama	3
	ENG-6403	Modern English Novels	3
	ENG-6404	Introduction to Morphology & Syntax	3
	ENG-6405	Comprehensive Oral Examination	S/U
	ENG-6406	Internship	S/U
	ENG-6407	Thesis (Optional)*	6



## **MPhil in Islamic studies**

### **Mission Statement for MPhil Islamic Studies**

Further strengthening of research at MPhil level addressing the contemporary issues. To polish and groom by providing Islamic education and training to the new generation to become a useful group of the society by studying the diverse fields of Islamic Studies. The students are encouraged to attain quality education

### **Program Objectives**

1. Promotion of true Islamic Knowledge for betterment of the individuals and society.
2. To make the students capable of understanding and solving contemporary issues in the light of Islamic teaching.
3. Establish a cadre of specialists and professionals in different fields of Islamic Studies who can provide effective leadership and conducting quality research in various disciplines of Islamic

Studies.

4. Developing analytical skills to comprehend fiqh, hadith, and tafseer of Quran.
5. comparative study from the perspective of different Islamic school of thoughts.







### Admission Criterion & Selection Criterion:

A candidate seeking admission to M. Phil Islamic Studies program as a whole time / part time student must:

- I) Have passed 16-year schooling with minimal grades
- II) The Candidate are required to pass the admission test/NTS, arranged by the university.
- III) The selected candidates shall have to produce HEC attested degree within a month of their admission.
- IV) A candidate shall be selected on the basis of cumulative merit to be determined from his / her past academic record and achievements in the written tests conducted by the Admission Committee of the Department concerned.

The allocation of marks for determining merit shall be as follows:

Academic Record	55 Marks
Admission Test	35 Marks
Interview	10 Marks

Examination	Semester based	examinations	Annual
	CGPA	Percentage	
16-year	3.0 out of 4.0	50 %	2 <sup>nd</sup> Division

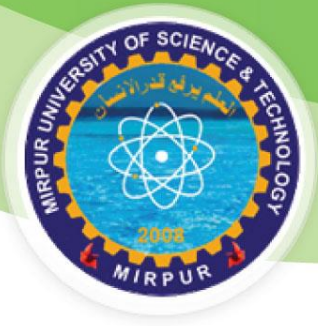
### Duration:

4-6 Semester



## Scheme of Study (M. Phil. Islamic Studies)

FIRST SEMESTER				
Code	Course Title	Lec.Hrs	Lab.Hrs	Credit Hrs
ISL-7101	Uloom-ul-Quran	3	0	3
ISL-7102	Usool-e-Tahqiq	3	0	3
ISL-7103	Tafseer ke Asaleeb-o-Manahij	3	0	3
ISL-7104	Islam & Mustashraheen	3	0	3
2 <sup>ND</sup> SEMESTER				
Code	Course Title	Lec.Hrs	Lab.Hrs	Credit Hrs
ISL-7201	Arabic Language & Literature (Compulsory )	3	0	3
ISL-7202	Hadith & Uloom-ul-Hadith(Optional)	3	0	3
ISL-7203	Usool -e- Fiqh (Optional)	3	0	3
ISL-7204	Masadir Uloom-e-Islamia(Optional)	3	0	3
ISL-7205	Ilem-e-Tasawouf(Optional)	3	0	3
ISI-7206	Fiqh-e-Islami (Optional)	3	0	3
ISI-7207	Contemporary Islamic Movements (Optional)	3	0	3
3 <sup>RD</sup> & 4 <sup>TH</sup> SEMESTER				
Code	Course Title	Lec.Hrs	Lab.Hrs	Credit Hrs
ISL-798	Seminar	0	0	01
ISL-799	Thesis	0	0	06
	Total	24	0	07



## ALUMNI MESSAGES

I am Sumble Mehmood. It is a great pleasure to be a student of M.A Islamic Studies in the Institute of Islamic Studies (MUST). I am impressed with the knowledge & environment given to students at IIS. Excellent academic environment and interaction with the faculty has given me tremendous confidence. The attitude and devotion of the faculty members towards students is remarkable. Certainly, I have made the right choice to structure myself for future endeavors.



**Sumbel Mehmood**

I feel privileged and honored to be a part of this system which has enlightened my life. At IIS, teachers are active researchers and teaching takes place in an informal context. All programmes are deeply rooted in research and are reviewed on an ongoing basis to meet the highest national and global quality standards. The Islamic Studies master's programme focuses on developing your understanding of 'Islam', with special emphasis on the comparative study of Muslim society.



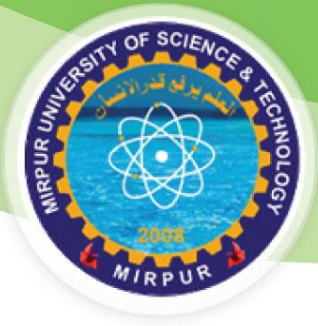
**Usman Abid**

# DEPARTMENT OF LAW

## Degree Program Offered

BA LLB (Hons)





**Chairman:**

Khawar Jarral

**Tel:** +9828-960065

**E-mail:** [chairman.law@must.edu.pk](mailto:chairman.law@must.edu.pk)

**Message from Chairman:**

I am delighted to introduce you to the Department of Law, where studying law will engage you in a dynamic learning experience and provide you with high quality, well-regarded degree. Department of Law is one of premier institution imparting legal education, which has, within a short period, carved its name as an institution which provides unparalleled learning opportunities for its students. We are known to provide a highly inspiring and supportive environment in which to study law and to develop as a confident young professional. I hope that you find the information in this prospectus a useful starting point for exploring a degree with us.



**Faculty members of Law Department**



## Faculty Members

### Mr. KhawarJarral

**Designation:** Associate Professor

**E-mail:** [chairperson.law@must.edu.pk](mailto:chairperson.law@must.edu.pk)

### Ms. Haleema Sadia

**Designation:** Lecturer

**Qualification:** LLM

**Area of interest:** Islamic Commercial Law

**E-mail:** [haleemasadia.law@must.edu.pk](mailto:haleemasadia.law@must.edu.pk)

### Mr. Ahsan Iqbal

**Designation:** Lecturer

**Qualification:** LLM in International Commercial Law

**Area of interest:** Corporate Law and International Commercial Law

**E-mail:** [ahsan.law@must.edu.pk](mailto:ahsan.law@must.edu.pk)

### Ms. Bushra Nawaz

**Designation:** Lecturer

**Qualification:** LLM

**Area of interest:** Islamic Jurisprudence, Law of Contract

**E-mail:** [bushra.law@must.edu.pk](mailto:bushra.law@must.edu.pk)

### Mr. Saqib Shahbaz

**Designation:** Assistant Professor

**Qualification:** LLM (General) USA

**Area of interest:** Constitutional Law

**E-mail:** [saqib.law@must.edu.pk](mailto:saqib.law@must.edu.pk)

### Ms. Saiqa Naseer

**Designation:** Lecturer

**Qualification:** LLM

**Area of interest:** Muslim Family Law

**E-mail:** [saiqa.law@must.edu.pk](mailto:saiqa.law@must.edu.pk)

### Ms. Munazza Akram

**Designation:** Lecturer

**Qualification:** LLM

**Area of interest:** Human Right Law, Public International Law, and Jurisprudence

**E-mail:** [munazza.law@must.edu.pk](mailto:munazza.law@must.edu.pk)



## **BA LLB (Hons) 5 Years**

Department of Law offers admission in a 5-years BA LLB degree program once a year. Department of Law follows the curriculum approved by the Higher Education Commission as per the recommendation of the Curriculum Revision Committee. The Department of Law endeavors to develop credible human traits in law students to become successful and competitive lawyers in their upcoming professional life.

### **PROGRAM EDUCATIONAL OBJECTIVES (PEOS)**

- **Professional Qualities:**

To prepare our students to practice law with professional excellence and commitment to fairness, justice, compassion, and the highest ethical standards.

- **Careers:**

To develop in our students the knowledge and competencies that will enable them to discern among and to succeed in a range of careers.

- **Service:**

To prepare our students to serve the community, especially the underprivileged, with the dedication to human dignity and the common good.

- **Leadership:**

To prepare our students for leadership in the bar, the bench, the academy, and the public and private sectors.

- **Faith:**

To encourage our students to consider the role of faith in leading integrated and fulfilling personal and professional lives.

- **Global Awareness and Diversity:**

To prepare our students to live, learn, and work in a diverse, multicultural, and globalized environment.

- **Interdisciplinary:**

To foster in our students an appreciation of the interactions between the law and other disciplines and professions.





## **PROGRAM LEARNING OBJECTIVES (PLOS)**

- Graduates will demonstrate knowledge and understanding of substantive and procedural law.
- Graduates will demonstrate competence in legal analysis, legal reasoning, and legal practice skills.
- Graduates will demonstrate competence in problem-solving skills in the legal context.
- Graduates will demonstrate competence in legal research and written and oral communication in the legal context/regarding legal matters.
- Graduates will demonstrate the exercise of proper professional and ethical responsibilities to clients and the legal system.
- Graduates will demonstrate the knowledge, skills, and professionalism necessary for effective, ethical, and responsible participation as members of the legal profession to serve the public, the profession, and society/the

community. These additional skills may include interviewing, counseling, negotiation, trial practice, document drafting, conflict resolution, organization and management of legal work, collaboration, cultural competency, and self-evaluation.

- Graduates will be prepared to continue to develop professional skills and attributes.



### ADMISSION CRITERION:

#### Entry Requirement: For BA LLB

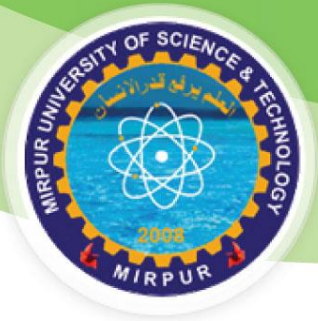
- FA/F.Sc. or equivalent with at least 2nd division
- Candidate must pass the **Law Admission Test (LAT)** conducted by HEC, as per directions of the Supreme Court of Pakistan.

### Selection Criterion:

The final selection shall be made on the basis of aggregation comprised of academic marks plus entry test.

### Degree Requirements:

- Credit hours 176
- Duration: 05 Years ( 10 Semesters)
- Course load per semester: 15-20 C.Hrs  
Number of courses per semester: 5-7 Courses
- Twelve compulsory courses of 34 credits.
- 09 general and non-law courses of 27 credits.
- 34 law specific and major courses of 103 credits.
- 4 elective courses within the major courses of 12 credits.
- The medium of instructions and examinations shall be English



## **Scholarships Offered:**

### **i. University Merit-based Scholarship**

Top 3- position holders or 5% students of each semester/class are awarded this scholarship @ Rs.6000/- per semester. More than 300- students annually benefit from this program.

### **ii. University Need-Based Scholarships**

50-60 scholarships are awarded from the academic year 2014 on-wards to the poor and needy students in the undergraduate program according to the rules and procedures laid down by the HEC's Need-Based Scholarship program. The scholarship pertains to a stipend of PKR 6000/- per semester, or as determined by the University according to the availability of funds. Usually, this scholarship is granted for 1-2 semesters only. In some cases, the whole duration of an academic program is covered, depending on the discretion of the recommending body.

### **iii. Students-Guardians Insurance Scheme:**

The University waives-off full or half tuition fee and grant Rs.3000-6000/- per month as a stipend to such students whose parents/guardians pass away (dies) during the educational period of the student provided the student apply for this financial assistance.

### **iv. HEC Need-Based Scholarships:**

100-120 scholarships are being awarded annually to the impoverished and extremely needy fresh students admitted for the full duration of the study program. The component of scholarship is (i) refund of full tuition fee and (ii) PKR 6000/- per month as stipend.

### **v. HBL Foundation Scholarship Scheme:**

60-65 scholarships are being awarded from the academic year 2015 to the needy students according to the rules & regulations notified by the University. The component of scholarship is stipend @ PKR 8000- 12000 per semester.



## Scheme of Study: BS Program

YEAR ONE - SEMESTER ONE		
Course Code	Course Title	Credit Hrs.
LAW-1101	ENGLISH-I	3+0
LAW-1102	PAKISTAN STUDIES	2+0
LAW-1103	SOCIOLOGY	3+0
LAW-1104	INTRODUCTION TO ECONOMICS	3+0
LAW-1105	INTRODUCTION TO LAW	3+0
LAW-1106	SKILLS DEVELOPMENT-I	3+0
LAW-1107	JAMMU & KASHMIR STUDIES	3+0
<b>Total</b>		<b>20</b>
YEAR ONE – SEMESTER-TWO		
Course Code	Course Title	Credit Hrs.
LAW-1201	ENGLISH–II	3+0
LAW-1202	ISLAMIC STUDIES/ ETHICS	2+0
LAW-1203	POLITICAL SCIENCE	3+0
LAW-1204	LEGAL SYSTEM OF PAKISTAN	3+0
LAW-1205	LEGAL HISTORY OF PAKISTAN AND INDIA	2+0
LAW-1206	SKILLS DEVELOPMENT-II	3+0
LAW-1207	ARABIC	3+0
<b>Total</b>		<b>20</b>



<b>YEAR TWO - SEMESTER THREE</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
LAW-2301	ENGLISH-III	3+0
LAW-2302	LOGIC AND LEGAL REASONING	3+0
LAW-2303	ISLAMIC JURISPRUDENCE-I	3+0
LAW-2304	LAW OF TORTS	3+0
LAW-2305	LAW OF CONTRACT-I	3+0
LAW-2306	RESEARCH METHODS	3+0
<b>Total</b>		<b>18</b>
<b>YEAR TWO - SEMESTER FOUR</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
LAW-2401	HUMAN RIGHTS LAW	3+0
LAW-2402	CONSTITUTIONAL LAW-I (COMPARATIVE)	3+0
LAW-2403	LAW OF CONTRACT-II	3+0
LAW-2404	ISLAMIC JURISPRUDENCE-II	3+0
LAW-2405	CONSTITUTIONAL HISTORY OF AJ&K	3+0
LAW-2406	FUNDAMENTALS OF MANAGEMENT	3+0
<b>Total</b>		<b>18</b>



<b>YEAR THREE - SEMESTER FIVE</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
LAW-3501	JURISPRUDENCE-I	3+0
LAW-3502	CONSTITUTIONAL LAW-II (PAKISTAN)	3+0
LAW-3503	ISLAMIC PERSONAL LAW-I	3+0
LAW-3504	CRIMINAL LAW-I	3+0
LAW-3505	MERCANTILE LAW-I	3+0
<b>Total</b>		<b>15</b>
<b>YEAR THREE - SEMESTER SIX</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
LAW-3601	JURISPRUDENCE-II	3+0
LAW-3602	MERCANTILE LAW-II	3+0
LAW-3603	ISLAMIC PERSONAL LAW-II	3+0
LAW-3604	CRIMINAL LAW-II	3+0
LAW-3605	LAW OF PROPERTY	3+0
<b>Total</b>		<b>15</b>



<b>YEAR FOUR - SEMESTER SEVEN</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
LAW-4701	PUBLIC INTERNATIONAL LAW-I	3+0
LAW-4702	CONSTITUTIONAL HISTORY OF PAKISTAN	3+0
LLB-4703	CIVIL PROCEDURE-I	3+0
LLB-4704	CRIMINAL PROCEDURE-I	3+0
LLB-4705	LAW OF EVIDENCE-I	3+0
LLB-4706	LEGAL DRAFTING-I	3+0
<b>Total</b>		<b>18</b>
<b>YEAR FOUR - SEMESTER EIGHT</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
LLB-4801	PUBLIC INTERNATIONAL LAW-II	3+0
LAW-4802	EQUITY AND SPECIFIC RELIEF	3+0
LAW-4803	CIVIL PROCEDURE-II	3+0
LAW-4804	CRIMINAL PROCEDURE-II	3+0
LAW-4805	LAW OF EVIDENCE-II	3+0
LAW-4806	LEGAL DRAFTING-II	3+0
<b>Total</b>		<b>18</b>



<b>8 WEEKS INTERNSHIP AFTER COMPLETION OF 8<sup>TH</sup> SEMESTER, DURING VACATIONS</b>		<b>4 Credit Hrs.</b>
<b>YEAR FIVE- SEMESTER NINE</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
LAW-5901	ADMINISTRATIVE LAW-I	3+0
LAW-5902	LEGAL ETHICS	3+0
LAW-5903	ELECTIVE-I*	3+0
LAW-5904	ELECTIVE-II*	3+0
LAW-5905	MOOT CASES AND ROLE PLAYING	3+0
<b>Total</b>		<b>15</b>
<b>YEAR FIVE- SEMESTER TEN</b>		
LAW-5101	ADMINISTRATIVE LAW-II	3+0
LAW-5102	INTERPRETATION OF STATUTES	3+0
LAW-5103	RESEARCH PROJECT	3+0
LAW-5104	ELECTIVE-III*	3+0
LAW-5105	ELECTIVE-IV*	3+0
<b>Total</b>		<b>15</b>

**Note:** Any of these (Optional)\* courses shall be offered subject to the availability of expert.

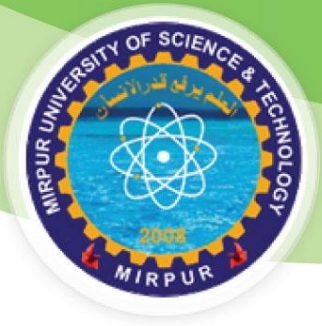




### **ELECTIVE COURSES (Any Four Out Of the Following)\***

1. Alternate Dispute Resolution	9. Local and Special Laws
2. e-Commerce Law (Cyber Laws)	10. Public Interest Litigation (Law of Writs)
3. Environmental Laws	11. Shipping Law
4. Intellectual Property Laws	12. Taxation Laws
5. International Humanitarian Law	13. Comparative Constitutional Development in AJ&K, IHK, and GB
6. Islamic Commercial Laws	14. Criminology
7. Labour Laws	
8. Land Laws	

(\*upon the availability of teacher)



## ALUMNI MESSAGES

Fantastic place to gain legal education. I spent five years here and the whole environment was very friendly. My lecturers were very approachable and helped with all my questions. They are welcoming and ready to answer any queries students may have. I have been able to build my confidence during my studies, and I am so grateful to my lecturers for believing in me and encouraging me. Overall, my experience has been phenomenal and would recommend to everyone!



Saba Afzal  
Session 2013-18

Attending the Law Department was a transformational experience in my life. My education from this department has given me the confidence to master anything I want to accomplish in my life. I was nobody when I first arrived at this magnificent place. In my five years at Law department Must, I met with the teachers who inspired and motivated me to be the best version of myself and think out of the box.



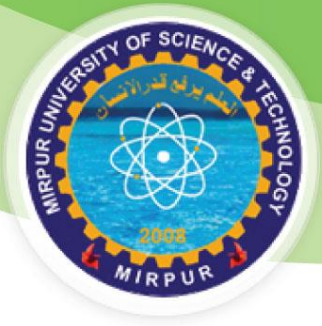
M. Basharat Ali  
Session 14-19

# DEPARTMENT OF MEDIA & MASS COMMUNICATION

## Degree Programs Offered

BS Media & Communication Studies





**Coordinator:**

Ms. Sadaf Munir

E-mail: [sadafmunir@must.edu.pk](mailto:sadafmunir@must.edu.pk)

**Message from Coordinator:**

Keeping in view, globally importance of Media and Communication Studies, Mirpur University of Science and Technology has established Azad Jammu Kashmir's first ever Department of Media and Communication Studies. Being a pioneer in AJK Department of Media and Communication Studies will answer the growing demand of society for the academic growth of the discipline. The scheme of study for the BS Media and Communication studies is designed to bring the academic, practical and research components altogether. The contents of the courses are devised by incorporating the theoretical material and practices in the media industry. To provide students on-hand training, credited Internship, lectures and workshops are included in the scheme of study. The Bachelors of Science in Media and Communication Studies will provide students innovative, diverse, and challenging academic environment to equip themselves with industry based skills.



## Faculty Members

### **Ms. Sadaf Munir**

**Designation:** Lecturer

**Qualification:** MS

**Area of interest:** Gender Equality,  
Media History of Pakistan, Press laws , Governance

**E-mail:** [sadafmunir@must.edu.pk](mailto:sadafmunir@must.edu.pk)

### **Mr. Umar Ghazanfar Chaudhary**

**Designation:** Lecturer (Visiting)

**Qualification:** MS

**E-mail:** [umarghazanfarch@gmail.com](mailto:umarghazanfarch@gmail.com)

### **Mr. Kashif Najeeb**

**Designation:** Assistant Registrar/Lecturer

**Qualification:** MS

**E-mail:** [kashifnajeeb@must.edu.pk](mailto:kashifnajeeb@must.edu.pk)



## **B.S Media & Communication Studies**

Sociology covers every aspect of human life. It equips the student with the skills to see the world systematically. The social environment is evolving rapidly to respond to new knowledge and information technologies related to the changing nature and complexity of our family, education, work, politics, mass media, public health systems and military. It is highly important to understand the society at first hand to change or maintain its order. To devise a solution to a social problem, first step is to identify the problem. The capacity to maintain a research presence is essential to both the academic communities of science and arts to maintain high quality program particularly at the graduate level.

### **PROGRAM LEARNING OBJECTIVES (PLOS)**

After completing the BS Media and Communication Studies, the students will be able to:

- Learn trends in the field of media as how to use latest technology for dissemination of information;
- Produce the contents for both print & electronic media;
- Develop a practical understanding of field through internship;
- To provide on-hand training in order to equip them to tackle challenges of media industry as a media professional.
- To play an active role in projection of Kashmir Issue



### ADMISSION CRITERION:

- Students who have passed intermediate examination (F. Sc/ FA/ A levels or equivalent) with minimum of 45% marks in entire academic career.
- Entry Test and interview organized by the university.
- The students who have BA/ BSc. (2 years) degree can also apply and would be admitted in Semester 5 of BS program as per university rules.
- Both the male and female students are equally encouraged to apply.
- The age limit prescribed by the university calendar would also be applicable for candidates.

### Scholarships Offered:

On the basis of different criteria following scholarships are offered:

- |                               |                             |
|-------------------------------|-----------------------------|
| 1. Merit Based Scholarship,   | 5. Ehsas Scholarships       |
| 2. HBL Foundation Scholarship | 6. MUST scholarship         |
| 3. Allied Bank Scholarship    | 7. Baitul Mall -Scholarship |
| 4. HEC need-base              | 8. Other NGOs scholarships. |

### Degree Requirements:

This program is designed in accordance with the HEC prescribed model BS degree in Media & Communication Studies which is equivalent to MA/ M.Sc Media & Communication Studies equivalent to sixteen years of education. The program is based on 134 credit hours in a total of eight semesters.

### Duration:

04 years; 8 Semesters; Semester duration: 16-18 weeks



## Scheme of Study: BS Program

<b>YEAR ONE - SEMESTER ONE</b>		
Course Code	Course Title	Credit Hrs.
ENG-1107	Functional English -I	3+0
ISL-112	Islamic Studies	2+0
BMC-1101	Introduction to Mass Communication	3+0
COMP-1105	Introduction to Computing	3+0
MAT-1115	Basic Mathematics	3+0
BMC-1102	Introduction to Political Science	2+0
<b>Total</b>		<b>17</b>
<b>YEAR ONE – SEMESTER-TWO</b>		
Course Code	Course Title	Credit Hrs.
ENG-1207	Writing& Presentation Skills(English II)	3+0
PS-1217	Pakistan Studies	2+0
BMC-1203	Mass Media in Pakistan	3+0
ARA -1201	Arabic	3+0
BMC-1204	Fundamental of News Writing	2+0
SOC- 1221	Basic Concepts of Sociology	3+0
<b>Total</b>		<b>17</b>





<b>YEAR TWO - SEMESTER THREE</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
ENG -2107	Communication Skills (English III)	3+0
BMC-2105	Contemporary Mass Media	3+0
BMC -2106	Online Journalism	3+0
BMC - 2107	Evolution of Mass Media	3+0
PSY - 2119	Social Psychology	3+0
BMC - 2108	Journalistic Language (English and Urdu)	3+0
<b>Total</b>		<b>18</b>
<b>YEAR TWO - SEMESTER FOUR</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BMC-2208	Feature, Column & Editorial Writing	3+0
BMC-2209	Introduction to Social Media	3+0
ECO-2206	Introduction to Economics	3+0
URD-2222	Functional Urdu	3+0
IR - 2210	International Relations	3+0
<b>Total</b>		<b>15</b>



<b>YEAR THREE - SEMESTER FIVE</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BMC - 3110	Principal of Advertisement & PR	3+0
BMC – 3111	Radio News Reporting and Production	3+0
BMC – 3112	Communication Theories-I	3+0
STA - 3120	Statistics for Communication Research	3+0
BMC – 3113	Introduction to Law	3+0
<b>Total</b>		<b>15</b>
<b>YEAR THREE - SEMESTER SIX</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BMC - 3214	Communication Theories -II	3+0
BMC – 3215	TV News Reporting and Production	3+0
BMC – 3216	Media Ethics and Laws	3+0
BMC – 3217	Sub Editing & Page Designing	3+0
BMC – 3218	Research Methods I	3+0
BMC -3219	Internship (Apprentice and report)	3+0
<b>Total</b>		<b>18</b>



<b>YEAR FOUR - SEMESTER SEVEN</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BMC – 4120	Research Methods II	3+0
BMC – 4121	Organizational Behavior	3+0
BMC – 4122	International Communication	3+0
BMC - 4123	Elective I	3+0
BMC – 4124	Elective- II	3+0
<b>Total</b>		<b>15</b>
<b>YEAR FOUR - SEMESTER EIGHT</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BMC - 4225	Elective III	3+0
BMC - 4226	Elective IV	3+0
BMC - 4227	National and International Affairs	3+0
BMC – 4228	Development Support Communication	3+0
BMC - 4229	Thesis/Research Project	6+0
<b>Total</b>		<b>18</b>
<b>Total credit hours</b>		<b>133</b>

**Note:** Any of these (Optional)\* courses shall be offered subject to the availability of expert.

### **Optional Subjects:**

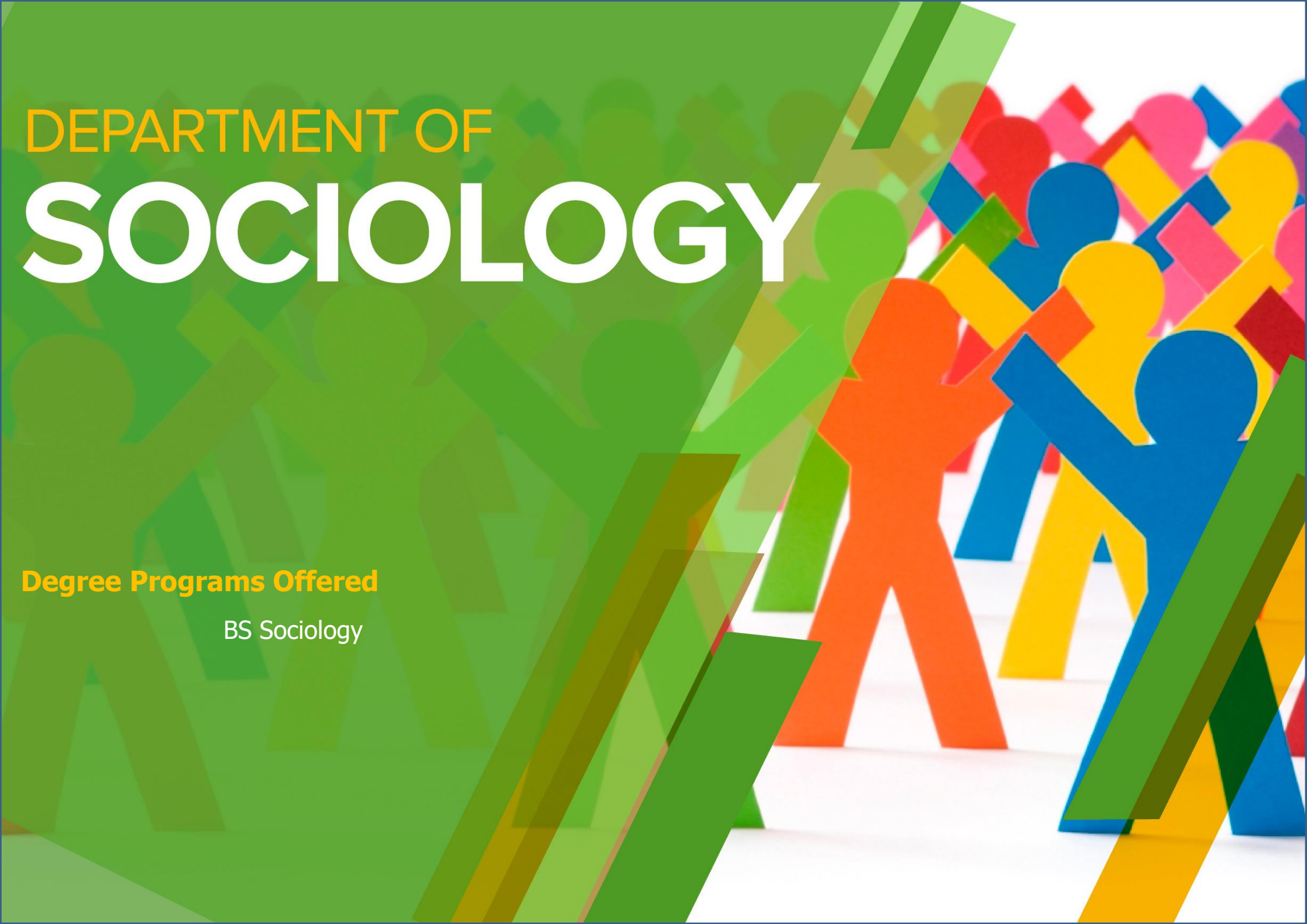


<b>1.PRINT MEDIA</b>			
<b>Sr. No.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
1.	BMC-4123	Newspaper Production	3+0
2.	BMC-4124	Advanced Reporting & Sub-Editing	3+0
<b>2. ADVERTISING AND PUBLIC RELATIONS</b>			
<b>Sr. No.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
3.	BMC-4225	Managerial Communication	3+0
4.	BMC-4226	Principals of Marketing	3+0

### List of Optional Courses\*:

Students having 3.0 or above GPA will be given a choice to either opt for 'Thesis Writing' subject to the availability of supervisor or two courses in lieu thereof.

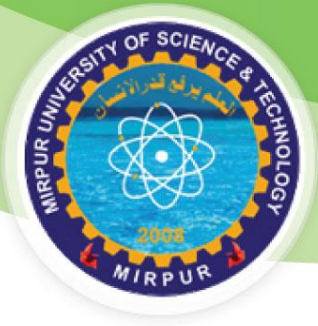
<b>Sr. No.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
1.	BMC - 4123	Sports Journalism	3+0
2.	BMC - 4124	Islam and Western Media	3+0
3.	BMC - 4225	Investigative Journalism	3+0
4.	BMC - 4226	Media Management	3+0



DEPARTMENT OF  
**SOCIOLOGY**

**Degree Programs Offered**

BS Sociology



**Coordinator:**

Tasmia Matloob

E-mail: [chairperson.sociology@must.edu.pk](mailto:chairperson.sociology@must.edu.pk)

**Message from Coordinator**

Department of Sociology seeks to provide a high-quality educational program for the undergraduate that helps them develop logical thinking and cultural sensitivity, and the understanding of human behavior in various societies. The key focus is on the interdisciplinary research and contribution to the theory in sociology. We strongly believe in the importance of producing thinkers, leaders, and innovators whose subsequent efforts will bring positive change in our society. We train the youth to bring forth the voice of Kashmir on international academic platforms as to represent the stance of Kashmir. Moreover, as good social scientists, we recognize the legacy of our history, and appreciate the ways it has shaped our culture and values. We are an intellectually curious and generous bunch, committed to creating a stimulating environment that supports rigorous empirical research on critical social issues.



## Faculty Members

### Tasmia Matloob

**Designation:** Lecturer

**Qualification:** MS Sociology

**Area of interest:** Gender and Management

**Contact:** [chairperson.sociology@must.edu.pk](mailto:chairperson.sociology@must.edu.pk)

### Farooq Abdullah

**Designation:** Lecturer

**Qualification:** MS. Sociology

**Area of interest:** Gender, Education

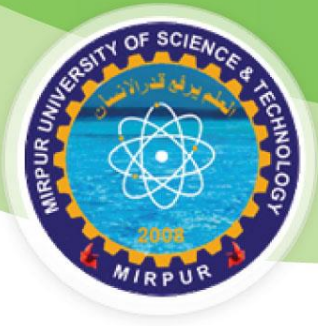
**Contact:** [farooq.abdullah@must.edu.pk](mailto:farooq.abdullah@must.edu.pk)

### Mr. M. Nisar Ahmad Khan Ghorsi

**Designation:** Assistant Prof.

**Qualification:** MS. Agriculture Sciences

**Area of interest:** Rural Development



## **B.S Sociology**

Sociology covers every aspect of human life. It equips the student with the skills to see the world systematically. The social environment is evolving rapidly to respond to new knowledge and information technologies related to the changing nature and complexity of our family, education, work, politics, mass media, public health systems and military. It is highly important to understand the society at first hand to change or maintain its order. To devise a solution to a social problem, first step is to identify the problem. The capacity to maintain a research presence is essential to both the academic communities of science and arts to maintain high quality program particularly at the graduate level.

### **Program Mission**

To grow as a leading academic and research institution for sociology in Azad Jammu & Kashmir to portray the voice of

Kashmiris on international academic forums and in the promotion of a tolerant society.

### **Program Educational Objectives (PEOs)**

Department of Sociology seeks to provide a high-quality educational program for the undergraduate that helps them develop logical thinking and cultural sensitivity, and the understanding of human behavior in various societies. The key focus is on the interdisciplinary research and contribution to the theory in sociology. We strongly believe in the importance of producing thinkers, leaders, and innovators whose subsequent efforts will bring positive change in our society. We train the youth to bring forth the voice of Kashmir on international academic platforms as to represent the stance of Kashmir.

### **Program Learning Objectives (PLOs)**

Understanding and Changing the Social World with a New Sociological Perspective





The Sociology Program prepares one for a lifetime of change by developing one's appreciation of diversity, love of learning, writing and study skills, and knowledge base about human behavior, social organization, culture, and social change. If you are the type of person who does not necessarily follow the crowds, (but are fascinated by their behavior), the type who is truly interested in what is going on in the world, then sociology should interest you.

#### **Admission Criterion:**

- Students who have passed intermediate examination (F. Sc/ FA/ A levels or equivalent) with minimum of 45% marks in entire academic career.
- Entry Test and interview organized by the university.
- The students who have BA/ BSc. (2 years) degree can also apply and would be admitted in Semester 5 of BS program as per university rules.

#### **Selection Criterion:**

The formula of merit calculation = (percentage of score obtained in SSC) + (percentage of score obtained in HSSC) + (percentage of entry test marks) + (5 marks for additional course/diploma) + (10 marks for Hafiz-e- Quran)

#### **BS (04 years) in Sociology**

This program is designed in accordance with the HEC prescribed model BS degree in Sociology which is equivalent to MA/ MSc Sociology equivalent to sixteen years of education. The program is based on 134 credit hours in a total of eight semesters.

#### **Duration:**

Duration = 04 years; 8 Semesters; Semester duration: 16-18 weeks



## Highlights of the Degree Program

- Morning program on regular basis
- Admissions open once in an academic year
- Duration = 04 years; 8 Semesters; Semester duration: 16-18 weeks
- Total Credit Hours = 134
- Score criteria = CGPA
- Session Fall/ September 2019
- Course Load per Semester 15-18 CH
- Number of courses per semester 4-6
- All students are required to register for full load in the eight semesters.
- Internship: A 3 CHrs. internship is scheduled for summer at the end of the third year. At the end of the six-week internship, all students are required to submit a comprehensive report, giving details of their experience

and learning and appear in viva voice examination. Viva voice will be conducted after evaluation of reports by departmental committee.





## Scheme of Study (BS Sociology)

SEMESTER ONE			
Course Code	Course Title	Credit Hrs.	Subject Category
ITM- 0011	Introduction To Management	3	GC 2
MC - 0014	Mass Communication	3	GC 1
MAT-0015	Mathematics	3	CC 3
PS - 0017	Pakistan Studies/Kashmir Studies	2	CC 2
SOC-1101	Sociology I	3	FC 1
ENG-1107	English-1	3	CC 1
<b>Total</b>		<b>17</b>	
SEMESTER-TWO			
Course Code	Course Title	Credit Hrs.	Subject Category
SOC-1202	Social Anthropology	3	FC 2
ECO-1206	Economics	3	GC 4
ENG-1207	English – Ii	3	CC 4
ISL - 1212	Islamic Studies	3	CC 5
PSY- 1219	Psychology	3	GC 3
STA- 1220	Statistics	3	CC 6
		<b>18</b>	



<b>SEMESTER THREE</b>			
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>	<b>Subject Category</b>
ENG –2314	English Iii	3	CC 7
COM -2315	Introduction To Computer And Spss	3	CC 8
SOC - 2316	Introduction To Law	3	GC 5
SOC - 2317	Social Work	3	GC 6
SOC - 2318	Development Of Social Thought	3	FC 3
SOC –2319	Social Psychology	3	FC 4
		<b>18</b>	
<b>SEMESTER FOUR</b>			
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>	<b>Subject Category</b>
ARA -2401	Arabic	3	CC 9
SOC – 2420	International Relations	3	GC 7
SOC- 2421	Sociological Theory I	3	FC 4
SOC- 2422	Pakistani Society And Culture	3	FC 5
SOC- 2423	Sociology Of Gender	3	FC 6
SOC- 2424	Social Research Methods I	3	FC 7
		<b>18</b>	



<b>SEMESTER FIVE</b>			
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>	<b>Subject Category</b>
SOC- 3526	Sociological Theory II	3	FC 8
SOC- 3527	Advanced Research Methodology II	3	FC 9
SOC- 3528	Sociology Of Religion	3	MC 1
SOC- 3529	Introduction To Population Studies	3	MC 2
SOC- 3530	Community Development	3	MC 3
	<b>Total</b>	15	
<b>SEMESTER SIX</b>			
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>	<b>Subject Category</b>
SOC-3631	Sociology Of Health	3	SOC-3631
SOC-3632	Sociology Of Development	3	SOC-3632
SOC-3633	Rural Sociology	3	SOC-3633
SOC-3634	Urban Sociology	3	SOC-3634
SOC-3635	Islamic Sociology	3	SOC-3635
SOC-3636	Internship	3	SOC-3636
		<b>18</b>	



<b>SEMESTER SEVENTH</b>			
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>	<b>Subject Category</b>
SOC-4737	Sociology Of Law And Human Rights	3	MC 9
SOC-4738	Sociology Of Education	3	MC 10
VARIABLE	Elective- I	3	EC 1
VARIABLE	Elective Ii	3	EC 2
SOC-4741	Sociology Of Social Change	3	MC 11
SOC-4742	Thesis/Research Project	3	MC 12
		18	
<b>SEMESTER EIGHTH</b>			
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>	<b>Subject Category</b>
VARIABLE	Elective Iv	3	EC 4
VARIABLE	Elective V	3	EC 5
SOC-4845	Sociology Of Globalization	3	MC 13
SOC-4846	Thesis/Research Project	3	MC 14
		12	
<b>TOTAL REDIT HRS</b>		<b>134</b>	



## List of Elective Courses

Any of the following:

Sr. No	Course Title
1.	Organizational Behaviour
2.	Industrial Sociology
3.	Social Impact Assessment
4.	Corporate Social Responsibility
5.	Conflict Resolution
6.	Social Policy
7.	Criminology
8.	Clinical Sociology
9.	Environmental Sociology
10.	Sociology of Mass Communication
11.	Sociology of Family and Marriage
12.	Sociology of Emotions and Human Feeling
13.	Sociology of Race and Ethnicity

# MUST BUSINESS SCHOOL

## Degree Programs Offered

- BS Business Administration
- BS Banking & Finance
- BS Commerce
- BS Human Resource Management (Bhimber Campus)
- Masters Business Administration (MBA 3.5 Year)
- Masters Business Administration (MBA 1.5 Year) (Evening)
- Masters Business Administration (MBA (Executive) 2 Year (Evening)
- Masters Commerce
- MS Management Sciences (Evening)





## **Director/ Incharge Dean**

Dr. Muhammad Khaliq

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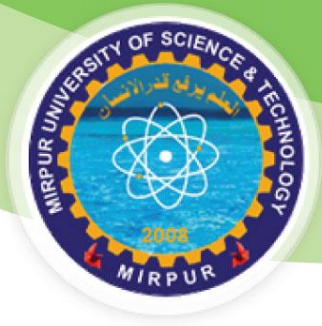
E-mail: [director.mbs@must.du.pk](mailto:director.mbs@must.du.pk)

### **Message from Director/ Incharge Dean**

Welcome to Faculty of MBS. As Director/ Incharge Dean of the MUST Business School, I am extremely proud of the rich tradition of providing practical, experience-based business education that our School has upheld since its founding. Our business programs prepare our students to become leaders with the moral depth and intellectual intensity necessary to meet the challenges of a time of critical transition in society. Located in an economic and cultural hub, the Mirpur University of Science and Technology (MUST), Mirpur Azad Jammu and Kashmir offers unique opportunities for our students to engage with industries and communities.

We at MUST Business School are committed to providing academic excellence in the fields of business administration, banking & finance and commerce.

I would like to cordially invite all of you who are interested in expanding your knowledge and enriching your careers to explore our school further either online or through a visit to campus.



## Faculty members of MUST Business School





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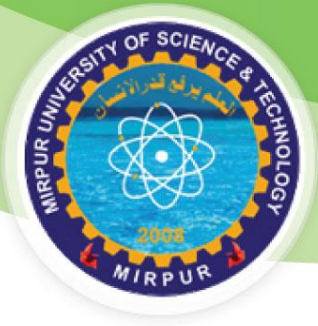
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### **Introduction to MUST Business School**

Must Business School, Inaugurated by Dr. Ishrat Husain former Governor State Bank of Pakistan and currently serving as dean and director Institute of Business Administration Karachi (IBA), is one of the best business schools in this part of the country. The school is a blend of experience in teaching, research and practical exposure of the market. Moreover, through different initiatives such as Entrepreneurial Incubation Center (EIC), each year a number of businesses are initiated by our students, the aim of which is to produce graduates those are not looking for employment but catering employment for others in the market. MBS has initiated a Business Research Center (BRC) which is mainly established to meet the current research needs of local businesses, to minimize the failure rate of businesses and to boost success rate in businesses. Teaching Methods at MBS are based on a combination of classroom sessions, syndication, group work, case studies, term papers, use of

library, top quality seminars, workshops and conferences. The three departments are established under the umbrella of MUST Business School are respectively, Department of Business Administration, Banking and Finance and Commerce are established the new degree Programme BS in HRM is introduced at Bhimber campus.

### **Vision**

To become a business school, with an international repute in academia, industry and research for nurturing the future leaders and entrepreneurs. The school aims to provide graduates with the contemporary knowledge and soft skills required to make a positive impact on local and international level businesses.

### **Mission**

MBS aims to link globalized world via creating network of knowledge and assimilating it with our distinct indigenous



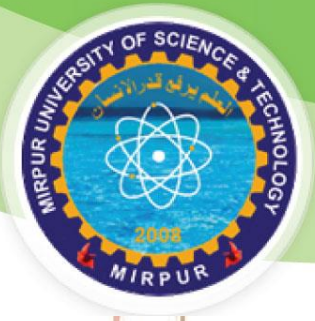
values. The focus is to modernize business processes while preserving culture. Our belief is embedded in thinking global and acting local, creating strong bond with local businesses, in order to solve real-time problems. Our competitive roots are students we produce skilled tomorrow leaders and entrepreneurs to create a sustainable and viable region.

### **Objectives**

- To produce excellent research that helps both society and businesses.
- To be an outstanding learning and teaching

institution that produces employable students.

- To build sustainable and mutually beneficial relationships with the corporate world.
- To develop national and international partnerships with like minded institutions.
- To inculcate a culture of continuous improvement based on international standards of excellence for business schools.
- To promote innovation and team-work amongst our students and faculty members.



### **BS in Business Administration**

At BBA level special importance is attached to project work where students go to the field to analyze real life problems and come up with meaningful solutions. This gives them the essential exposure to the manner in which the business world operates in Pakistan. Again, a large number of professional and technical seminars are conducted where senior managers from the industry are invited to share their experiences with our students.

In order to produce graduates with a well-balanced personality, general awareness of social issues and basic reasoning capabilities, students are also required to take, in addition to core and elective courses of the discipline.

#### **Admission Requirements**

Higher Secondary School Certificate or Equivalent securing at least 45% marks in aggregate

- Entry Test





### Degree Requirements

Each candidate for the BBA degree is required to complete 126 Semester Credit Hours (SCH) as per the following detail:

Area	SCH
(a) Core Courses	102
(b) Elective Course	18
(c) Business Project*	06
<b>Total</b>	<b>126</b>

### \*Project

It is mandatory for every student to complete a Business Project in 8th semester.

**Duration:** This is a four year degree program comprising of 8 semesters with minimum of 126 semester credit hours (SCH). There is a Fall and a Spring semester in each year.

### Scheme of Study for BS in Business Administration

Code	Course Title	Credit Hours
<b>First Semester</b>		
BBA-111	Principles of Accountings	3
BBA-112	IT in Business	3
BBA-113	Pak. Studies/ Islamic Studies	3
BBA-114	Introduction to Psychology	3
BBA-115	Freshman English-I	3
BBA-116	Business Mathematics-I	3



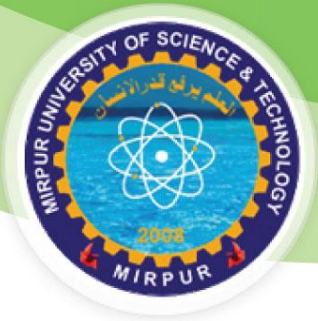
	<b>Total Credit Hours</b>	<b>18</b>
<b>Second Semester</b>		
BBA-121	Micro Economics	3
BBA-122	Business Mathematics-II	3
BBA-123	Business Ethics	3
BBA-124	Financial Accounting	3
BBA-125	Freshman English-II	3
	<b>Total Credit Hours</b>	<b>15</b>
<b>Third Semester</b>		
BBA-231	Principles of Marketing	3
BBA-232	Macro Economics	3
BBA-233	Introduction to Sociology	3
BBA-234	Business Statistics-I	3
BBA-235	Business Communication	3
	<b>Total Credit Hours</b>	<b>15</b>
<b>Fourth Semester</b>		
BBA-241	Research Methods & Report Writing	3
BBA-242	Principles of Management	3
BBA-243	Marketing Management	3
BBA-244	Business Finance	3
BBA-245	Business Statistics-II	3
	<b>Total Credit Hours</b>	<b>15</b>
<b>Fifth Semester</b>		
BBA-351	Cost Accounting	3



BBA-352	Human Resource Management	3
BBA-353	Organizational Behavior	3
BBA-354	Financial Management	3
BBA-355	Business Law	3
	<b>Total Credit Hours</b>	<b>15</b>
<b>Sixth Semester</b>		
BBA-361	Financial Institutions	3
BBA-362	Consumer Behavior	3
BBA-363	Money & Banking	3
BBA-364	Elective-I	3
BBA-365	Elective-II	3
	<b>Total Credit Hours</b>	<b>15</b>



<b>Seventh Semester</b>		
BBA-471	Strategic Management	3
BBA-472	Operations Management	3
BBA-473	Managerial Accounting	3
BBA-474	Elective-III	3
BBA-475	Elective-IV	3
	<b>Total Credit Hours</b>	<b>15</b>
<b>Eighth Semester</b>		
BBA-481	Project	6
BBA-482	Entrepreneurship	3
BBA-483	Total Quality Management	3
BBA-484	Elective-V	3
BBA-485	Elective-VI	3
	<b>Total Credit Hours</b>	<b>18</b>
	<b>Grand Total Credit Hours</b>	<b>126</b>



## Master's in business administration (MBA 3.5 Year)

At MBA level, the course work emphasis is on research orientation, problem solving, entrepreneurial skills, management skills and all ingredients required to perfect leadership qualities. Our MBA program is known for teaching excellence and for combining high academic standards with practical application in today's rapidly changing business environment. Students are encouraged to challenge different viewpoints provided by the course material, teacher or their peers. The skills are developed to critically analyze the issues and develop logical reasoning. We believe that organizational leadership is the most significant element of success in modern-day intensely competitive world.

During the program, MBA students are required to write a thesis. This exercise provides a unique opportunity to develop skills, knowledge and career potential. It could be a theoretical work or specific industry oriented research addressing or

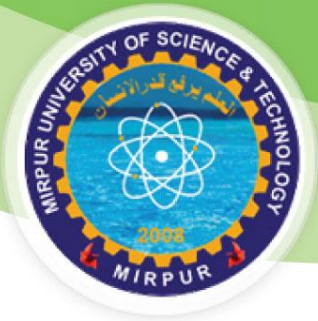
exploring key issues. In either case it must be of some value to an industry, an organization or policy makers. The wide range of specialization areas gives students the opportunity to tailor their studies to individual interests and/or career plans.

### Specialization Areas

1. Finance
2. Human Resource Management
3. Marketing

### Admission Requirements

1. A minimum of 14 years of education (bachelor's degree) in any discipline, e.g. BA, BSc. B Com etc., 45% aggregate or 2nd division
2. Entry Test.



### Degree Requirements

Candidates must successfully complete following requirements for grant of MBA 3.5 degree:

<b>Courses</b>	<b>Semester Credit Hrs.</b>
(a) Core Courses	83 SCH
(b) Elective	18 SCH
(c) Business Project**	06 SCH
<b>Total</b>	<b>107 SCH</b>

Class will be divided in to reasonable syndicates for case studies / topic presentation/ class project. Each syndicate will present the case / topic according to the recommended format.

### METHOD OF LEARNING AND CONTACT HOURS

A variety of techniques will be used to enhance your learning for each course. These include face-to-face lecture, discussion, exams, cases, in-class group activities, and internet research and guest speaker sessions. Students are expected to come to every session prepared based on provided material. Weekly contact of this course is 3 hours.



### SCHEME OF STUDY SEMESTER WISE

Code	Course Title	Credit Hours
<b>Semester-I</b>		
MBA-5101	Principles of Accounting	3
COM-5105	Computer Applications in Business	3
ECO-5106	Microeconomics	3
ENG-5107	Oral Communication	3
STA-5120	Business Mathematics & Statistics	3
<b>Total Credit Hours</b>		<b>15</b>
Code	Course Title	Credit Hours
<b>Semester-II</b>		
MBA-5201	Financial Accounting	3
MBA-5202	Principles of Management	3
MBA-5203	Principles of Marketing	3
MBA-5204	Seminar on CPEC	2
ECO-5206	Macroeconomics	3
ENG-5207	Business Communication	3
Code	Course Title	Credit Hours
<b>Semester-III</b>		
MBA-6301	Marketing Management	3
MBA-6302	Business Finance	3
MBA-6303	Business Ethics	3
MBA-6304	Human Resource Management	3
MBA-6305	Statistical Inferences	3
<b>Total Credit Hours</b>		<b>15</b>



Code	Course Title	Credit Hours
<b>Semester-IV</b>		
MBA-5101	Principles of Accounting	3
COM-5105	Computer Applications in Business	3
ECO-5106	Microeconomics	3
ENG-5107	Oral Communication	3
STA-5120	Business Mathematics & Statistics	3
<b>Total Credit Hours</b>		<b>15</b>
Code	Course Title	Credit Hours
<b>Semester-V</b>		
MBA-7501	Corporate Governance	3
MBA-7502	Strategic Management	3
MBA-7503	Cost Accounting	3
	Elective-I	3
	Elective-II	3
<b>Total Credit Hours</b>		<b>15</b>
Code	Course Title	Credit Hours
<b>Semester-VI</b>		
MBA-7601	Project Management	3
MBA-7602	Leadership	3
MBA-7603	Advanced Research Methods	3
	Elective-III	3
MBA-7604	Project-I	3
<b>Total Credit Hours</b>		<b>15</b>





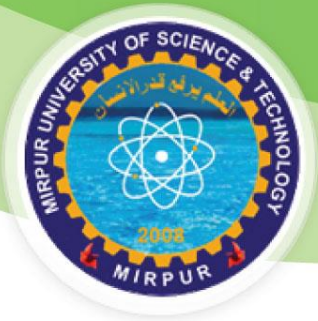
Code	Course Title	Credit Hours
<b>Semester-VII</b>		
MBA-8701	Supply Chain Management	3
	Elective-IV	3
	Elective-V	3
	Elective-VI	3
MBA-8702	Project-II	3
<b>Total Credit Hours</b>		<b>15</b>



<b>ELECTIVE COURSES</b>		
<b>FINANCE</b>		
<b>Course Code</b>	<b>Title</b>	<b>Credit Hrs.</b>
<b>Elective Courses for Semester-V</b>		
FIN-7504	Financial Institutions	3
FIN-7505	International Financial Management	3
FIN-7506	Investment & Security Analysis	3
<b>Elective Courses for Semester-VI</b>		
FIN-7605	Corporate Finance	3
FIN-7606	Islamic Banking and Finance	3
<b>Elective Courses for Semester-VII</b>		
FIN-8703	Taxation Management	3
FIN-8704	Portfolio Management	3
FIN-8705	Analysis of Financial Statements	3
FIN-8706	Bank Management	3
FIN-8707	Credit Management	3



<b>HUMAN RESOURCE MANAGEMENT</b>		
<b>Course Code</b>	<b>Title</b>	<b>Credit Hrs.</b>
<b>Elective Courses for Semester-V</b>		
HRM-7507	Performance Management	3
HRM-7508	Human Resource Development	3
HRM-7509	Negotiation and Conflict Management	3
<b>Elective Courses for Semester-VI</b>		
HRM-7607	Seminars in Human Resource Management	3
HRM-7608	Collective Bargaining & Wage Policy	3
<b>Elective Courses for Semester-VII</b>		
HRM-8708	Change Management	3
HRM-8709	Organizational Development	3
HRM-8710	Learning & Management Development	3
HRM-8711	Strategic Human Resource Management	3
HRM-8712	HR in Public Sector	3



<b>MARKETING</b>		
<b>Course Code</b>	<b>Title</b>	<b>Credit Hrs.</b>
<b>Elective Courses for Semester-V</b>		
MKT-7510	Brand Management	3
MKT-7511	Global Marketing	3
MKT-7512	Seminars in Marketing	3
<b>Elective Courses for Semester-VI</b>		
MKT-7609	Consumer Behavior	3
MKT-7610	Advertising & Promotion	3
<b>Elective Courses for Semester-VII</b>		
MKT-8713	Sales Management	3
MKT-8714	Services Marketing	3
MKT-8715	Marketing Research	3
MKT-8716	Marketing Channels	3
MKT-8717	Strategic Marketing	3



### **Masters in business administration (MBA 1.5 Year)**

The MBA 1.5 Year degree program is designed to serve the needs of those who already hold an honors' degree in business or commerce and now looking for a Masters to be at par with MBA 3.5 years. The program will meet the increasing demand for advanced business education which will not only combine text book learning with case study

methodology but will expose students to an Environment which will facilitate development of their conceptual skills as well as personal growth. By the end of program, the students will feel comfortable taking up leadership and decision making roles to can work across disciplines and cultures to manage change, develop creative innovative.

Admission Criterion Applicants should have a B.Com/ BBA (Hons.) Or equivalent degree with 2.5/4.0 CGPA.

### **SCHEME OF STUDIES**

<b>Code</b>	<b>Title</b>	<b>Credit Hours</b>
1	Core courses	18
2	Specialization	12
3	Research Project	06
<b>TOTAL</b>		<b>36</b>



Code	Title	Credit Hours
<b>Semester-I</b>		
1	Core Course-I	03
2	Core Course-II	03
3	Core Course-III	03
4	Elective-I	03
5	Elective-II	03
	Total	15
Code	Title	Credit Hours
<b>Semester-II</b>		
1	Core Course-IV	03
2	Core Course-V	03
3	Core Course-VI	03
4	Elective-III	03
5	Elective-IV	03
	Total	15

### CORE COURSES

Code	Title	Cr. Hrs.	Code	Title	Cr. Hrs.
<b>MBA 7101</b>	Advance Research Methods	03	<b>MBA 7201</b>	Advances in Entrepreneurship	03
<b>MBA 7102</b>	Project Management	03	<b>MBA 7202</b>	Corporate Governance	03
<b>MBA 7103</b>	Quantitative Techniques in Business	03	<b>MBA 7203</b>	Organizational Development	03
<b>MBA 7104</b>	Economic Analysis	03	<b>MBA 7204</b>	SME Management	03
<b>MBA 7105</b>	Knowledge Management	03			



### Human Resource Management

Code	Title	C. Hrs
MBA 7106	Human Resource Development	03
MBA 7107	Change Management	03
MBA 7108	Negotiation & Conflict Management	03
MBA 7109	Strategic Human Resource Management	03
MBA 7205	Compensation & Reward Management	03
MBA 7206	Performance Management	03
MBA 7207	Industrial Psychology	03
MBA 7288	Seminars in HRM	03
MBA 7209	Leadership	03
MBA 7210	Recruitment and Selection	03

### Finance

Code	Title	C. Hrs
MBA 7110	Financial Decision Making	03
MBA 7111	Financial Markets	03
MBA 7112	Commercial & Investment Banking	03
MBA 7113	Seminar in Finance	03
MBA 7114	International Financial Management	03
MBA 7211	Security Analysis & Portfolio Management	03
MBA 7212	Treasury & Fund Management	03
MBA 7213	Corporate Finance	03
MBA 7214	Financial Risk Management	03
MBA 7215	Behavioral Finance	03

### Marketing

Code	Title	C. Hrs
MBA 7115	Advertising & Promotion	03
MBA 7116	Strategic Marketing Planning	03
MBA 7117	Marketing Research	03
MBA 7118	Sales Management	03
MBA 7119	Services Marketing	03
MBA 7216	Seminars in Marketing	03
MBA 7217	Product and Brand Management	03
MBA 7218	Consumers Behavior	03
MBA 7219	Marketing Channels	03
MBA 7301	Research Project	06



## **Master's in Business Administration (MBA 2 Year (Executive))**

This degree is specifically aimed to cater the needs of those professionals who are rich in industry experience working at different tiers of management but lack on the academic side. The curriculum has been designed to develop in-depth understanding of all business functions. The curriculum is based on technical, data-driven, quantitative skills to make objective decisions with the interpersonal and communication skills necessary to work effectively with people at all levels and from all cultures. The Program will meet the increasing demand for advanced business education which will not only combine text book learning with case study methodology but will expose students to

an environment which will facilitate development of their conceptual skills as well as personal growth.

### **ELIGIBILITY**

Applicants should have a 14 years education with 4 years industry experience or a 16 year education with 2 years industry experience. Candidates having passed their degrees in annual system must have at least 45 percent marks and in semester system 2.5/4.0 CGPA.

### **Duration**

It is a 2 years degree program with 4 semesters and consisting of 66 credit hours: 48 credit hours for core courses; 12 credit hours for specialization courses and a 3 credit hour Research project.





## Scheme of Study

<b>Duration:</b>	4 Semesters	
<b>Course Work:</b>	60 Credits	
<b>Oral/Comprehensive Examination</b>	S/U Basis	
<b>Internship/Research Project:</b>	3 Credit Hours	
<b>Total:</b>	63 Credits	
<b>Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
<b>Semester-I</b>		
EMB-5101	Financial Accounting	3
EMB-5102	Principles of Marketing	3
EMB-5103	Principles of Management	3
EMB-5104	Business Mathematics & Statistics	3
EMB-5105	Business Communication	3
	<b>Total Credit Hours</b>	<b>15</b>
<b>Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
<b>Semester-II</b>		
EMB-5201	Cost Accounting	3
EMB-5202	Human Resource Management	3
EMB-5203	Quantitative Techniques in Business	3
EMB-5204	Business Finance	3
EMB-5205	Managerial Economics	3
	<b>Total Credit Hours</b>	<b>15</b>



Code	Course Title	Credit Hours
<b>Semester-III</b>		
EMB-6301	Marketing Management	3
EMB-6302	Financial Management	3
EMB-6303	Business Research Methods	3
EMB-	Elective I	3
EMB-	Elective II	3
<b>Total Credit Hours</b>		<b>15</b>
Code	Course Title	Credit Hours
<b>Semester-IV</b>		
EMB-6401	Strategic Management	3
EMB-6402	Project Management	3
EMB-6403	Organizational Behavior	3
EMB-	Elective III	3
EMB-	Elective IV	3
EMB-6410	Business Project	3



## SPECIALIZATION COURSES

### HUMAN RESOURCE MANAGEMENT

Code	Course Title	C Hrs.
EMB-6304	Strategic Human Resource Management	03
EMB-6305	Human Resource Development	03
EMB-6306	Negotiation & Conflict	03
EMB-6307	Change Management	03
EMB-6308	Compensation & Reward Management	03
EMB-6404	Performance Management	03
EMB-6405	Industrial Psychology	03
EMB-6406	Seminars in HRM	03
EMB-6407	Leadership	03
EMB-6408	Recruitment and Selection	03

### MARKETING

Code	Course Title	C. Hrs
EMB-6313	Marketing Research	03
EMB-6314	Consumers Behavior	03
EMB-6315	Advertising & Promotion	03
EMB-6416	Sales Management	03
EMB-6417	Services Marketing	03
EMB-6418	Seminars in Marketing	03

### Finance

Code	Course Title	C Hrs
EMB-6309	Security Analysis & Portfolio Management	03
EMB-6310	Commercial & Investment Banking	03
EMB-6311	Financial Markets	03
EMB-6312	Behavioral Finance	03
EMB-6411	International Financial Management	03
EMB-6412	Financial Decision Making	03
EMB-6413	Analysis of Financial Statements	03
EMB-6414	Corporate Finance	03
EMB-6415	Financial Risk Management	03



## MS in Management Sciences

The MS in Management Sciences is a research based degree program. It is designed to find out solutions of the problems in the economy. Mainly factors contributing to the high quality of research and training of students: The basics of business such as management, marketing, commerce, IT and computer sciences; and focus on the rigorous analysis of business problems.

### ELIGIBILITY

A minimum of 16 year of education with MBA/M.Com/MPA/BBA (4 year)/B.Com (4 year)/BS Management (4 year) or equivalent with second division or 2.50 CGPA on the scale of 4.00 from any institution recognized by HEC Pakistan.

### SCHEME OF STUDY

Sr. No	Title	Credit Hours
1	Core courses	12
2	Specialization	12
3	Conference/ Seminar	01
4	Thesis	06
Total		31



### CORE COURSES

Code	Title	Credit Hours
<b>MS-7101</b>	Advanced Research Methods and Statistical Packages	03
<b>MS-7102</b>	Behavioral Finance	03
<b>MS-7201</b>	Philosophy of Management	03
<b>MS-7202</b>	Advanced Services Marketing	03

### SPECIALIZATION COURSES

MANAGEMENT		
Code	Course Title	Credit Hours
MS-7103	Management of NGOs	03
MS-7104	Seminar on Strategic Knowledge Management	03
MS-7105	Current Issues in Management	03
MS-7106	Advances in Supply Chain Management	03
MS-7203	Topic in Quality Management	03
MS-7204	Project Management	03
MS-7205	Operations Management	03



### HUMAN RESOURCE MANAGEMENT

Code	Course Title	Credit Hours
MS-7107	Career Management & Planning	03
MS-7108	Human Resource Development	03
MS-7109	Human Resource Information System	03
MS-7206	HRM in Public and Private Sector	03
MS-7207	Organization Development	03
MS-7208	Industrial Relations and Labor Law in Pakistan	03

### MARKETING

Code	Course Title	Credit Hours
MS-7110	Customer Relationship Management	03
MS-7111	Advance Topics in Consumer Behavior	03
MS-7112	Product Management	03
MS-7113	Strategic Marketing	03
MS-7114	Brand Management	03
MS-7209	Current issues in Advertising Management	03
MS-7210	Current Issues in Marketing	03
MS-7211	Sales management	03
MS-7212	Services marketing	03



## FINANCE

Code	Course Title	Credit Hours
MS-7115	Islamic Finance	03
MS-7116	Banking Management	03
MS-7117	Insurance Management	03
MS-7118	Behavioral Finance	03
MS-7119	Case Studies in Corporate Finance	03
MS-7213	Financial Management of MNCs	03
MS-7214	Issues in Financial Reporting	03
MS-7215	Financial Modeling	03
MS-7216	Advance portfolio management	03

## ACCOUNTING

Code	Course Title	Credit Hours
MS-7120	Advanced Accounting Theory & Problems	03
MS-7121	Governmental Accounting	03
MS-7122	Advanced Auditing techniques	03
MS-7217	Cost Accounting for Selected Industries	03
MS-7218	Management Accounting	03
MS-7219	Accounting for Venture Capital & Mutual Funds	03



## ENTREPRENEURSHIP

Code	Course Title	Credit Hours
MS-7123	Social Entrepreneurship	03
MS-7124	Entrepreneurial Finance	03
MS-7125	Inventions and Patents	03
MS-7126	Entrepreneurial Marketing	03
MS-7220	International Entrepreneurship	03
MS-7221	Technology Commercialization	03
MS-7222	Advances in business strategy	03
MS-7223	Techno Entrepreneurship	03





## **Department of Banking and Finance**

### **BS in Banking and Finance**

The department of banking and finance is an educational research oriented non-profit organization with the objective of promoting intellectual, logical and scientific thoughts and discussions on institutions of banking and finance. The institute is dedicated to produce well-trained, highly competent personnel and executives with the required talent in the banking and finance industry.

### **Objectives**

The objective of Department of Banking and finance is the injunctions of the financial and banking culture. It is aimed to create a platform for new generation of academic students, researchers, scholars, business managers, financiers, bankers and economists who can effectively and productively deals with the present business challenges and difficulties in the exhibits of principles of banking and finance teachings by conveying knowledge and education using different modes of learning methods.

The ultimate objective is to

- Organizing teachings of banking and finance at all levels
- Research Culture and Analytical Thinking - Conducting advance studies & research in the relevant areas
- Develop Industry Partnership- Promoting cooperation with other leading educational and research institutions in the Islamic banking and finance and allied disciplines
- Providing training & consultancy services to public and private organizations
- Develop, Conduct and Promote Training Programs
- Endorse Qualified Human Resources in areas demanded by Industry
- Establish Platform for Trainers and Advisers
- Provide Business advisory in context of Spiritual Heritage of Islam



## Scheme of Study for Bachelor of Science in Banking and Finance

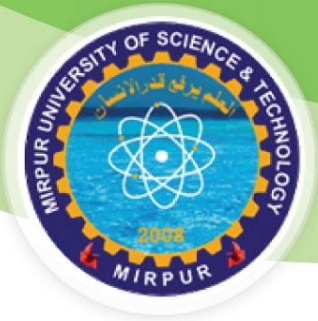
Semester-I		
Course Code	Course Title	Credit Hours
BBF-1101	Financial Accounting I	3(3-0)
COM-1105	Introduction to Computers	3(3-0)
ECO-1106	Microeconomics	3(3-0)
ENG-1107	Functional English I	3(3-0)
ISL-1112	Islamic Studies	3(3-0)
MAT-1115	Business Mathematics	3(3-0)
Semester –II		
Course Code	Course Title	Credit Hours
BBF-1201	Financial Accounting II	3(3-0)
BBF-1202	Introduction to Finance	3(3-0)
BBF-1203	Introduction to Banking	3(3-0)
ECO-1206	Macroeconomics	3(3-0)
ENG-1207	Functional English II	3(3-0)
PS-1217	Pakistan Studies	3(3-0)
Semester –III		
Course Code	Course Title	Credit Hours
BBF-2301	Introduction to Business	3(3-0)
BBF-2302	Cost Accounting	3(3-0)
ENG-2307	Business Communication	3(3-0)
ITM-2311	Introduction to Management	3(3-0)
STA-2320	Business Statistics	3(3-0)



<b>Semester-IV</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
BBF-2401	Business & Commercial Law	3(3-0)
BBF-2402	Money, Banking and Investment	3(3-0)
BBF-2403	Financial Management	3(3-0)
BBF-2404	Introduction to Marketing	3(3-0)
HRM-2409	Human Resource Management	3(3-0)
<b>Semester-V</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
BBF-3501	Business Ethics	3(3-0)
BBF-3502	Bank Auditing	3(3-0)
BBF-3503	Central Banking	3(3-0)
BBF-3504	Risk Management	3(3-0)
BBF-3505	Financial Statement Analysis	3(3-0)
OB-3516	Organizational Behavior	3(3-0)
<b>Semester-VI</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
BBF-3601	Banking Law and Practice	3(3-0)
BBF-3602	Business Research Methods	3(3-0)
BBF-3603	Corporate Finance	3(3-0)
BBF-3604	Islamic Banking	3(3-0)
BBF-3605	Pakistan Economy	3(3-0)
BBF-3606	SME Finance	3(3-0)



<b>Semester-VII</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
BBF-4701	Management Information System in Banks	3(3-0)
BBF-4702	Portfolio Management	3(3-0)
BBF-4703	International Banking	3(3-0)
BBF-4704	Business Taxation Laws	3(3-0)
BBF-4705	International Trade & Foreign Exchange Management	3(3-0)
<b>Semester-VIII</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
BBF-4801	Credit Analysis & Investment Banking	3(3-0)
BBF-4802	Marketing of Banking Products & Financial Services	3(3-0)
BBF-4803	Money & Capital Markets	3(3-0)
BBF-4804	Research Project	6(6-0)
<b>Total Credit Hours</b>		<b>132</b>



## **Department of Commerce**

### **Programmes offered**

1. BS in Commerce
2. Master's in commerce

### **BS Commerce:**

The commerce qualification is in great demand across the corporate world due to emergence of corporate governance and issues related to better custodians of public wealth.

Four year BS Commerce program mainly focuses upon the vital areas of study like that of accounting, auditing, finance, taxation, computer applications, banking, e-commerce, economics, law, statistics, management and marketing.

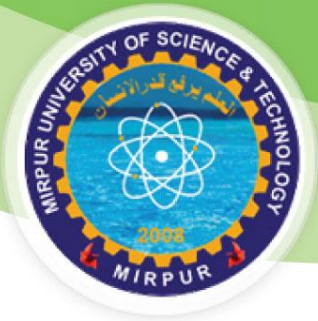
Sharp minds are catered in our department aiming at setting and imparting latest trends and setting new traditions into the field of commerce, business and entrepreneurship. Vim and vigor of the faculty is hereby reflected by the inclination of perfections in all the relevant fields of study by the students.

Students are guided by offering them variety of courses developed in the line of knowledge enrich outline to prepare worthy managers and administrators in numerous fields of life. The education at MBS will provide advanced and in-depth knowledge of various subjects at undergraduate and postgraduate level so they may start their professional career better than simply master degree holders.

It is a 4 year degree program with 8 semesters and consisting of 129 credit hours including Business Project/Internship Report of 3 credit hours.

### **Why BS Commerce:**

Major aim of this program is to prepare the mind of youngsters so that they may gather appropriate knowledge of commerce, business, accounting, finance, and economics and can get familiarized with tally of research. In precise verdict such field of subjects helps the nation to produce quality management in their entire respective field of life. Students here opt state of



the art computer lab, multimedia and internet for benefiting their minds by getting useful and latest knowledge about their subject or field of interest and hover around latest infrastructure.

With the economic development of the country, the commercial activity increases which resulted in creation of employment. As every business activity needs finance and accounting as core function, therefore, qualification in this field facilitates better job prospects and quick entry to the practical field. Further, knowledge of accounting and finance helps science students to excel in their career e.g., science students in advance stage of their career, may require financial management skills to prepare budget and forecasts, managing cash inflows and outflows, etc. for their department. The accounting and finance skills assist such professionals to reach to top management positions including heading their own departments of technical nature. Further, accounting and finance has close relationship

with logics and mathematics. It is observed that students with mathematical background find accounting and finance related courses more convenient to study as compared to any other professional.

Human Resource (HR) and Training & Development are emerging areas. The knowledge of accounting and finance helps HR professionals to have better understanding of payroll, compensation and reward management, while ensuring cost and benefit analysis (CBA). It will facilitate them to prepare better projections about organization's financial liability to manage human resources. With regard to training and development, professionals dealing in this area need skills to prepare financial feasibility, income statements, etc. to launch and conclude training programs.

**Mission Statement of BS Commerce:**

Purpose of offering admissions in BS Commerce is to equip the students with proper understanding towards the field of



business and industry so that they can pursue their bright career in future endeavours.

**Core objective of BS Commerce:**

Providing quality education to the young men and women so that they should develop lust for having compatible knowledge of all the major areas of finance, accounting, economics, management, commerce and most essentially pre-requisites of research, which promises their future growth and successful excel in their relative field of study.

Let the students be familiarizing with the cruxes of wide range of problems and practices into the fields of commerce, industry and economy.

Improving the analytical footings of the aspirants so that they should have sufficient knowledge of the techniques that are used to reduce or probably resolve at large managerial problems.

For maintaining concrete beneficial relation-ship with commerce, trade, industry, government and non- profit organizations and to develop intellect minds that could serve the future office needs better.

Preparing and proliferation the minds of the young men and women and to furbish them with entrepreneurial calibre and thrift that is necessary to revive in today's global community.

**Student Learning Outcomes:**

Students qualified the degree of BS Commerce will undoubtedly:

- 1: Be familiar to the crux of business and industrial persuasions
- 2: Be in a position to use efficiently the relevant knowledge in the field of commerce and industry.
- 3: Be easily highlighting the way outs of the problems and practices into the fields of commerce.



4: Be having improved analytical footing of the aspirants so that they should have sufficient knowledge of the techniques used to reduce or probably resolve at large managerial problems.

5: Be maintaining concrete beneficial relation-ship with commerce, trade, industry, government and non-profit organizations.

6: Be having sufficient intellectual mind that could let them serve future needs better

7: Be having a decent and gentle man personality that is reflected through their analytical the thoughtful approach towards their field of study.

### **BS Commerce Student Outcomes:**

The aspirants should be able to:

- Communicate effectively the problems and crux of commerce, industry and business.

- Have a thought full personality with sharp minded approach in communication the recent trends in the field of commerce.
- Having good financial and economic back ground of study help them know comprehensively about the global changing patterns in business world.
- Having ability to use variety of analytical tools in order to judge the current state of business in all respect.

### **General Assessment:**

Each semester contains 18 weeks of study that is exclusive of two weeks devoted for the conduction of midterm and final term examination. Midterm examination is to commence after 8 weeks of study and final term examination after 7 weeks of study since the resume of class work very after midterm examination. In the meantime students are awarded sessional marks which are justified in the line with the take up of written quizzes and assignments on various topics.





After 6th semester each student undergoes 8-10 weeks of internship in some reputable and renowned organization and is required to prepare internship report at the climax. Internship viva voce and comprehensive examination is mandatory to be qualified before issuance of final result transcript or degree. Internship viva voce and comprehensive examination/Viva is scheduled at an appropriate time and date after the successful fade of last semester.

### **Internship:**

Nothing compares to hands on experience. BS Commerce program has requisites of 8 to 10 weeks of internship programs that executed in renowned banks, industry and accountancy firms etc. which upgrade student knowledge and sharpens his/her skills so that they are to get industry ready. One the successful completion of all degree requirements, the aspirants let wide job placement market open diligently for themselves. They can easily pursue their career endeavors in industry,

media and communication as well as multi-national organizations. They can also opt professional accountancy courses wherein they qualify to be accorded exemptions in some of the subjects offered to them in subsequent study tenure.

1. Finance
2. Marketing
3. Human Resource Management
4. Accounting

<b>Eligibility Criteria for Admission:</b>	
<ul style="list-style-type: none"> <li>• Higher Secondary School Certificate (HSSC) or Equivalent securing at least 45% marks in aggregate.</li> <li>• Entry Test as per University rules.</li> </ul>	
<b>Degree Requirements:</b>	
Candidates must successfully complete following requirements for grant of BS Commerce degree:	
<b>Courses</b>	<b>Semester Credit Hrs.</b>
(a) Core Courses	117 SCH
(b) Elective	09 SCH
(c) Internship Report	03 SCH
<b>Total</b>	<b>129 SCH</b>



### Scheme of Study of (BS Commerce)

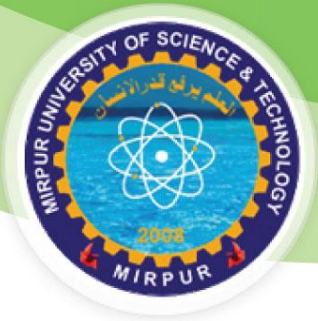
<b>Duration:</b>	08-12 Semesters	
<b>Course Work:</b>	126 Credits	
<b>Oral / Comprehensive Examination</b>	S/U Basis	
<b>Internship Report</b>	03 Credits	
<b>Total Credit Hours:</b>	129 Credits	
<b>Semester-I</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
HUM -1101	Islamic & Pakistan Studies	3(3-0)
MAT-1102	Business Mathematics	3(3-0)
ACC-1103	Financial Accounting-I	3(3-0)
ENG-1104	Functional English	3(3-0)
ITB-1105	Introduction to Business	3(3-0)
<b>Semester –II</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
ENG -1201	Business Communication & Report Writing	3(3-0)
STA -1202	Business Statistics	3(3-0)
ACC -1203	Financial Accounting-II	3(3-0)
ECO-1204	Micro Economics	3(3-0)
FIN-1205	Banking Currency & Finance	3(3-0)



<b>Semester –III</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
COM-2301	Computer applications in Business	3(3-0)
ACC-2302	Advance Accounting	3(3-0)
ECO-2303	Macro Economics	3(3-0)
TAX-2304	Business Taxation	3(3-0)
LAW-2305	Business Law	3(3-0)
<b>Semester-IV</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
MKT-2401	Principles of Marketing	3(3-0)
FIN-2402	Introduction to Business Finance	3(3-0)
ECO-2403	Economics of Pakistan	3(3-0)
AUD-2404	Auditing	3(3-0)
ACC-2405	Fundamentals of Cost Accounting	3(3-0)
<b>Semester-V</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
MGT-3501	Principles of Management	3(3-0)
ENT-3502	Entrepreneurship	3(3-0)
RES-3503	Research Methods in Business	3(3-0)
ENG-3504	Interpersonal Skills	3(3-0)
MKT-3505	Consumer Behaviour	3(3-0)



<b>Semester-VI</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
LAW-3601	Banking Law and Practice	3(3-0)
FIN-3602	Financial Management	3(3-0)
ECM-3603	E-Commerce	3(3-0)
BET-3604	Business Ethics	3(3-0)
MGT-3605	Organizational Behaviour	3(3-0)
ACC/FIN/MKT/HRM	Elective-I	3(3-0)
<b>Semester-VII</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
LAW-4701	Corporate Law	3(3-0)
MGT-4702	Human Resource Management	3(3-0)
MGT-4703	Insurance & Risk Management	3(3-0)
ACC-4704	Management Accounting	3(3-0)
MGT-4705	Project Management	3(3-0)
ACC/FIN/MKT/HRM	Elective-II	3(3-0)



Semester-VIII		
Course Code	Course Title	Credit Hours
FIN-4801	International Business & Finance	3(3-0)
MGT-4802	Operation & Production Management	3(3-0)
MGT-4803	Performance Management	3(3-0)
MGT-4804	Strategic Management	3(3-0)
ACC/FIN/MKT/HRM	Elective-III	3(3-0)
INR- 4812	Internship Report*	3(3-0)
<b>Total Credit Hours</b>		<b>129</b>

\* A detailed research project of an industry in the field of specialization of the candidate.

**Optional Subjects:** Any one course from the selected field of specialization.

### FIELDS OF SPECIALIZATION:

<b>Finance:</b>	<b>Marketing:</b>
FIN-3606 Analysis of Financial Statements	MKT-3607 Advertising & Promotion
FIN-4706 Investment Analysis & Portfolio Management	MKT-4707 International Marketing
FIN-4805 Corporate Finance	MKT-4806 Brand Management
<b>HRM:</b>	<b>Accounting:</b>
HRM-3608 Human Resource Development	ACC-3609 Advance Financial Accounting
HRM-4708 Organizational Development	ACC-4709 Advance Cost Accounting
HRM-4807 Negotiation and Conflict Management	ACC-4808 Strategic Management Accounting



## **MASTERS IN COMMERCE**

The M.Com two year program is offered to equip students with the latest tools available in the field of Commerce and Business. The program is designed to fulfill the needs of Commerce graduates fully capable of handling the matters related to Accounting, Management, Finance, Audit, Taxation, and Banking.

M.Com level, the course work at emphasis is on research orientation, problem solving, entrepreneurial skills, management skills and all ingredients required to perfect leadership qualities. Our M.Com program is known for teaching excellence and for combining high academic standards with practical application in today's rapidly changing business environment. Students are encouraged to challenge different viewpoints provided by the course material, teacher or their peers. The skills are developed to critically analyze the issues and develop logical reasoning. We believe that organizational

leadership is the most significant element of success in modern-day intensely competitive world.

During the program, M.Com students are required to do internship and write an intership report. This exercise provides a unique opportunity to develop skills, knowledge and career potential. It could be a theoretical work or specific industry oriented research addressing or exploring key issues. In either case it must be of some value to an industry, an organization or policy makers. The wide range of specialization areas gives students the opportunity to tailor their studies to individual interests and/or career plans.



### Specialization Areas

1. Accounting
2. Finance

### Admission Requirements

- Eligibility Criteria: B.Com with at least 2<sup>nd</sup> division for admission in M.Com.
- Entry Test.

### Degree Requirements:

Candidates must successfully complete following requirements for grant of M.Com degree:

Courses	Semester Credit Hrs.
(a) Core Courses	50 SCH
(b) Elective	12 SCH
(c) Business Project/Internship	03 SCH
<b>Total</b>	<b>65 SCH</b>

### SCHEME OF STUDY AND COURSE STRUCTURE SEMESTER WISE

<b>Duration:</b>	04-06 Semesters	
<b>Course Work:</b>	62 Credits	
<b>Oral / Comprehensive Examination</b>	S/U Basis	
<b>Internship Report</b>	03 Credits	
<b>Total Credit Hours:</b>	65 Credits	
<b>First Semester</b>		
MC-511	Principles of Management	3
MC-512	International Business	3
MC-513	Advance Cost Accounting	3
MC-514	Financial Accounting	3
MC-515	Computer Application in Business	3



	<b>Total Credit Hours</b>	<b>15</b>
<b>Second Semester</b>		
MC-521	Financial Management	3
MC-522	Principles of Marketing	3
MC-523	Project Management	3
MC-524	Business Communication	3
MC-525	Advanced Financial Accounting	3
MC-526	Seminar on CPEC	2
	<b>Total Credit Hours</b>	<b>17</b>
<b>Third Semester</b>		
MC-631	Research Methods & Techniques	3
MC-632	Managerial Accounting	3
MC-633	Quantitative Techniques in Business	3
MC-	Elective course	3
MC-	Elective course	3
	<b>Total Credit Hours</b>	<b>15</b>
<b>Optional Subjects:</b>	Any two courses from the selected field of specialization.	
<b>Forth Semester</b>		
MC-641	Human Resource Management	3
MC-642	Corporate Finance	3
MC-643	Strategic Management	3
MC-	Elective course	3
MC-	Elective course	3
MC-650	Internship Report	3
	<b>Total Credit Hours</b>	<b>18</b>





. **Optional Subjects:** Any two courses from the selected field of specialization.

## FIELDS OF SPECIALIZATION

### Finance

Course Code	Subjects Title	Credit Hrs
MC-634	Islamic Principles of Finance	3
MC-635	Banking Management	3
MC-636	Financial Institutions & Markets	3
MC-637	Insurance Management	3
MC-638	Portfolio Management	3
MC-639	International Finance	3

### Accounting

Course Code	Subjects Title	Credit Hrs
MC-644	Advanced Accounting Theory & Problems	3
MC-645	Public Accounting	3
MC-646	Advanced Auditing and Assurance	3
MC-647	Cost Accounting for Selected Industries	3
MC-648	International Accounting	3
MC-649	Advanced Management Auditing	3



**FACULTY OF  
HEALTH AND  
MEDICAL SCIENCES**



**Convener:**

Prof. Dr. Maqsood Ahmed

Tel: +92-5827-961014

**Convener's Message**

It's a matter of great honor for me to lead the Faculty of Health & Medical Sciences as a pioneer as well as founder member. In COVID-19 pandemics, I feel a profound sense of responsibility to address vital segment of health care apparatus by bridging academic horizons with treatment innovations, healthy lifestyles and technological advance landscapes of health practice. I am fully cognizant of its importance in nurturing ground breaking ideas particularly with reference to allied health sciences. The faculty has been assigned radical education programs in a very short span of time by the grace of Almighty Allah. Excellent planning has been executed for building above board proficiency and capacity of the Faculty that will result in producing diverse leaders of their relevant fields. I invite you to pursue our offered programs under the wisdom and virtue of MUST located in one of the excellent locations nearby Mangla Dam.

# DEPARTMENT OF HUMAN NUTRITIONS & DIETETICS

## Program Vision

"Better health through judicious intake of food"

## Degree Programs Offered

BS-Human Nutrition & Dietetics





### **Coordinator:**

Dr. Mian M. Zeeshan Javaid

Tel: +92-5827-961014

E-mail: [drzeeshan@must.edu.pk](mailto:drzeeshan@must.edu.pk)

### **Message from Coordinator:**

Its great honor for me to be the pioneer Chairperson of Department of Human Nutrition & Dietetics. As being an educationist, I am always determined to make efficient and transparent administration. The environment will be made conducive to learning, equipping the youth with practical knowledge so that our graduates may prove to be a beneficial addition in professionalism of under developed region. Nutrition's main way of control is through your diet and way of living. Candidates having knowledge of this will benefit them immensely in providing results for negative deficiencies in regards to health. With young people focusing on the needs and requirements of their nutritional intake, it will help them to distinguish between all the negative issues created because of poor control in diet and health. By utilizing professional impacts of novel food research, nutritional issues can be addressed and ultimately there will be eminent bonus in securing the positive health of our employees in the health apparatus. May Allah bless you with the virtue of knowledge and the hobby of serving the humanity, the society, the nation and of course your family



## **B.S. Human Nutrition & Dietetics**

Human nutrition encompasses an extremely broad range of medical, social, commercial, and ethical domains and thus represents a wide, interdisciplinary scientific and cultural discipline. MUST has realized high prevalence of both disease-related malnutrition and overweight/obesity problems in community of underdeveloped region of Kashmir & Pakistan. In order to contribute towards vital segment of Health, Mirpur University of Science & Technology (MUST) has opted as academic responsibility to initiate new horizons of knowledge in Human Nutrition & Dietetics thus addressing important risk factors for disease burden and mortality worldwide.

### **Program Mission**

To serve the community through promoting academically and culturally diverse environment based on improved nutrition status through judicious intake of food; thus increased awareness about improved food choices at national as well as international levels.

### **Program Educational Objectives (PEOs)**

BS in Human Nutrition & Dietetics is a comprehensive course; encompassing the understandings what a body wants and what it needs on certain health parameters. Its diversity of delivering practical knowledge is focusses towards:

- Critical evaluation of food through nutrition, dietetics and research
- People management- learning to interact with patients and students
- Real time industry association with dieticians and clinicians
- Application of customized advanced diet therapy
- Fraternity interactions with professionals at research projects and conferences
- Finding a seamless integration between medicine, chemistry and food to nourish the body and treat ailments

#### **Degree Requirements:**

F.Sc. (Pre-medical) or equivalent with 60% minimum marks

#### **Duration:**

Four Years (8 Semesters)

### Scheme of Study: BS Program

<b>Total credit Hours</b>		137
<b>Total Duration</b>		8-12 Semesters
<b>1<sup>st</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
HND-1101	Fundamentals of Human Nutrition	3+0
HND-1102	Essentials of Food Science & Technology	2+1
STA-1120	Biostatistics	3+0
ENG-1107	English-I	3+0
CHE-1104	Introductory Biochemistry	2+1
PS-1117	Pak Studies	2+0
<b>Total Credit Hours</b>		<b>17</b>
<b>2<sup>nd</sup> Semester</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
HND-1201	Macronutrients in Human Nutrition-I	3+0
ENG-1207	English-II	3+0
ISL-1212	Islamic Studies/Ethics	2+0
HND-1202	Food Safety and Quality Management	2+0
HND-1203	Human Physiology-I	2+1
SOC-1221	Fundamental of Sociology	3+0
<b>Total Credit Hours</b>		<b>16</b>
<b>3<sup>rd</sup> Semester</b>		



Course Code	Subject	Credit Hours
HND-2301	Macronutrients in Human Nutrition-II	3+0
HND-2302	Introductory Molecular Genetics	2+1
ENG-2307	English-III	3+0
HND-2303	Human Physiology-II	2+1
HND-2304	Food Microbiology	2+1
HND-2305	Human Anatomy	2+1
<b>Total Credit Hours</b>		<b>18</b>
4 <sup>th</sup> Semester		
Course Code	Subject	Credit Hours
ARA-2401	Arabic	3+0
COM-2405	Computer Science & Information Technology	2+1
HND-2401	Assessment of Nutritional status	2+1
HND-2402	Nutrition through the Life Cycle	3+0
HND-2403	General Pathology	2+1
HND-2404	Food Analysis	1+2
<b>Total Credit Hours</b>		<b>18</b>





<b>5<sup>th</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
HND-3501	Dietetics-I	2+1
HND-3502	Nutrition & Psychology	3+0
HND-3503	Nutritional Education & Awareness	2+1
HND-3504	Meal Planning & Management	2+1
HND-3505	Public Health Nutrition	2+1
HND-3506	Food & Drug Laws	2+0
<b>Total Credit Hours</b>		<b>17</b>
<b>6<sup>th</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
HND-3601	Dietetics-II	2+1
HND-3602	Functional Foods & Nutraceuticals	3+0
HND-3603	Nutrition through social protection	2+0
HND-3604	Sports Nutrition	2+1
HND-3605	Infants & Young Children Feeding	2+1
HND-3606	Clinical Biochemistry	1+2
<b>Total Credit Hours</b>		<b>17</b>



7 <sup>th</sup> Semester		
Course Code	Subject	Credit Hours
HND 4701	Dietetics-III	2+1
HND-4702	Global Food Issues	3+0
HND-4703	Research Methods in Nutrition	3+0
HND-4704	Nutritional Practices in Clinical Care	2+1
<b>Elective Group (Minimum Two Subjects of Total 05 Credit Hours)</b>		
HND-4705	Nutritional Immunology	3+0
HND-4706	Drug Nutrient Interaction	2+0
HND-4707	Food Chemistry	2+0
HND-4708	Preventive Nutrition	3+0
HND-4709	Nutrition in Emergencies	3+0
<b>Total Credit Hours</b>		<b>17</b>
8 <sup>th</sup> Semester		
Course Code	Subject	Credit Hours
HND-4801	Internship/Project	0+6
HND-4802	Nutrition Policies & Programs	3+0
HND-4803	Food Service Management	3+0
<b>Elective Group (Minimum Two Subjects of Total 05 Credit Hours)</b>		
HND-4804	Food Toxin and Allergies	3+0
HND-4805	Nutritional Deficiency Disorder	3+0
HND-4806	Food Supplement	2+0
HND-4807	Metabolism of Nutrients	2+0
HND-4808	Nutrition Epidemiology	2+0
<b>Total Credit Hours</b>		<b>17</b>



## Students' Messages

It's a great honor for me to be the part of Human Nutrition & Dietetics Department of MUST. I found here an admirable environment for civilizing my learning and exploring abilities. The labs are up to date and the equipment available is the modern of its kind. There is a great focus on practical work. I'm very much satisfied with highly qualified faculty. I am confident to face challenges and complexities of project related to Human Nutrition & Dietetics. Now it is great opportunity to those who wanted to will rise and shine in the



**WALEED AHMAD ZAFAR**  
**Session: 2019-2023**

It was a great honor for me to learn under the immense knowledge, affection and guidance of the teacher at Department of Human Nutrition & Dietetics. The environment of the education here is very promising to learn and trim the talent. Those looking for the best quality of education are highly recommended to join this institution to make best out of their capability for themselves and for nation.



**NAWAL KHURAM**  
**Session: 2019-2023**

# DEPARTMENT OF MEDICAL LAB TECHNOLOGY

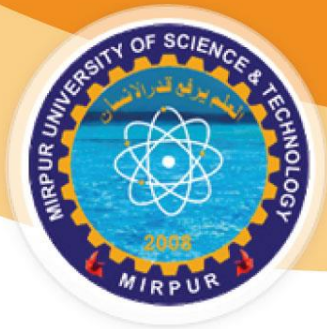


## Program Vision

"Better health through state-of-the-art diagnostics"

## Degree Programs Offered

BS-Medical Lab Technology (MLT)



**Coordinator:**

Dr. Mian M. Zeeshan Javaid

Tel: +92-5827-961014

E-mail: [drzeeshan@must.edu.pk](mailto:drzeeshan@must.edu.pk)

**Message from Coordinator:**

By starting Department of Medical Lab Technology under Faculty of Health & Medical Sciences, MUST has entered into progressive academic plans. COVID-19 pandemics has evolved new opportunities and challenges globally; out of which reliability of diagnostics is the primary subject. Under such circumstances, I am feeling blessed and honored to be part of such future planned civic engagement departments and leading as the pioneer Chairperson of Department of Medical Lab Technology. As being an educationist, I am always determined to make competent and transparent administration.

The field of laboratory testing will be developed with the appearance of sophisticated automated analytical instruments; laboratory scientists will find themselves in the role of making decisions about the validity of data to be used by physicians in medical decisions. It is estimated that 70-80% of a physician's medical decisions on any patient will be a direct result of laboratory test data in near future. I welcome students and wish them a satisfying, safe and beneficial stay at Mirpur university of Science and Technology and beautiful city of Mirpur.



## **BS-Medical Lab Technology (MLT)**

Medical Lab Technology is a biology/chemistry-based bachelor's degree that prepares students for exciting, challenging and dynamic careers in places such as hospital labs and clinics, forensic labs, veterinary clinics, industrial research labs and molecular biotechnology labs. Professionals in this field analyze blood, urine, tissue, and other body specimens. These test results play an important role in the detection, diagnosis, and treatment of disease. Laboratory scientists are in high demand. And with future growth predicted to be above average for all professions, laboratory science provides solid job security.

### **Program Mission**

To provide quality didactic and latest scientific technology-based approaches for establishing affective domains of learning at graduate level. MUST seek professional development that have the best of both worlds i.e. medicine and science.

Exposure of operating complex electronic equipment, precision instruments and be trained to identify various pathogens and human cells using microscopes and a battery of scientific methods will enable physicians to rely over their knowledge and skills in areas of scientific exploration including immunology, microbiology, hematology, chemistry and transfusion medicine.

### **Program Educational Objectives (PEOs)**

The overall goal of the program is to prepare graduates with the potential for progression to clinical laboratory scientists and leadership as supervisors, manager, and educators. The primary goals of the program are:

- To provide well-trained medical laboratory technologists to meet hospital and community needs
- To provide sufficient didactic and technical information for the student to understand analytical processes, interpret analytical results and appreciate the clinical significance of analyses performed in a modern clinical laboratory



- To develop in the student, the technical laboratory skills to perform manual and automated procedures with confidence and reliability
- To provide instruction in laboratory instrumentation, quality control and quality assurance, laboratory management, research and educational methodology
- To provide a stimulating atmosphere to encourage continuing education of clinical laboratory environment
- To have the student achieve passing scores on external certification and licensure examinations

- To develop flexibility to adapt to changing need, new procedures and new topics in clinical laboratory science practice

**Degree Requirements:**

F.Sc. (Pre-medical) or equivalent with 60% minimum marks

**Duration:**

Four Years (8 Semesters)



## Scheme of Study: BS Program

<b>Total credit Hours</b>		133
<b>Total Duration</b>		8-12 Semesters
<b>1<sup>st</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
BML-1101	Human Anatomy-I	3+1
BML-1102	Human Physiology-I	3+1
BPT-1103	Biochemistry-I	3+1
ENG-1107	English-I (Functional English)	2+0
PS-1117	Pakistan Studies	2+0
COM-1105	Introduction to Computer	1+1
Total Credit Hours		18
<b>2<sup>nd</sup> Semester</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BML-1201	Human Anatomy-II	3+1
BML-1202	Human Physiology-II	3+1
BML-1203	Biochemistry-II	3+1
ENG-1207	English-II (Communication Skills)	2+0
ISL-1212	Islamic Studies/Ethics	2+0
BML-1204	Behavioral Sciences	2+0
Total Credit Hours		18





<b>3<sup>rd</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
BML-2301	General Pathology-I	2+1
BML-2302	General Pharmacology-I	2+1
BML-2303	Clinical Bacteriology	2+1
BML-2304	Hematology	2+1
BML-2305	Human Genetics	2+1
BML-2306	Communication Skills	2+0
Total Credit Hours		17
<b>4<sup>th</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
BML-2401	General Pathology-II	2+1
BML-2402	General Pharmacology-II	2+1
BML-2403	RBC Disorders	2+1
BML-2404	Clinical Virology & Mycology	2+1
BML-2405	Chemical Pathology	2+1
ARA-2401	Arabic	3+0
Total Credit Hours		18



<b>5<sup>th</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
BML-3501	WBC and Platelet Disorders	2+1
BML-3502	Histopathology	2+1
BML-3503	Bioinformatics	1+2
BML-3504	Clinical Parasitology	2+1
BML-3505	Clinical Pathology	2+1
BML-3506	Biotechnology	1+1
<b>Total Credit Hours</b>		<b>17</b>
<b>6<sup>th</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
BML-3601	Medical Laboratory Instrumentations	2+1
STA-3620	Biostatistics	3+0
BML-3602	Immunology & Serology	2+1
BML-3603	Research Methodology	2+0
BML-3604	Blood Banking	2+1
BML-3605	Advances in Medical Laboratory Technology	1+2
<b>Total Credit Hours</b>		<b>17</b>



<b>7<sup>th</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
BML- 4701	Medical Laboratory Management Skills	2+1
BML-4702	Fundamentals of Infection Control	1+1
BML-4703	Molecular Biology	2+1
BML-4704	Epidemiology	2+0
BML-4705	Systemic Diagnostic Bacteriology	2+1
BML-4706	Cytology and Cytogenetics	2+1
<b>Total Credit Hours</b>		<b>16</b>
<b>8<sup>th</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
BML-4801	Research Project	0+6
BML-4802	Seminar	1+0
SOC-4821	Medical Sociology	2+1
BML-4804	Bioethics	1+1
<b>Total Credit Hours</b>		<b>12</b>



# DEPARTMENT OF PHARMACY

## Program Vision

"Better health through transformational multidiscipline research"

## Degree Programs Offered

Doctor of Pharmacy (Pharm. D.)



### **Coordinator:**

Dr. Mian M. Zeeshan Javaid

Tel: +92-5827-961014

E-mail: [drzeeshan@must.edu.pk](mailto:drzeeshan@must.edu.pk)

### **Message from Coordinator:**

Pleasure and honor are the deep root feelings to my soul while presenting my message as founder Chairperson of Department of Pharmacy, Faculty of Health & Medical Sciences, Mirpur University of Science & Technology (MUST), Mirpur AJ&K. It's being established with a goal to impart quality education, skills and knowledge in the field of Pharmacy. The philosophy of institute is to transform and redefine the educational process in order to create a new system that is able to engender a new generation of professionals; capable of achieving new heights in academics and health apparatus of the region. This department has been equipped with the most up to date equipment and this will definitely help the youth to be professional Pharmacists in future. I welcome students and wish them a pleasant, safe and productive stay at Mirpur university of Science and Technology and beautiful city of Mirpur.



### **Doctor of Pharmacy (Pharm. D.)**

Discipline of Pharm D (Doctor of Pharmacy) is not a new entity for MUST as it has been opted as public private partnership in the form of Akson College of Pharmacy since 2011. After HEC recommendations, University has planned to establish its own Pharmacy Department. MUST as being a symbol of wisdom and virtue; has laid foundations of such locally and globally demanded entities on environment of critical thinking, quality attributes, human dignity, ethics, excellence, accountability and professionalism. Our primary focus will be to advance societal health through leadership in Pharmacy education, research, community engagements and improved patient care.

### **Program Mission**

“To provide quality pharmacy education & research that contributes significantly to improve health care system of the society, through intra disciplinary approach.”

### **Program Educational Objectives (PEOs)**

- To provide comprehensive pharmacy education to cope the challenges of pharmaceutical care of our health apparatus.
- To produce quality pharmacists capable of steering the helm of affairs of our pharmaceutical industry.
- To foster an environment that enables graduates to acquire knowledge, analytical skills, problem solving attitude and ethical values necessary to enter pharmacy practice and provide patient centered pharmacy services.
- To promote collaboration with other health professions to materialize the concept of rational and cost effective drug use for health promotion and illness prevention of the society.
- To educate the community about misuse/mishandling/compliance of medicines through various civic engagement modules.

### **Admission Criteria**

F.Sc. (Pre-medical) or equivalent with 60% minimum marks.



### Duration

10-14 Semesters

## Scheme of Study (Pharm. D)

1 <sup>st</sup> Semester				
Course Code	Course Title	Lect. Hrs.	Lab. Hrs.	Cr. Hrs.
ENG 300	English-A (Functional English)	2	0	2
PHARM 310	Pharmaceutics-IA (Physical Pharmacy)	3	1	4
PHARM 311	Pharmaceutical Chemistry-IA (Organic)	3	1	4
PHARM 312	Pharmaceutical Chemistry-IIA (Biochemistry)	3	1	4
PHARM 313	Physiology-A	3	1	4
PHARM 314	Anatomy & Histology	3	1	4
			<b>Total</b>	<b>22</b>
2 <sup>nd</sup> Semester				
Course Code	Course Title	Lect. Hrs.	Lab. Hrs.	Cr. Hrs.
ENG 301	English-B (Communication & Writing skills)	4	0	4
PHARM 315	Pharmaceutics-IB (Physical Pharmacy)	3	1	4
PHARM 316	Pharmaceutical Chemistry-IB (Organic)	3	1	4
PHARM 317	Pharmaceutical Chemistry-IIB (Biochemistry)	3	1	4
PHARM 318	Physiology-B	3	1	4
			<b>Total</b>	<b>20</b>



<b>3<sup>rd</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
IS 402	Islamic Studies / Ethics	3	0	3
PHARM 410	Pharmaceutics-IIA (Dosage Forms Science)	3	1	4
PHARM 411	Pharmaceutics-IIIA(Pharmaceutical Microbiology & Immunology)	3	1	4
PHARM 412	Pharmacology and Therapeutics-IA	3	1	4
PHARM 413	Pharmacognosy-IA (Basic)	3	1	4
PHARM 414	Pharmacy Practice-IA (Pharmaceutical Mathematics)	3	0	3
			<b>Total</b>	<b>22</b>
<b>4<sup>th</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
PS 403	Pakistan Studies	2	0	2
PHARM 415	Pharmaceutics-IIB (Dosage Forms Science)	3	1	4
PHARM 416	Pharmaceutics-IIIB (Pharmaceutical Microbiology & Immunology)	3	1	4
PHARM 417	Pharmacology and Therapeutics-IB	3	1	4
PHARM 418	Pharmacognosy-IB (Basic)	3	1	4
PHARM 419	Pharmacy Practice – IB (Bio-statistics)	3	0	3
			<b>Total</b>	<b>21</b>





5 <sup>th</sup> Semester				
Course Code	Course Title	Lect. Hrs.	Lab. Hrs.	Cr. Hrs.
AR 504	Arabic	3	0	3
PHARM 510	Pharmacy Practice-IIA (Dispensing Pharmacy)	3	1	4
PHARM 511	Pharmaceutical Chemistry-IIIA (Pharmaceutical Analysis)	3	1	4
PHARM 512	Pharmacology and Therapeutics-IIA	3	1	4
PHARM 513	Pharmacognosy-IIA (Advanced)	3	1	4
PHARM 514	Pathology	3	1	4
			<b>Total</b>	<b>23</b>
6 <sup>th</sup> Semester				
Course Code	Course Title	Lect. Hrs.	Lab. Hrs.	Cr. Hrs.
PHARM 515	Pharmacy Practice-IIB (Community, Social & Administrative Pharmacy)	3	0	3
PHARM 516	Pharmaceutical Chemistry-IIIB (Pharmaceutical Analysis)	3	1	4
PHARM 517	Pharmacology and Therapeutics-IIB	3	1	4
PHARM 518	Pharmacognosy-IIB (Advanced)	3	1	4
PHARM 519	Pharmacy Practice-III (Computer and its Applications in Pharmacy)	3	1	4
			<b>Total</b>	<b>19</b>



### 7<sup>th</sup> Semester


Course Code	Course Title	Lect. Hrs.	Lab. Hrs.	Cr. Hrs.
PHARM 610	Pharmacy Practice-IVA (Hospital Pharmacy)	3	0	3
PHARM 611	Pharmacy Practice-VA (Clinical Pharmacy-I)	3	1	4
PHARM 612	Pharmaceutics-IVA (Industrial Pharmacy)	3	1	4
PHARM 613	Pharmaceutics-VA (Biopharmaceutics & Pharmacokinetics)	3	1	4
PHARM 614	Pharmaceutics-VIA (Pharmaceutical Quality Management)	3	1	4
			<b>Total</b>	<b>19</b>

### 8<sup>th</sup> Semester

Course Code	Course Title	Lect. Hrs.	Lab. Hrs.	Cr. Hrs.
PHARM 615	Pharmacy Practice-IVB (Hospital Pharmacy)	3	0	3
PHARM 616	Pharmacy Practice-VB (Clinical Pharmacy-I)	3	1	4
PHARM 617	Pharmaceutics-IVB (Industrial Pharmacy)	3	1	4
PHARM 618	Pharmaceutics-VB (Biopharmaceutics & Pharmacokinetics)	3	1	4
PHARM 619	Pharmaceutics-VIB (Pharmaceutical Quality Management)	3	1	4
			<b>Total</b>	<b>19</b>



<b>9<sup>th</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
PHARM 710	Pharmaceutics-VIIA (Pharmaceutical Technology)	3	1	4
PHARM 711	Pharmacy Practice-VIA (Advanced Clinical Pharmacy-II)	3	1	4
PHARM 712	Pharmacy Practice-VIIA (Forensic Pharmacy)	3	0	3
PHARM 713	Pharmacy Practice-VIIIA (Pharmaceutical Management & Marketing)	3	0	3
PHARM 714	Pharmaceutical Chemistry-IVA (Medicinal Chemistry)	3	1	4
			<b>Total</b>	<b>18</b>
<b>10<sup>th</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
PHARM 715	Pharmaceutics-VIIB (Pharmaceutical Technology)	3	1	4
PHARM 716	Pharmacy Practice-VIB (Advanced Clinical Pharmacy-II)	3	1	4
PHARM 717	Pharmacy Practice-VIIB (Forensic Pharmacy)	3	0	3
PHARM 718	Pharmacy Practice-VIIIB (Pharmaceutical Management & Marketing)	3	0	3
PHARM 719	Pharmaceutical Chemistry-IVB (Medicinal Chemistry)	3	1	4
			<b>Total</b>	<b>18</b>



# DEPARTMENT OF PHYSICAL THERAPY

## Program Vision

"Better health through optimization of movements"

## Degree Programs Offered

Doctor of Physical Therapy (DPT)



**Coordinator:**

Dr. Mian M. Zeeshan Javaid

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E-mail: [drzeeshan@must.edu.pk](mailto:drzeeshan@must.edu.pk)

**Message from Coordinator:**

Establishing of Faculty of Health & Medical Sciences in Mirpur University of Science & Technology (MUST) has opened new eras of health caring knowledge in Kashmir as well as Pakistan. Definitely, worth mentioning honor is there for me to be the pioneer Chairperson of Department of Physiotherapy. As being an educationist, I am always determined to make efficient and transparent administration. The environment will be made conducive to learning, equipping the youth with practical knowledge so that our graduates may prove to be a beneficial addition in professionalism of underdeveloped region. The developing needs and increased recognition of Physical Therapist's skills in diagnosing, treating and preventing illness and injuries has necessitated the profession to reevaluate its goals for the future and move towards more autonomy in patient. The DPT degree is quite innovative degree in terms of curriculum, duration of study and scope of clinical study. This degree also fulfills international requirements for physical therapy education, so the DPT graduates could get equivalency easily abroad. I welcome students and wish them a pleasant, safe and productive stay at Mirpur university of Science and Technology and beautiful city of Mirpur.



## **Doctor of Physical Therapy (DPT)**

Physical Therapy is one of the most essential segment of primary health care apparatus. Being associated with both sciences of healing and art of caring; its pertaining to the clinical examination, evaluation, assessment, diagnosis and treatment of musculoskeletal, neurological, cardiovascular and respiratory systems. Its scope broadens towards functional disorders including symptoms of pain, edema, physiological, structural and psychosomatic ailments. The actual methodology includes methods of treatment based on movements, manual therapy, physical agents and therapeutic modalities to 2relieve the pain and other complications.

### **Program Mission**

To serve the community through a dynamic profession with an established theoretical and scientific base clinical applications in the restoration, maintenance, and promotion of optimal physical function; thus developing leadership roles in rehabilitation; in prevention, health maintenance, and

programs that promote health, wellness, and fitness; and in professional and community organizations.

### **Program Educational Objectives (PEOs)**

As Physical Therapy covers basic parameters of healing sciences i.e. preventive, promotive, diagnostic, rehabilitative and curative, so graduates of Physical Therapy will be able to:

- Understand, correlate and apply theoretical foundations of knowledge to the practice of physical therapy.
- Able to identify researchable problems and incorporate research findings into clinical practice.
- Develop sound clinical decision, critical self-assessment and committed to lifelong learning.
- Incorporate and demonstrate positive attitudes and behaviors in all associates.
- Responsive to Health care regulations and policies that are consistent with the needs of the patient and of the society.

### **Admission Criteria**

F.Sc. (Pre-medical) or equivalent with 60% minimum marks



## Scheme of Study (Doctor of Physical Therapy)

<b>Total Semester</b>		10-14 Semesters
<b>Total Duration</b>		178
<b>1<sup>st</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
BPT-1101	Anatomy-I	3+1
BPT-1102	Physiology-I	2+1
BPT-1103	Kinesiology-I	2+1
ENG-1107	English-I (Functional English)	3+0
PS-1117	Pakistan Studies	2+0
COM-1105	Introduction to Computer	2+1
<b>Total Credit Hours</b>		<b>18</b>
<b>2<sup>nd</sup> Semester</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BPT-1201	Anatomy-II	3+1
BPT-1202	Physiology-II	2+1
BPT-1203	Kinesiology-II	2+1
ENG-1207	English-II (Communication Skills)	3+0
ISL-1212	Islamic Studies/Ethics	2+0
SOC-1221	Sociology	2+0
<b>Total Credit Hours</b>		<b>17</b>



<b>3<sup>rd</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
BPT-2301	Anatomy-III	2+1
BPT-2302	Physiology-III	2+1
BPT-2303	Medical Physics	2+1
ENG-2307	English-III (Technical writing & Presentation skills)	3+0
BPT-2304	Biomechanics & Ergonomics-I	3+0
BPT-2305	Biochemistry-I	2+0
<b>Total Credit Hours</b>		<b>17</b>
<b>4<sup>th</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
BPT-2401	Anatomy-IV (Neuro Anatomy)	2+1
BPT-2402	Exercise Physiology	2+1
BPT-2403	Health & Wellness	2+0
BPT-2404	Molecular Biology & Genetics	2+0
BPT-2405	Biomechanics & Ergonomics-II	2+1
BPT-2406	Biochemistry-II	2+1
ARA-2401	Arabic	3+0
<b>Total Credit Hours</b>		<b>19</b>





5 <sup>th</sup> Semester		
Course Code	Subject	Credit Hours
BPT-3501	Pathology& Microbiology-I	2+0
BPT-3502	Pharmacology & Therapeutics-I	2+0
BPT-3503	Physical Agents & Electrotherapy-I	2+1
BPT-3504	Therapeutic Exercises & Techniques	2+1
STA-3520	Biostatistics I	3+0
BPT-3505	Behavioral Sciences (Psychology & Ethics)	2+0
BPT-3506	Supervised Clinical Practice-I	0+3
<b>Total Credit Hours</b>		<b>18</b>
6 <sup>th</sup> Semester		
Course Code	Subject	Credit Hours
BPT-3601	Pathology& Microbiology-II	2+1
BPT-3602	Pharmacology & Therapeutics-II	2+0
BPT-3603	Physical Agents & Electrotherapy-II	2+1
STA-3620	Biostatistics II	3+0
BPT-3604	Community Medicine & Rehabilitation	3+0
BPT-3605	Supervised Clinical Practice-I	0+3
<b>Total Credit Hours</b>		<b>17</b>



7 <sup>th</sup> Semester		
Course Code	Subject	Credit Hours
BPT- 4701	Medicine I	3+0
BPT-4702	Surgery I	3+0
BPT-4703	Radiology & Diagnostic Imaging	2+1
BPT-4704	Musculoskeletal Physical Therapy	2+1
BPT-4705	Evidence Based Practice	2+1
BPT-4706	Supervised Clinical Practice-III	0+3
<b>Total Credit Hours</b>		<b>18</b>
8 <sup>th</sup> Semester		
Course Code	Subject	Credit Hours
BPT-4801	Medicine II	3+0
BPT-4802	Surgery II	3+0
BPT-4803	Scientific Inquiry & Research Methodology	2+1
BPT-4804	Neurological Physical Therapy	2+1
BPT-4805	Emergency Procedures & Primary Care in Physical Therapy	2+1
BPT-4806	Supervised Clinical Practice-IV	0+3
<b>Total Credit Hours</b>		<b>18</b>



<b>9<sup>th</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
BPT-5901	Cardiopulmonary Physical Therapy	2+1
BPT-5902	Prosthetics & Orthotics	2+0
BPT-5903	Clinical Decision Making & Differential Diagnosis	3+0
BPT-5904	Manual Therapy	2+1
BPT-5905	Professional Practice (Laws, Ethics & Administration)	2+0
BPT-5905	Integumentary Physical Therapy	2+0
BPT-5906	Supervised Clinical Pharmacy Practice V	0+3
<b>Total Credit Hours</b>		<b>18</b>
<b>10<sup>th</sup> Semester</b>		
<b>Course Code</b>	<b>Subject</b>	<b>Credit Hours</b>
BPT-51001	Obstetrics & Gynecological Physical Therapy	2+0
BPT-51002	Pediatric Physical Therapy	2+0
BPT-51003	Gerontology & Geriatric Physical Therapy	2+0
BPT-51004	Sports Physical Therapy	2+0
BPT-51005	Supervised Clinical Pharmacy Practice VI	0+4
BPT-51006	Research Project	06
<b>Total Credit Hours</b>		<b>18</b>

# AKSON COLLEGE OF PHARMACY



(Public-Private Partnership)

## Degree Programs Offered

Pharm. D. (Doctor of Pharmacy)



### **Principal:**

Dr. Kashif Sohail

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### **Message from Principal:**

Akson College of Pharmacy was established as "College of Pharmacy" in 2011 keeping in view the pivotal role of pharmacy professionals in the health system. As Pharmacist is the only resourced person who is in a unique position of exercising complete drug expertise and its applications. The Pharmacist plays a key role in Health Care System of the country and he is an important member of health Care Team.

Akson College of pharmacy provides convenient scientific and practical environment and adopts a well-designed study plan for Doctor of Pharmacy according to Pharmacy Council of Pakistan. As an institution for the health professionals which is committed to rear up graduates in a competitive, learning and professional environment, our mission is to be recognized as nationally and internationally in pharmaceutical education, research and civic engagements. So far five batches have been passed out from Akson college of Pharmacy and are serving communities locally and internationally in different fields of pharmacy. We aim to accomplish our goals by conducting competitive clinical, basic, social and administrative science research under a team of dedicated faculty and professional staff.



## Faculty Members

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## **Akson College of Pharmacy**

Akson College of Pharmacy located at old industrial estate, Sector D/1, Mirpur was established as "College of Pharmacy" in 2011 keeping in view the pivotal role of pharmacy professionals in the health system. In developing countries inability of public sector to meet the requirement of public health needs due to meager resources is a norm and pharmacy profession is not an exception. Akson College of Pharmacy is an excellent and dedicated Public-Private" endeavor of Akson group and Mirpur University of Science and Technology (MUST) to cope prevalent health challenges of society, recognized by Pharmacy Council of Pakistan (**Letter No. F.No.2-06/2010-PCP September 22, 2017**).

## **Job Opportunities for Pharmacists**

Pharmacists playing vital role in the communities of advanced countries. Recent career opportunities in Pakistan include;  
Regulate Drug affairs

- Employment within primary care groups
- As pharmaceutical advisor to health authorities, drug regulatory bodies, health planners and policy makers
- In education institutions and international epidemiological research organizations
- As research scientists in Research & Development departments for new drug developments
- As community pharmacist to ensure safe, cost effective and rational use of drugs along with follow up prescription advices to the patients as well as the important role in drug testing laboratories
- In government regulated hospitals and private clinics as hospital and clinical pharmacists
- As research scientists in nuclear and forensic science agencies
- Within pharmaceutical industries as production pharmacists and as marketing managers for sale promotion of drugs





- As federal & provincial drug inspectors and drug controllers to regulate drug affairs.

### **Lab facilities**

Laboratories are the backbone of any technical institute. Akson College of Pharmacy has developed nine (09) state of the art and well equipped laboratories for each specialized subject of pharmaceutical sciences; enabling leading-edge drug development and life sciences research (Pharmaceutics, Pharmaceutical Chemistry, Basic Medical Sciences, Microbiology, Pharmacognosy, Industrial Pharmacy, Instrumentation & Quality Control) and one (01) IT lab to improve and sharpen the professional skills of students. All laboratories are constructed & designed as per Pharmacy Council of Pakistan (PCP) specifications and are equipped with primary aid facility along with safety equipment. The regular inventory of the chemicals, glassware, hardware and minor equipment is maintained during the academic calendar year.

There is a separate state-of-the art animal house which is ready for experimentation on animals.

### **Library**

College library is stocked with most recent editions of the books recommended by Higher Education Commission and Pharmacy Council of Pakistan. Library provides faculty and students with resources and services in a quiet, comfortable environment. Moreover, to cater the student's virtual need and activities, well established computer lab with internet facility is provided. Literature books, scientific journals and magazines are present to indulge the student passion for reading and learning.

### **Program Mission**

"To provide quality pharmacy education & research that contributes significantly to improve health care system of the society, through intra disciplinary approach."



## Program Learning Objectives (PLOs)

- To provide comprehensive pharmacy education to cope the challenges of pharmaceutical care of our health apparatus.
- To produce quality pharmacists capable of steering the helm of affairs of our pharmaceutical industry.
- To foster an environment that enables graduates to acquire knowledge, analytical skills, problem solving attitude and ethical values necessary to enter pharmacy practice and provide patient centered pharmacy services.
- To promote collaboration with other health professions to materialize the concept of rational and cost-effective drug

use for health promotion and illness prevention of the society.

- To educate the community about misuse/mishandling/compliance of medicines through various civic engagement modules.

### Admission Criterion:

- F.Sc (Pre-medical) or Equivalent with minimum 60% marks

OR

- B.Sc. (Botany, Zoology, Chemistry) with minimum 45% marks along with 1st division in F.Sc.



## Scheme of Study (Doctor of Physical Therapy)

<b>Education System</b>	Semester			
<b>Mode of Study</b>	Regular			
<b>Session Type</b>	Morning			
<b>Total Duration</b>	10-14 Semester			
<b>1 Theory Credit Hour</b>	01 hour			
<b>1 Lab Credit Hour</b>	03 hour			
<b>Internship/Practical Training</b>	S/U Basis			
<b>Comprehensive Oral Examination</b>	S/U Basis			
<b>Total Credit Hours</b>	201 Credits			
<b>1<sup>st</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
ENG 300	English-A (Functional English)	2	0	2
PHARM 310	Pharmaceutics-IA (Physical Pharmacy)	3	1	4
PHARM 311	Pharmaceutical Chemistry-IA (Organic)	3	1	4
PHARM 312	Pharmaceutical Chemistry-IIA (Biochemistry)	3	1	4
PHARM 313	Physiology-A	3	1	4
PHARM 314	Anatomy & Histology	3	1	4
			<b>Total</b>	<b>22</b>



<b>2<sup>nd</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
ENG 301	English-B (Communication & Writing skills)	4	0	4
PHARM 315	Pharmaceutics-IB (Physical Pharmacy)	3	1	4
PHARM 316	Pharmaceutical Chemistry-IB (Organic)	3	1	4
PHARM 317	Pharmaceutical Chemistry-IIB (Biochemistry)	3	1	4
PHARM 318	Physiology-B	3	1	4
<b>Total</b>				<b>20</b>
<b>3<sup>rd</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
IS 402	Islamic Studies / Ethics	3	0	3
PHARM 410	Pharmaceutics-IIA (Dosage Forms Science)	3	1	4
PHARM 411	Pharmaceutics-IIIA(Pharmaceutical Microbiology & Immunology)	3	1	4
PHARM 412	Pharmacology and Therapeutics-IA	3	1	4
PHARM 413	Pharmacognosy-IA (Basic)	3	1	4
PHARM 414	Pharmacy Practice-IA (Pharmaceutical Mathematics)	3	0	3
<b>Total</b>				<b>22</b>



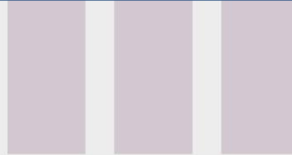
<b>4<sup>th</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
PS 403	Pakistan Studies	2	0	2
PHARM 415	Pharmaceutics-IIB (Dosage Forms Science)	3	1	4
PHARM 416	Pharmaceutics-IIIB (Pharmaceutical Microbiology & Immunology)	3	1	4
PHARM 417	Pharmacology and Therapeutics-IB	3	1	4
PHARM 418	Pharmacognosy-IB (Basic)	3	1	4
PHARM 419	Pharmacy Practice – IB (Bio-statistics)	3	0	3
<b>Total</b>				<b>21</b>
<b>5<sup>th</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
AR 504	Arabic	3	0	3
PHARM 510	Pharmacy Practice-IIA (Dispensing Pharmacy)	3	1	4
PHARM 511	Pharmaceutical Chemistry-IIIA (Pharmaceutical Analysis)	3	1	4
PHARM 512	Pharmacology and Therapeutics-IIA	3	1	4
PHARM 513	Pharmacognosy-IIA (Advanced)	3	1	4
PHARM 514	Pathology	3	1	4
<b>Total</b>				<b>23</b>



<b>6<sup>th</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
PHARM 515	Pharmacy Practice-IIB (Community, Social & Administrative Pharmacy)	3	0	3
PHARM 516	Pharmaceutical Chemistry-IIIB (Pharmaceutical Analysis)	3	1	4
PHARM 517	Pharmacology and Therapeutics-IIB	3	1	4
PHARM 518	Pharmacognosy-IIB (Advanced)	3	1	4
PHARM 519	Pharmacy Practice-III (Computer and its Applications in Pharmacy)	3	1	4
			<b>Total</b>	<b>19</b>
<b>7<sup>th</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
PHARM 610	Pharmacy Practice-IVA (Hospital Pharmacy)	3	0	3
PHARM 611	Pharmacy Practice-VA (Clinical Pharmacy-I)	3	1	4
PHARM 612	Pharmaceutics-IVA (Industrial Pharmacy)	3	1	4
PHARM 613	Pharmaceutics-VA (Biopharmaceutics& Pharmacokinetics)	3	1	4
PHARM 614	Pharmaceutics-VIA (Pharmaceutical Quality Management)	3	1	4
			<b>Total</b>	<b>19</b>
<b>8<sup>th</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
PHARM 615	Pharmacy Practice-IVB(Hospital Pharmacy)	3	0	3
PHARM 616	Pharmacy Practice-VB(Clinical Pharmacy-I)	3	1	4
PHARM 617	Pharmaceutics-IVB (Industrial Pharmacy)	3	1	4
PHARM 618	Pharmaceutics-VB (Biopharmaceutics& Pharmacokinetics)	3	1	4
PHARM 619	Pharmaceutics-VIB (Pharmaceutical Quality Management)	3	1	4
			<b>Total</b>	<b>19</b>



<b>9<sup>th</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
PHARM 710	Pharmaceutics-VIIA (Pharmaceutical Technology)	3	1	4
PHARM 711	Pharmacy Practice-VIA (Advanced Clinical Pharmacy-II)	3	1	4
PHARM 712	Pharmacy Practice-VIIA (Forensic Pharmacy)	3	0	3
PHARM 713	Pharmacy Practice-VIIIA (Pharmaceutical Management & Marketing)	3	0	3
PHARM 714	Pharmaceutical Chemistry-IVA (Medicinal Chemistry)	3	1	4
			<b>Total</b>	<b>18</b>
<b>10<sup>th</sup> Semester</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs.</b>	<b>Lab. Hrs.</b>	<b>Cr. Hrs.</b>
PHARM 715	Pharmaceutics-VIIB (Pharmaceutical Technology)	3	1	4
PHARM 716	Pharmacy Practice-VIB (Advanced Clinical Pharmacy-II)	3	1	4
PHARM 717	Pharmacy Practice-VIIB (Forensic Pharmacy)	3	0	3
PHARM 718	Pharmacy Practice-VIIIB (Pharmaceutical Management & Marketing)	3	0	3
PHARM 719	Pharmaceutical Chemistry-IVB (Medicinal Chemistry)	3	1	4
			<b>Total</b>	<b>18</b>



# BHIMBER CAMPUS MUST







**Dr. Muhammad Ajai**  
**Associate Professor**

### **Message from Campus Coordinator:**

Welcome to MUST, Bhimber Campus, an institution that rests academic foundation of 12 years, incorporated with modern approach that seeks to shape young men and women into successful world leaders. I have join MUST in 2015 and feel privilege to lead this vibrant institution that offers good

### **Introduction**

District Bhimber lies in southern in Azad Jammu & Kashmir and bounded Indian-administered Kashmir to the east. It is located at a Latitude: 32.48 to 33.34 and Longitude: 73.55 to 74.45. Before 1995 Bhimber was a sub-division (Tehsil) of District Mirpur, meanwhile 1996 the Tehsil status of Bhimber was updated into a separate District. The District is enriching with literate people. The District reflects scenic beauty in form of Samahni valley (Tehsil) Baghsar

Fort and Watala National Park Tesil Barnala. Climatically District Bhimber falls in dry tropical arid to dry subtropical type area in which temperature raises to more than 45°C in summer. The total area of the District is 1516 square kilometers and is sub-divided into three tehsils viz. Bhimber, Barnala and Samahni.

Mirpur University of Science & Technology (MUST) Bhimber Campus was established in August 2008. The campus is located on Bhimber bypass road adjacent to Girls Degree College. In the campus there are two blocks, i.e. Administration block and Academic block along with photocopy shop and cafeteria. Bhimber campus also provide hostel residence for girls only. The Fatima girls hostel facility has been designed to ensure a secure and pleasant stay of female students in a learning environment. Facilities available in hostel contain furnished rooms, high speed 24 hours internet, dining hall, TV lounge and sports. Campus also contain internet facility for students. Bhimber campus also offers shuttle bus service to students coming from remote areas.

#### **Departments at MUST Bhimber Campus**

- **Botany**
- **Economics**
- **English**
- **Statistics**

#### **Program**

- **Human Resource Management (Program Offered)**

# DEPARTMENT OF BOTANY

## Our Vision

Our vision is to provide innovative knowledge and productive research in plant sciences to the students by incorporating latest technological approaches to address the climate issues and food related agricultural needs of the society.

## Programs Offered

BS Botany  
M.Sc. Botany  
M.Phil. Botany  
Ph.D. Botany





**Chairperson:**

Dr. Muhammad Ishtiaq

Tel: +92-5828-920235

E-mail: [chairman.botany@must.edu.pk](mailto:chairman.botany@must.edu.pk)

**Message from Chairperson:**

I welcome you to the Department of Botany which is one of the pioneer Departments of MUST. The importance of plants in Biological Sciences is paramount and role of plants in global ecosystems cannot be underlined. Botany is not conventional field of study rather it has all levels of applied studies and research in molecular level as: genomics, proteomics, green house to global climate change and carbon foot prints. Department is well equipped with furnished classrooms, research laboratories, herbarium and green house. I have full confidence in my faculty that they will train the students in such manner that the graduates will meet and be able to solve all the challenges of society and country in line with market demands.

I am glad to share that Department has highly qualified faculty consisting of five teachers with Ph.D. and all other having M.Phil. who are well known for research productivity in the University and country. Currently, Department of Botany is offering quality-based and applied research in all fields of Plant Sciences. Four degree programs: B.S., M.Sc., M.Phil. and Ph.D. are offered by the Department with highly conducive learning and research environment for the graduates of Botany at level excellent professional standards. I hope that your decision to join the Department of Botany in MUST will lead you to the height of excellent and profound level in your academics with bright future, Inshallah.



**Faculty members of Botany Department**



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**Designation:** Lecturer

**Qualification:** Ph.D. (QAU, Islamabad)

**Area of interest:** Plant Systematics and Biodiversity

**E-mail:** [neelam.botany@must.edu.pk](mailto:neelam.botany@must.edu.pk)

### Dr. Muhammad Ajaib

**Designation:** Associate Professor

**Qualification:** Ph.D.

**Area of interest:** Plant Taxonomy

**E-mail:** [majaib.botany@must.edu.pk](mailto:majaib.botany@must.edu.pk)

### Dr. Tanveer Hussain

**Designation:** Assistant Professor

**Qualification:** Ph.D. (MUST, Mirpur/USA)

**Area of interest:** Plant Pathology and Microbiology

**E-mail:** [tanveer.botany@must.edu.pk](mailto:tanveer.botany@must.edu.pk)

### Ms. Waheeda Mushtaq

**Designation:** Lecturer

**Qualification:** M.Phil. (MUST, Mirpur)

**Area of interest:** Ethnopharmacy

**E-mail:** [waheeda.jawad@must.edu.pk](mailto:waheeda.jawad@must.edu.pk)



## Faculty Members

### Mr. Noman Rafique

**Designation:** Lecturer

**Qualification:** M.Phil. (GCU, Faisalabad)

**Area of interest:** Plant Physiology

**E-mail:** [noman.botany@must.edu.pk](mailto:noman.botany@must.edu.pk)

### Ms. Mehwish Maqbool

**Designation:** Jr. Lecturer

**Qualification:** M.Phil. (MUST, Mirpur)

**Area of interest:** Ethnobotany

**E-mail:** [mehwish.botany@must.edu.pk](mailto:mehwish.botany@must.edu.pk)

### Ms. Rehana Anwar

**Designation:** Jr. Lecturer

**Qualification:** M.Phil. (MUST, Mirpur)

**Area of interest:** Genetics

**E-mail:** [rehana.botany@must.edu.pk](mailto:rehana.botany@must.edu.pk)



## **BS Botany**

B.S. program is a four-year degree program. The goal of B.S program is to produce competent professionals in the field of Botany who can face the challenges of the changing world. In the program contents of B.S various foundation courses have been reviewed, modified and updated such as; Biodiversity and conservation, Plant Anatomy, Plant Systematics, Genetics, Biochemistry and Biostatistics etc. and the major courses as Physiology, Genetics, Ecology, Ethnobotany and Cell Biology etc. are incorporated. The students are also taught computer, Islamic studies, Arabic, Pakistan Studies, Zoology and Chemistry as core and foundation courses. These courses are as per policy of HEC. Thesis is compulsory for the students who secure CGPA 3.00 or more.

## **Program Mission:**

Botany as a subject is multidisciplinary in nature, involving study of plants and their genetics, morphological and physiological attributes, their surrounding environment, and their role in conservation of environment. This subject has significant role in human resources development, food security, environmental conservation, sustainable development and ultimately in alleviation of poverty from society.



**Lab Activity on Ethnobotany**



### **Program Educational Objectives (PEOs):**

The BS program will enable the students to be acquainted with the latest knowledge of the plant sciences. In the program the contents of various foundation courses have been reviewed, modified and updated such as; Diversity of Plants, Plant Systematics, Cell Biology, Genetics and Evolution, Plant Physiology and Ecology, and the major courses as Mycology and Plant Pathology, Plant Systematics, Genetics-I, Plant Biochemistry-I, Plant Physiology-II etc. are incorporated. The technical and typing errors have been removed. The four elective courses are left for specific requirement of the students of University.

### **Program Learning Objectives (PLOs):**

1. To impart knowledge about the major disciplines of Botany.  
It will enable the students to understand the principles of

organizations and inter-relationships in the biological systems with particular reference to plant diversity.

2. To teach different methods of exploration, investigation, organization of data and its utilization in Lab.
3. To train students for advanced studies and specialization on recently emerging technological and multidisciplinary fields such as Biodiversity and conservation, Environmental Science, Biotechnology, etc. After completing of their degree, students will be able to apply their knowledge in their respective fields effectively.
4. To equip students with knowledge and skills for better planning and management of plant resources, environment, health, medicine, agriculture and population in the country.
5. To develop the scientific culture and demonstrate professional skills in teaching/ research and managerial





positions in wide range of professions in national and international organizations.

**Admission Criterion:**

The criterion to apply for the admission in B.S Botany is that applicant must have passed F. Sc. with Biology, Physics and Chemistry with at least second division (45% Marks). An aptitude test is conducted and final merit is computed including the academia marks as per University Rules.

**Selection Criterion:**

Final eligibility (merit) for admission in the Department of Botany is aggregate of both and formulated by central admission committee of MUST.

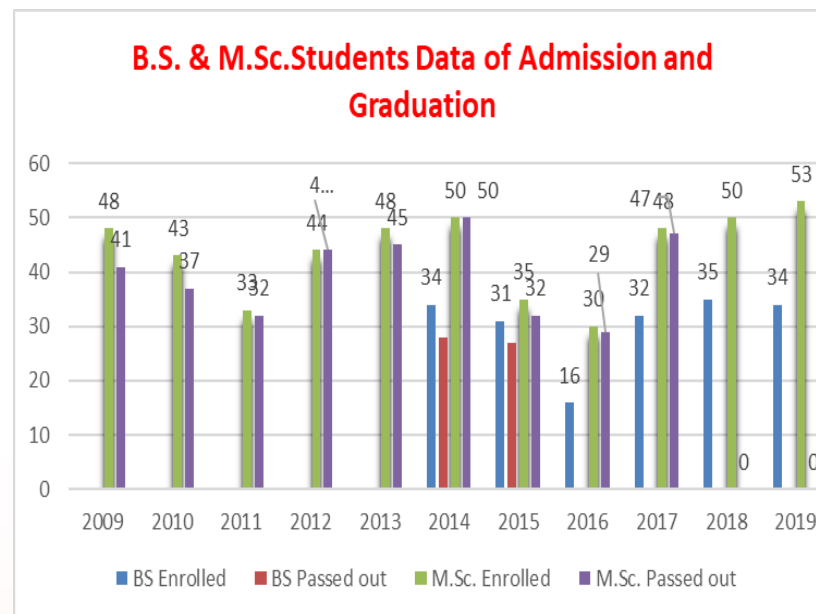
**Degree Requirements:**

F.Sc. Pre Medical/ A level.

**Scholarships Offered:**

- |                                |                             |
|--------------------------------|-----------------------------|
| 11. Merit Based Scholarship    | 15. Ehsas Scholarships      |
| 12. HBL Foundation Scholarship | 16. MUST scholarship        |
|                                | 17. Baitul Mall Scholarship |

13. Allied Bank Scholarship	18. NGOs scholarships.
14. HEC need-base	
<b>Duration:</b>	
8-12 semesters	





### Scheme of Study (BS Botany)

<b>Duration</b>	8-12 semesters					
<b>Courses</b>	124 credits					
<b>Internship</b>	S/ U basis					
<b>Comprehensive Oral Examination</b>	S/ U basis					
<b>Research Thesis/Special paper</b>	6 credits					
<b>Total Credits</b>	130 credits					
<b>1<sup>st</sup> Semester</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Lect. Hrs</b>	<b>Lab. Hrs</b>	<b>Credit. Hrs</b>	
	BOT-1101	Diversity of Plants	3	1	4	
	ZOO-1123	Principles of Animal Life-I	3	0	3	
	MAT-1115	Mathematics-I	3	0	3	
	CHE-1104	Inorganic Chemistry	3	0	3	
	ENG-1107	English-I (Functional English)	3	0	3	
	PS-1117	Pakistan Studies	2	0	2	
	<b>Subtotal</b>			<b>17</b>	<b>1</b>	<b>18</b>
<b>2<sup>nd</sup> Semester</b>	BOT-1201	Plant Systematics, Anatomy & Development	3	1	4	
	ZOO-1223	Principles of Animal Life –II	3	0	3	
	CHE-1204	Organic Chemistry	3	0	3	
	ENG-1207	English-II (Communication Skills)	3	0	3	
	ARA-1201	Arabic	3	0	3	
	ISL-1212	Islamic Studies	2	0	2	
	<b>Subtotal</b>			<b>17</b>	<b>1</b>	<b>18</b>



<b>3<sup>rd</sup> Semester</b>	BOT-2301	Cell Biology, Genetics & Evolution	3	1	4
	ZOO-2323	Animal Diversity-I	3	1	4
	CHE-2304	Physical Chemistry	3	0	3
	ENG-2307	English-III (Technical Report Writing & Presentation Skills)	3	0	3
	COM-2305	Introduction to Computer	3	0	3
	<b>Subtotal</b>			<b>15</b>	<b>2</b>
<b>4<sup>th</sup> Semester</b>	BOT-2401	Plant Physiology and Ecology	3	1	4
	BOT-2402	Biodiversity and Conservation	3	1	4
	ZOO-2423	Animal Diversity –II	3	0	3
	CHE-2404	Analytical Chemistry	3	0	3
	STA-2420	Biostatistics	3	0	3
	<b>Subtotal</b>			<b>15</b>	<b>2</b>
<b>5<sup>th</sup> Semester</b>	BOT-3501	Bacteriology & Virology	2	1	3
	BOT-3502	Mycology & Plant Pathology	2	1	3
	BOT-3503	Phycology & Bryology	2	1	3
	BOT-3504	Diversity of Vascular Plants	2	1	3
	BOT-3505	Plant Systematics	2	1	3
	<b>Subtotal</b>			<b>10</b>	<b>5</b>
<b>6<sup>th</sup> Semester</b>	BOT-3601	Plant Anatomy	2	1	3
	BOT-3602	Genetics-I	2	1	3
	BOT-3603	Plant Biochemistry-I	2	1	3
	BOT-3604	Plant Ecology-I	2	1	3
	BOT-3605	Plant Physiology-I	2	1	3
	<b>Subtotal</b>			<b>10</b>	<b>5</b>



<b>7<sup>th</sup> Semester</b>	BOT-4701	Molecular Biology	2	1	3
	BOT-4702	Plant Biochemistry- II	2	1	3
	BOT-4703	Plant Ecology-II	2	1	3
	BOT-	Research Thesis/ Elective-I	-	-	3
	BOT-	Elective-II	2	1	3
	<b>Subtotal</b>			<b>8</b>	<b>4</b>
<b>8<sup>th</sup> Semester</b>	BOT-4801	Plant Physiology –II	2	1	3
	BOT-4802	Genetics-II	2	1	3
	BOT-4803	Environmental Biology	2	1	3
	BOT-	Research Thesis/ Elective-III	-	-	3
	BOT- ----	Elective-IV	2	1	3
	<b>Subtotal</b>			<b>8</b>	<b>4</b>
<b>Total</b>					<b>130</b>



### Approved list of Elective Courses

Course Code	Course Title	Lec. Hrs	Lab. Hrs	Credit Hrs
BOT-4704	Ethnobotany	2	1	3
BOT-4705	Phytoremediation	2	1	3
BOT-4706	Plant Stress Physiology	2	1	3
BOT-4707	Conservation and Management of Plant Resources	2	1	3
BOT-4708	Plant Nutrition	2	1	3
BOT-4709	Phytosociology	2	1	3
BOT-4710	Economic Botany	2	1	3
BOT-4711	Flora of Azad Jammu and Kashmir	2	1	3
BOT-4712	Research Thesis	2	1	3
BOT-4804	Research Techniques	2	1	3
BOT-4805	Plant Metabolism	2	1	3
BOT-4806	Plant Biotechnology	2	1	3
BOT-4807	Applied Mycology	2	1	3
BOT-4808	Plant Microbe Interaction	2	1	3
BOT-4809	Molecular Genetics	2	1	3
BOT-4810	Phytochemistry	2	1	3
BOT -4811	Palynology	2	1	3
BOT-4812	Applied Microbiology	2	1	3



### **M.Sc. in Botany:**

M.Sc. botany is a two-year degree program. The course is in line with unified curriculum prescribed by the Higher Education Commission (HEC). The program consists of two main parts: Compulsory courses and Elective Courses with different fields of specialization. These courses are broad enough to encompass nearly all the major fields in Botany. These include Mycology, Fungal Biotechnology, Biodiversity and Conservation, Plant Biotechnology, Environment Biology, Biochemistry, Medicinal Plant Biotechnology, Plant Pathology, Bioinformatics, Proteomics, Genomics, Ethnobotany, Advance Environmental Biotechnology, Ecology and Plant Systematics. It is worth mentioning that courses offered along with applied research in different fields of specialization are paramount for productivity of society and nation. The areas of specialization

include Mushroom and Fungal Technology, Plant Pathology, Aquatic Ecology, Ecology, Phytosociology, Tissue Culture, Medicinal Plants, Microbiology, Environmental Biotechnology, Plant Stress Physiology, Applied Ethnobotany, Edaphology, Plant Systematics, Plant Metabolism, Advanced Plant Physiology, Plant Biotechnology, Bioinformatics, Proteomics, Genomics Plant Biodiversity and Conservation, Virology & Bacteriology and Applied research on local flora.

Thesis is compulsory for the students who secure CGPA 3.00 or more. Though the thesis does not specify any limit, but the work produced will be inordinate to address any problem of environment, society and science in a comprehensive manner.

The program provides a firm ground in major fields of study which opens up a wide range of opportunities for job as well as higher studies in national and international institutions.



The Department contributes in developing a qualified teaching workforce, which are serving the Department of Education of Azad Kashmir and Pakistan in various positions.

Apart from this, the graduates of this department have taken up their jobs in the research organizations of the country including PARC, NARC, WWF, IUCN, HRSP, NIAB, NIBGE and PSCIR. Thus, they are playing an important role in the development of the society and country.

The pharmaceutical industry is another place where the graduates of this program are easily absorbed. In short, the course offers a promising future to its successful graduates who never will leave any stone unturned to work for the promising future of the society and country.

### **PROGRAM OBJECTIVES**

- To impart knowledge about the major disciplines of Botany. It will enable the students to understand the principles of

organizations and inter-relationships in the biological systems with particular reference to plant diversity.

- To teach different methods of exploration, investigation, organization of data and its utilization in practical life.
- To train students for advanced studies and specialization on recently emerging technological and multidisciplinary fields such as Genetic Engineering, Biodiversity and Conservation, Environmental Science, Wildlife and conservation, Biotechnology, etc. After completing the degree/students will be able to apply their knowledge to their respective fields effectively.
- To equip students with knowledge and skills for better planning and management of plant resources, environment, health, medicine, agriculture and population in the country.
- To develop the scientific culture and demonstrate professional skills in teaching/ research/ managerial positions



in wide range of professions in national and international organizations.

### **Admission Criterion:**

The criterion to apply for the admission in M.Sc. Botany is B. Sc. with Botany, Zoology and Chemistry/ Botany, Zoology and geography in at least second division (45% Marks). An aptitude test is conducted and final merit is computed including the academic marks.

### **Degree Requirements:**

B.Sc. with Botany, Zoology and Chemistry/ Botany, Zoology and geography in at least second division (45% Marks).

### **Scholarships Offered:**

- |                               |                            |
|-------------------------------|----------------------------|
| 1. Merit Based Scholarship    | 5. Ehsas Scholarships      |
| 2. HBL Foundation Scholarship | 6. MUST scholarship        |
| 3. Allied Bank Scholarship    | 7. Baitul Mall Scholarship |
| 4. HEC need-base              | 8. NGOs scholarships.      |

### **Duration:**

4 – 6 Semesters







### Scheme of Study (M.Sc. Botany)

	Course Code	Course Title	Lect. Hrs	Lab.Hrs	Credit. Hrs
1 <sup>st</sup> Semester	BOT-5101	Bacteriology & Virology	2	1	3
	BOT-5102	Mycology & Plant Pathology	2	1	3
	BOT-5103	Phycology & Bryology	2	1	3
	BOT-5104	Diversity of Vascular Plants	2	1	3
	BOT-5105	Plant Systematics	2	1	3
	BOT-5106	Biostatistics	2	1	3
	<b>Subtotal</b>			<b>10</b>	<b>5</b>
2 <sup>nd</sup> Semester	BOT-5201	Plant Anatomy	2	1	3
	BOT-5202	Cell Biology	2	1	3
	BOT-5203	Genetics-I	2	1	3
	BOT-5204	Plant Biochemistry-I	2	1	3
	BOT-5205	Plant Ecology-I	2	1	3
	BOT-5206	Plant Physiology-I	2	1	3
	<b>Subtotal</b>			<b>12</b>	<b>6</b>
3 <sup>rd</sup> Semester	BOT-6301	Molecular Biology	2	1	3
	BOT-6302	Plant Biochemistry- II	2	1	3
	BOT-6303	Plant Ecology-II	2	1	3
	BOT-	Research Thesis/ Elective-I	-	-	3
	BOT-	Elective-II	2	1	3
	<b>Subtotal</b>			<b>8</b>	<b>4</b>
4 <sup>th</sup> Semester	BOT-6401	Plant Physiology –II	2	1	3



	BOT-6402	Genetics-II	2	1	3
	BOT-6403	Environmental Biology	2	1	3
	BOT-	Research Thesis/ Elective-III	2/0	1/3	3
	BOT- ----	Elective-IV	2	1	3
	<b>Total</b>		<b>10/8</b>	<b>5/7</b>	<b>15</b>
	<b>Total</b>				<b>66</b>

### Approved List of Elective Courses:

Course Code	Course Title	Lec. Hrs	Lab. Hrs	Credit Hrs
BOT-6304	Recent Trends in Biotechnology	2	1	3
BOT-6305	Plant Pathology	2	1	3
BOT-6306	Fresh Water Ecology	2	1	3
BOT-6307	Phytosociology	2	1	3
BOT-6308	Ethnobotany	2	1	3
BOT-6309	Plant Stress Physiology	2	1	3
BOT-6310	Plant Metabolism	2	1	3
BOT-6311	Medicinal Plants	2	1	3
BOT-6312	Physiological Genetics	2	1	3
BOT-6313	Plant Microbe Interaction	2	1	3
BOT-6314	Economic Botany	2	1	3
BOT-6315	Cell & Molecular Biology of Plants	2	1	3
BOT-6404	Biodiversity and Conservation	2	1	3
BOT-6405	Edaphology	2	1	3
BOT-6406	Biodegradation	2	1	3



<b>Course Code</b>	<b>Course Title</b>	<b>Lec. Hrs</b>	<b>Lab. Hrs</b>	<b>Credit Hrs</b>
BOT-6407	Environmental Pollution	2	1	3
BOT-6408	Research Techniques and Lab Tools	2	1	3
BOT-6409	Wild Plants & Their economic uses	2	1	3
BOT-6410	Palynology	2	1	3
BOT-6411	Bioinformatics	2	1	3
BOT-6412	Molecular Genetics	2	1	3
BOT-6413	Mycorrhizae	2	1	3
BOT-6414	Thesis			6



### **M.Phil. in Botany:**

The Department of Botany has launched M. Phil. Program since 2012. The research degree of M. Phil. will be of two years' duration, respectively. In the first year, students will study taught courses consisting of two semesters (each of 16 weeks' duration) in partial fulfillment of the degree as per criterion of HEC. Other time is used for thesis research work to be conducted by scholar. The course and research is geared towards providing research training in the various disciplines of Botany and its related disciplines. The major fields of research groups offered comprise of Mycology and Plant Pathology, Fungal Biotechnology, Environmental Biology, Medicinal Plant Biotechnology, Plant Systematics, Physiology, Genetic Engineering, DNA Technology, OMICs Technology and Plant Biodiversity and Conservation, Commercialization of Local flora, Numerical Taxonomy, Proteomics, Tissue Culture,

Ethnobotany, Chemotaxonomy, Ecology, Edaphology, Microbiology, Applied Forestry Research, Agronomics, Horticulture, Bioinformatics and Climate Change Adaptation and Mitigations.

### **Mission Statement:**

The MPhil Education enables participants to think critically and deeply about education as a field of study. Education is a rich field that covers a wide range of contrasting disciplinary, political and philosophical positions. This program encourages participants to be communicative and explanative to the complex and diverse theories and practices in higher education internationally.

Our mission is to adoptive an environment of excellence by attracting and supporting the outstanding students, faculty and staff needed to sustain our vision. We focus on the patterns and processes that enable predictive understanding of plants



and their environments at local, regional, and global scales, leading to strengths in the areas of ecology, Mycology, Biotechnology, Plant systematics, genetics. Environment, Ethnobotany, physiology and pharmaceuticals. The Botany Department is unique because of our focus on fundamental research and teaching on plants as well as our study of populations, communities and ecosystems of which they are the key component. Our faculty conducts basic and applied research relevant to the state, nation and global needs to foster the basic food and medicine necessities.

**Objectives:**

- To focus on extending knowledge and research expertise of students through scientific inquiry.
- To enable students to have the comprehensive understanding, knowledge and skills required for the critical

scrutiny of educational matters and issues and finding novel solutions for them.

- The degree program provides the participants with the understanding of educational process, equip them with methodological skills of conducting different types of research and helps them to become proficient educational leaders for both public and private sector institutes.
- Additionally, the program enables them to become aware of new trends and various techniques in educational process and evaluation.



### **Admission Criterion:**

The criterion to apply for the admission in M. Phil. Botany is that applicant must have passed M.Sc. Botany at least in second division (CGPA-3.00 or more/ as per HEC policy) with no third division during the whole academic career. An aptitude test and interview is conducted and final merit is formulated on aggregate based on academic record, aptitude test and interview. The students must have to pass NTS with a minimum 50% score (as per HEC requirement) and provide the certificate as per policy of University in stipulated time frame. The students are required to present a thesis based on original research work carried out under the supervision of a qualified teacher from the department. The students are required to undertake study trips/field courses as part of their syllabi. The presentation of research work in national and

international conferences and symposia is compulsory which bears one credit hour weightage, during the academic year.

### **Selection Criterion:**

An aptitude test and interview is conducted and final merit is formulated on aggregate based on academic record, aptitude test and interview. The students have to pass NTS with minimum 50% scores (as per HEC requirement) and provide the certificate as per policy of university in stipulated time frame.

### **Degree Requirements:**

Applicants must have passed M.Sc. Botany in at least second division (CGPA-3.00 or more/ as per HEC policy) with no third division during the whole academic career.



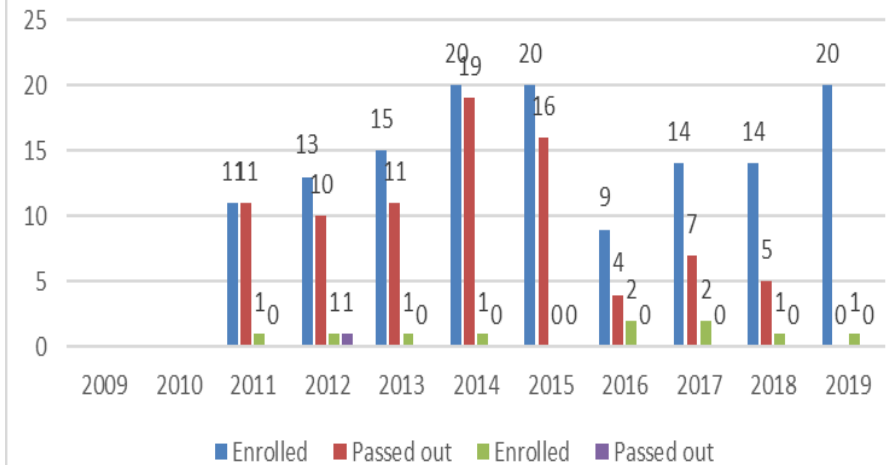
### Scholarships Offered:

1. Merit Based Scholarship
2. HBL Foundation Scholarship
3. Allied Bank Scholarship
4. HEC need-base
5. Ehsas Scholarships
6. MUST scholarship
7. Baitul Mall Scholarship
8. NGOs scholarships.

### Duration:

2-4 Years

### M.Phil. & Ph.D. Students Data of Admission and Graduation





## Scheme of Study (M.Phil. Botany)

<b>Duration:</b>	2-4 Years
<b>Courses:</b>	24 Credit Hours
<b>Seminar/Conference paper with certificate</b>	01 Credit Hours
<b>Thesis</b>	06 Credit Hours
<b>Total:</b>	31 Credit Hours

No.	Course Title	Lec. Hrs	Lab. Hrs	Credit Hrs
BOT-701	Advances in Plant Physiology	3	0	3
BOT-702	Advances in Biodiversity and Conservation	3	0	3
BOT-703	Plant Tissue and Cell Culture	3	0	3
BOT-704	Ornamental Horticulture	3	0	3
BOT-705	Advances in Stress Physiology	3	0	3
BOT-706	Weed Ecology	3	0	3
BOT-707	Bioenergetics and Molecular Enzymology	3	0	3
BOT-708	Advances in Phytosociology	3	0	3
BOT-710	Advances in Genetics	3	0	3
BOT-711	Advances in Environmental Biology	3	0	3
BOT-712	Advances in Microbiology	3	0	3
BOT-713	Advances in Lab Experimental Techniques	3	0	3
BOT-714	Recombinant DNA Technology	3	0	3
BOT-715	Plant Soil Water Relations	3	0	3
BOT-716	Plant Biotechnology and Genetic Eng.	3	0	3





BOT-717	Biostatistics and Computer Application	3	0	3
BOT-718	Pharmaceutical Microbiology	1	0	1
BOT-719	Applied Ethnobotany	3	0	3
BOT-720	Advances in Flowering Plant Taxonomy	3	0	3
BOT-721	Applied Ethnopharmacology	3	0	3
BOT-722	Climate Change and Adaptation of Plants	3	0	3
BOT-798	Seminar	1	0	1
BOT-799	Thesis M.Phil.	0	6	6



### **Ph.D. in Botany:**

The Department of Botany has launched Ph. D. Program since 2012. The research degree of Ph.D. will be of three years' duration, respectively. In the first year, students will take taught courses consisting of two semesters (each of 16 weeks' duration) in partial fulfillment of the degree as per criterion of HEC. Other time is used for thesis research work to be conducted by scholar. The course and research is geared towards providing research training in the various disciplines of Botany and its related disciplines. The major fields of research groups offered comprise of Mycology and Plant Pathology, Fungal Biotechnology, Environmental Biology, Medicinal Plant Biotechnology, Plant Systematics, Physiology, Genetic Engineering, DNA Technology, OMICs Technology and Plant Biodiversity and Conservation, Commercialization of Local flora, Numerical Taxonomy, Proteomics, Tissue Culture,

Ethnobotany, Chemotaxonomy, Ecology, Edaphology, Microbiology, Applied Forestry Research, Agronomics and Horticulture and Bioinformatics.

### **Mission Statement:**

The mission of the program is to inculcate concept-based knowledge in the minds of its graduates by delivering various subjects of Plant Sciences with a problem-solving approach through research, thereby creating new knowledge pertaining to latest issues of Plant Sciences. The goal of the department is to produce top quality graduates in Botany while grooming best-trained, problem-solving minds capable of playing a leading role in the society with refined human qualities and great integrity. It is our mission to acquire Ph.D. scholars with a sound background and skills necessary for careers as university teachers and researchers. We typically engage these scholars in dissertation research and seminars participation



with preparation of their minds to solve issues at national and international level through their applied research skills.

### **Objectives:**

- To develop critical thinking skills in PhD scholars leading as mile stone in career development.
  - To produce highly capable researchers with quality research and education.
  - The ability to formulate a specific research plan and carry out original independent research on a hypothesis to be tested in depth concerning novel ideas in the field of Botany.
  - To commence essential and applied research plan and carry out original independent research
  - The presentation of the research results to the larger community of scholars nationally and internationally.
- To bequeath the department with integration of knowledge in linked fields.
  - To transport inventive thinking in students to grow cost effective research accomplishments.
  - To develop good interpersonal, communication and learning skills



### **Admission Criterion:**

The criterion to apply for the admission in Ph.D. Botany is that the applicant must have passed M. Phil. (CGPA-3.0 or more/ as per policy of HEC) with no third division during the whole academic career. An aptitude test and interview is conducted and final merit is formulated on aggregate based on academic record, aptitude test and interview. The students have to pass GRE (international)/GAT Subject Test (NTS) with minimum percentile score 60% (as per HEC requirement) and provide the certificate as per policy of University in stipulated time frame. The students are required to present a thesis based on original research work carried out under the supervision of a qualified teacher (HEC approved supervisor) from the department. The students are required to undertake study trips/field courses as part of their syllabi. The presentation of research work in national and

international conferences and symposia is compulsory which bears one credit hour. The scholar has to present one seminar in the department with one credit hour value. The scholar has to publish one/two research papers in HEC recognized journals as per policy of HEC.

### **Selection Criterion:**

An aptitude test and interview is conducted and final merit is formulated on aggregate based on academia, aptitude test and interview. The students have to pass GRE (international)/GAT Subject Test (NTS) with minimum percentile score 60% (as per HEC requirement) and provide the certificate as per policy of University in stipulated time frame.



### Degree Requirements:

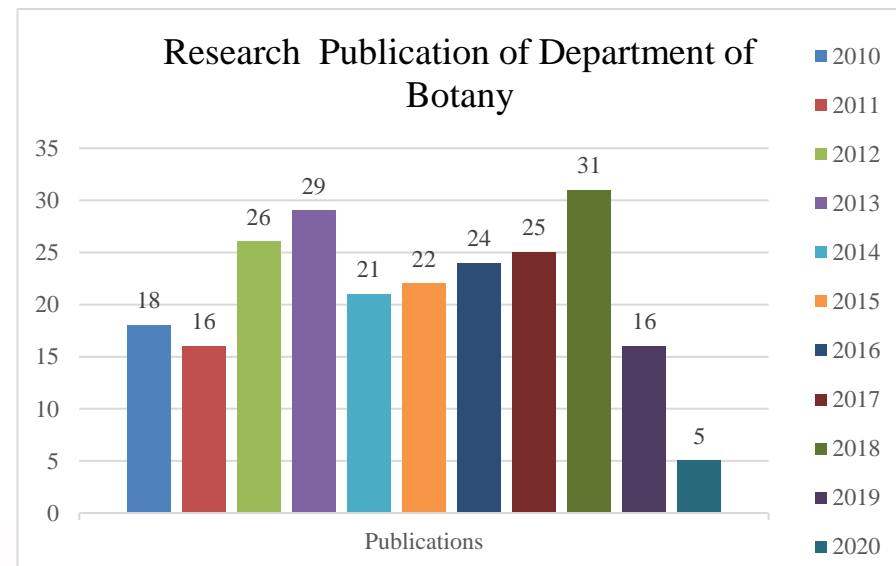
The applicant must have passed M. Phil. (CGPA-3.0 or more/ as per policy of HEC) with no third division during the whole academic career.

### Scholarships Offered:

1. Merit Based Scholarship
2. HBL Foundation Scholarship
3. Allied Bank Scholarship
4. HEC need-base
5. Ehsas Scholarships
6. MUST scholarship
7. Baitul Mall Scholarship
8. NGOs scholarships.

### Duration:

3 - 8 Years





### Scheme of Study (Ph.D. in Botany)

<b>Duration</b>	<b>3 - 8 Years</b>			
<b>Courses</b>	<b>18 Credit Hours</b>			
<b>Seminar</b>	<b>02 Credit Hours</b>			
<b>Thesis</b>	<b>50 Credit Hours</b>			
<b>Total</b>	<b>70 Credit Hours</b>			
<b>No.</b>	<b>Course Title</b>	<b>Lec. Hrs</b>	<b>Lab. Hrs</b>	<b>Credit Hrs</b>
BOT-801	Plant Chemotaxonomy	3	0	3
BOT-802	Advances in Edaphology	3	0	3
BOT-803	Fungal Ecology and Biotechnology	3	0	3
BOT-804	Advances in Molecular Biology of Plants	3	0	3
BOT-805	Phytogeography	3	0	3
BOT-806	Advances in Phycology	3	0	3
BOT-807	Soil Fertility and Plant Nutrition	3	0	3
BOT-808	Wild plants and their economic uses	3	0	3
BOT-809	Research Techniques	3	0	3
BOT-810	Advances in Proteomics	3	0	3
BOT-811	Bioinformatics	3	0	3



BOT-812	Statistical Genomics	3	0	3
BOT-813	Plant Growth and Development	3	0	3
BOT-814	Biosystematics	3	0	3
BOT-815	Project Planning, Monitoring and Evaluation	3	0	3
BOT-816	Integrated Biological Resource Management	3	0	3
BOT-819	Climate Change and Forest Conservation Studies	3	0	3
BOT-897	Seminar I	1	0	1
BOT-898	Seminar II	1	0	1
BOT-899	Thesis PhD	0	25	25



## **Research and Study Facilities for Students:**

### **A-Research Laboratories:**

The department has two research laboratories; one is general laboratory for graduate students to conduct class practicals and basic research. The second laboratory is well-developed and primarily assigned for "Thesis research work". These laboratories are well equipped with modern apparatus like: PCR, Gel Doc., various types of microscopes, laminar flow, digital autoclave, growth chambers, spectrophotometers, ultra-freezer, GPS, Fungal colony counter, digital microscopic camera for anatomy and rotary evaporator apparatus, Soxhlet for phytochemistry. The work relevant to Plant Physiology, Plant Ecology, Biotechnology, Ethnobotany, Pharmaceutical analysis, Plant Taxonomy, Anatomy, Mycology and Plant Pathology, Plant Microbe Interaction and environment and Climate change can easily be performed in these self-sufficient labs at any level.

Presently, the Department is providing research facilities in all areas of medicinal plants including phytochemistry, molecular characterization of various compounds & allelopathic screening of plant extracts, phytosociology, ethnobotany, aflatoxin and their integrated management, stress and drought physiology, taxonomic studies in all fields including algal and fungi for perusing B.S., M.Sc. M. Phil. and Ph.D. studies.

### **B-Library:**

There are 1375 books in the Departmental library for students of all programs. There are more than 200 research theses on different fields of Botany available for reference studies and research for students and faculty. There is provision of more than 100 journals printed copies and there is also a facility of online or digital library as per line of HEC facility.







### **C-Internet and Computer Laboratory:**

The free internet facility is available to all students and faculty for study and research work. There is computer Lab of 50 Computers for study aid and research thesis work purpose.

### **D-Herbarium:**

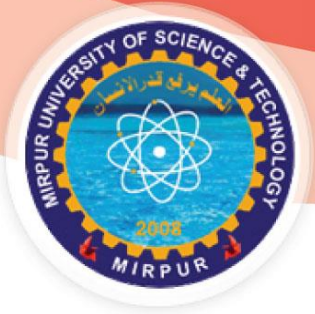
There is One Herbarium (named as MUH) in Department of Botany containing more than 3500 plants preserved from all areas of Kashmir and allied areas of Pakistan. The basic morphology and anatomy study facilities are available in the herbarium. There three computers with internet connection are also available for updating and compilation of herbarium research and for the students who will work in the herbarium.

### **E-Green House:**

One green house is present in the Department to conduct field relevant experiment works in controlled environment for class practicals and theses research work. It contains all basic infrastructure and needs for experimental work.

### **F-Plant Nursery and Field Trial Land Facility:**

There is "field trail experiment" land designed for field trials for class or thesis research work. There is also nursery facility available in collaboration with Department of Forest (as MoU is signed for collaboration in research). The students and faculty is availing this opportunity and conducting applied research work.



## STUDENTS' MESSAGES

I am feeling very proud to be a student of Department of Botany. It is a great honor for us as we have great teachers in this department. The environment here is healthy and conducive for learning and research. Good opportunities are there to obtain the latest knowledge in the field of botany as well as building of my character. I am not only gaining skills but also confidence, dedication, character building and ethics. The attitude and devotion of the faculty members and admin staff towards students is remarkable. I shall graduate in Botany, rise and serve the nation, Inshallah.



**Asma Akram**  
**B.S. Botany**  
**2<sup>nd</sup> Semester**

I am grateful to be a student of Department of Botany. I am indebted to my parents who supported me emotionally and financially. I am thankful to my honorable teachers for teaching me that my job in life is to learn, to know myself and serve community. In the Department of Botany, I am not only gaining knowledge and skills but also have an opportunity to inculcate my confidence and ethics. The behavior and attitude of faculty and admin staff is conducive and remarkable. I am proud to be student of Botany.



**Ali Haidar**  
**M.Sc. Botany**  
**2<sup>nd</sup> Semester**



It is a great pleasure to be a student of M.Phil. in the Department of Botany MUST. I am highly impressed with the sound and up to date knowledge delivered to the students. Teachers are highly skilled and very cooperative. I have learnt latest techniques used in recombinant DNA technology and Proteomics. Excellent academic environment and interaction with faculty has given me tremendous confidence. Exposure to seminars and conferences has broadened my horizons. I have sweet memories, a very faithful friendship and academic achievements.



**Mahnoor Muzamil**  
**M.Phil. Botany**  
**2<sup>nd</sup> Semester**

It is an honor and indeed privilege for me to be the Ph.D. scholar of MUST. I feel proud that I did my masters and M.Phil from this department and now I have again chosen this department to pursue my higher studies due to faculty of the department which is fully equipped with the latest research skills and impressive theoretical knowledge. Excellent self-grooming environment, dynamic faculty and amazing research opportunities welcome the new comers and alumni as well to pursue their dreams.



**Faiza Shaffi**  
**Ph.D. Botany**  
**2<sup>nd</sup> Semester**



# DEPARTMENT OF ECONOMICS

## Degree Programs Offered

BS Economics

M.Sc. Economics

M.Phil. Economics



**Chairperson:**

Dr. Khadim Hussain

Telephone Office: +92-5828-960015

Email: [chairman\\_economics@must.edu.pk](mailto:chairman_economics@must.edu.pk)

**Message from Chairperson**

Pakistan is an evolving economy and at this unique phase of transition new issues and problems are also emerging. It is crucial to develop aptitudes to explain and resolve these issues. The academia has an essential obligation to develop competencies to overcome these challenges. The Department of Economics is engaged in producing the professionals to recognize, examine and solve the problems in their respective area of operations. We are concentrating on developing human resource that has the capacity to think about issues uniquely, to study problems analytically and to craft innovative and operational solutions. The aim of education should not simply be attainment of a degree in quest of a job, but rather the acquirement of knowledge, skills and creative thought-processes that actually creates values for whole sphere of your life. I believe, your stay in the Department of Economics will provide you a golden opportunity to develop your intellectual, moral and social capacity.



**From Left to Right:**

**Row 1:** Mr. Faisal Azeem Abbassi, Dr. Muhammad Saim Hashmi, Dr. Khadim Hussain, Mrs. Nasim Akhter, and Mr. Tanveer Bashir

**Row 2:** Ms. Aneeda Ayub, Ms. Mariam Yassar and Ms. Rani Saima Noureen



### **Department of Economics:**

The Department of Economics was established in 2009 during the inception of the Mirpur University of Science and Technology (MUST) under the Faculty of Social Sciences and Humanities. The Department aims to deliver excellent, stimulating and research-led teaching across undergraduate and graduate program to develop critical thinking in students. We are not only committed to the development of human recourse by imparting quality education but also inculcating

human values in them to promote a peaceful and harmonious society. We prepare students by enhancing their ability to contribute productively in their careers using knowledge learned during their study of economics. Our graduates have been readily absorbed in various jobs with private and public sector institutions. The department is playing a vital role in providing experts to overcome the scarcity of professional in the field of Economics.





## Faculty

### Dr. Khadim Hussain

Designation	Chairman/Assistant Professor
Qualification	Ph.D., Northwest A&F University, China
Area of interest	International Trade, Regional Economics, Environmental Economics, Agricultural Economics
Contact	<a href="mailto:hussain.eco@must.edu.pk">hussain.eco@must.edu.pk</a> +92 5828 961015

### Mr. Muhammad Ajmair

Designation	Assistant Professor
Qualification	M.Phil., Federal Urdu University of Arts, Science & Technology, Islamabad
Area of interest	Development Economics, Microeconomics, Mathematical Economics
Contact	<a href="mailto:ajmair@must.edu.pk">ajmair@must.edu.pk</a>

### Dr. Nasim Akhter

Designation	Assistant Professor
Qualification	Ph.D., Preston University, Islamabad
Area of interest	Microeconomics, Development Economics, Human Resource Development
Contact	<a href="mailto:nasim.eco@must.edu.pk">nasim.eco@must.edu.pk</a>



## **Dr. Muhammad Saim Hashmi**

Designation	Assistant Professor
Qualification	Ph.D., Huazhong University of Science and Technology, China
Area of interest	Development Economics, International Trade Theory, Cross Cultural Development Studies
Contact	<a href="mailto:saim.eco@must.edu.pk">saim.eco@must.edu.pk</a>

## **Mr. Tanveer Bashir**

Designation	Lecturer
Qualification	M.Phil., Riphah International University, Islamabad
Area of interest	Statistics, Econometrics, Mathematical Economics, Population Economics
Contact	<a href="mailto:tanveer.eco@must.edu.pk">tanveer.eco@must.edu.pk</a>

## **Ms. Mehreen Zaid Ullah**

Designation	Lecturer
Qualification	M.Phil., International Islamic University, Islamabad
Area of interest	Microeconomics, Econometrics, Agricultural Economics
Contact	<a href="mailto:mehrin.eco@must.edu.pk">mehrin.eco@must.edu.pk</a>



### **Ms. Rani Saima Noureen**

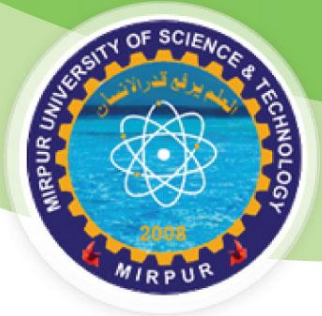
Designation	Junior Lecturer
Qualification	M.Phil., Allama Iqbal Open University
Area of interest	Development Economics, Econometrics, International Trade Theory
Contact	<a href="mailto:saima.eco@must.edu.pk">saima.eco@must.edu.pk</a>

### **Ms. Mariam Yassar**

Designation	Junior Lecturer
Qualification	M.Phil., National University of Science and Technology, Islamabad
Area of interest	Microeconomics, Macroeconomics, Development Economics
Contact	<a href="mailto:mariam.eco@must.edu.pk">mariam.eco@must.edu.pk</a>

### **Ms. Aneeda Ayub**

Designation	Junior Lecturer
Qualification	M.Sc., The University of Azad Jammu & Kashmir, Muzaffarabad
Area of interest	Microeconomics, Agricultural Economics, Islamic Economics
Contact	<a href="mailto:aneeda.eco@must.edu.pk">aneeda.eco@must.edu.pk</a>



## **BS Economics**

### **About the Program**

An understanding of economics is a vital component of education in social sciences and absolutely necessary for anyone interested in areas as business, environmental policy, welfare reform, international trade and finance, or globalization. BS Economics is a four-year degree program comprising of eight regular semesters. This program is designed to familiarize students with the broad range of issues and situations studied by economists and the tools they use. The curriculum starts at the very basic introductory level. As such no specific high school preparation is required, therefore students with diversified background equally fit in the program. However, an appreciation for mathematics and statistics shall prove to be useful. All economics undergraduates study a significant core of economic theory, mathematical and statistical methods, that will enable them to choose among a wide variety of higher electives.

## **Program Educational Objectives (PEOs)**

BS Economics program is designed to equip the graduates with the knowledge of economic theory, so that they could understand that how economic agents interact, and economy operates. The graduates of this program are expected not only to identify the economic problems, but also to suggest set of alternative solutions. In specific, following are the objectives of this program:

1. The graduates shall be equipped with the comprehensive theoretical and practical knowledge and skill set in order to contribute competently as economists and analysts in various capacities.
2. The graduate shall have cross-disciplinary knowledge of the core functions and operations of the economy.
3. The graduate shall be prepared to respect diversity and endeavor to work ethically.



## Program Learning Objectives (PLOs)

1. **Critical Thinking Skills:** An ability to optimally apply economic analysis to everyday economic problems in the real world. This shall allow them to understand current events and evaluate potential policy proposals. Moreover, an appreciation shall be developed to evaluate the role played by assumptions in situations that reach various conclusions to a specific economic or policy problem.
2. **Quantitative Reasoning Skills:** An ability to use empirical evidence to assess the validity of an economic argument. This shall involve the use of statistical data and methodology, ability to interpret statistical results and conduct appropriate statistical analysis independently.
3. **Problem-Solving Skills:** An ability to solve problems that have precise solutions as well as those that do not have precise answers and clarify conditions under which these solutions may be correct.
4. **Specialized Knowledge and Application of Skills:** An ability to develop critical as well as quantitative thinking skills specific to economics and related fields.
5. **Communication Skills:** An ability to communicate effectively in written, oral and graphical form about concrete questions and to prepare well-organized written arguments that clearly state assumptions/hypotheses supported by evidence.



### **Admission Criterion:**

Must have passed F.A/ F.Sc. /I.Com./I.C.S. or equivalent, with at least 45% marks

### **Selection Criterion:**

A candidate shall be selected on the basis of cumulative merit to be determined from his/her past academic record and achievements in the written tests conducted by the university.

### **Degree Requirements:**

A student of BS Economics is required to complete 130 credit hours of study, pass comprehensive oral exam. on S/U basis and minimum CGPA 2.5/4.0 to qualify for the degree.

### **Scholarships Offered:**

1. HEC
2. MUST
3. HBL Foundation

And others on merit and need base scholarships are available

### **Duration:**

08-12 Semesters



## Scheme of Studies

Semester	Course Code	Course Title	Credits
<b>First</b>	ENG-1107	English I	3
	ISL-1112	Islamic Studies	2
	ECO-1101	Principles of Microeconomics	3
	MAT-1115	Mathematics I	3
	COM-1105	Introduction to Computer	3
		Optional (Non-Economic)	3
	<b>Total</b>		<b>17</b>
<b>Second</b>	ENG-1207	English II	3
	PS-1217	Pakistan Studies	2
	ECO-1201	Principles of Macroeconomics	3
	MAT-1215	Mathematics II	3
		Optional (Non-Economics)	3
		Optional (Non-Economics)	3
	<b>Total</b>		<b>17</b>
<b>Third</b>	ENG-2107	English III	3
	ECO-2101	Intermediate Microeconomics	3
	ECO-2102	Development Economics	3
	STA-2120	Statistics I	3
		Optional (Non-Economics)	3
		Optional (Non-Economics)	3
	<b>Total</b>		<b>18</b>



<b>Fourth</b>	ARA-2201	Arabic	3
	ECO-2201	Intermediate Macroeconomics	3
	ECO-2202	History of Economic Thought	3
	STA-2220	Statistics II	3
		Optional (Non-Economics)	3
		Optional (Non-Economics)	3
		<b>Total</b>	<b>18</b>
<b>Fifth</b>	ECO-3101	Microeconomics	3
	ECO-3102	Macroeconomics	3
	ECO-3103	Mathematical Economics I	3
	ECO-3104	Islamic Economics	3
		Optional (Non-Economics)	3
	<b>Total</b>	<b>15</b>	
<b>Sixth</b>	ECO-3201	Economic Growth	3
	ECO-3202	Econometrics I	3
	ECO-3203	Mathematical Economics II	3
		Elective I	3
		Elective II	3
		<b>Total</b>	<b>15</b>





<b>Seventh</b>	ECO-4101	International Trade Theory	3
	ECO-4102	Econometrics II	3
	ECO-4103	Issues in Pak Economy	3
	ECO-4104	Research Methods	3
		Elective III	3
		<b>Total</b>	<b>15</b>
<b>Eight</b>	ECO-4201	Entrepreneurial Economics	3
	ECO-4202	Public Sector Economics	3
	ECO-4203	Monetary Economics	3
		Elective IV	3
		Elective V	3
		<b>Total</b>	<b>15</b>



### List of Elective Courses

Group A	
Code	Course Title
ECO-3204	Labor Economics
ECO-3205	Population Economics
ECO-3206	Comparative Economic System
ECO-3207	Environmental Economics
ECO-3208	Rural Development
ECO-3209	Ethics in Economics
ECO-3210	Industrial Economics
ECO-3211	Urban Economics
ECO-3212	Managerial Economics
ECO-3213	Economics of Education
ECO-3214	Transport Economics
ECO-3215	World Trade Organization (WTO)

Group B	
Code	Course Title
ECO-4105	International Finance
ECO-4106	Institutional Economics
ECO-4107	Financial Markets
ECO-4108	Regional Economics
ECO-4109	Political Economy
ECO-4110	Dynamic Macro Economics
ECO-4111	Human Resource Development



### Group C

Code	Course Title
ECO-4204	Agricultural Economics
ECO-4205	Health Economics
ECO-4206	Public Finance
ECO-4207	Experimental and Behavioral Economics
ECO-4208	Development Policy
ECO-4209	Poverty and Income Distribution
ECO-4210	Energy Economics
ECO-4211	Research Project/Internship
ECO-4212	Institutional Economics
ECO-4213	Welfare and Happiness Economics
ECO-4214	Project Appraisal and Investment Analysis
ECO-4215	Research Paper



## **M.Sc. Economics**

A deep understanding of economics is key to our continuing function as a global economy, helping to establish successful trade, monetary and welfare policies across nations. The M.Sc. Economics program provides a foundation in the tools of economic policy and data analysis. The program focusses on the development of strong analytical and quantitative skills. Students are well-trained in the application of economic theory and methods of statistical analysis. The program provides students with a number of skills and preparation for entering professional world. Employers from the public to private and non-profit sector value the knowledge base and skills, both analytical and empirical, that economists acquire. Students who wish to proceed for higher studies, will also be well placed with a strong foundation of economic theory, practice and application to real world phenomenon.

## **Program Objectives**

The objectives of program are:

- To provide the quality education based on sound theoretical and applied knowledge of the subject.
- To develop an understanding of microeconomics, macroeconomics, econometrics and their application in applied research.
- To develop critical thinking skills and the accumulation of factual knowledge
- To prepare students for advance based studies in economics.
- To train the students to disseminate subject knowledge and perform research-based jobs in the market.
- To enable students to solve problems and answer questions that arise in the private and public sectors by applying acquired economic knowledge and research tools.



### **Admission Criterion:**

Must have passed B.A/ B.Sc. /B.Com. or equivalent with at least second division or CGPA 2.5/4.0

### **Selection Criterion:**

A candidate shall be selected on the basis of cumulative merit to be determined from his/her past academic record and achievements in the written tests conducted by the university.

### **Degree Requirements:**

A student of M.Sc. Economics is required to complete 63 credit hours of study, pass comprehensive oral exam. on S/U basis and minimum CGPA 2.5/4.0 to qualify for the degree.

### **Scholarships Offered:**

- HEC
- MUST
- HBL Foundation
- Others on merit and need based scholarships are available

### **Duration:**

04-06 Semesters



## SCHEME OF STUDIES

Semester	Course Code	Course Title	Credit Hrs.
<b>First</b>	ECO-5101	Microeconomics-I	03
	ECO-5102	Macroeconomics-I	03
	ECO-5103	Mathematical Economics-I	03
	ECO-5104	Statistics for Economists	03
	ECO-5105	Islamic Economics	03
	<b>Total</b>		
<b>Second</b>	ECO-5201	Microeconomics-II	03
	ECO-5202	Macroeconomics-II	03
	ECO-5203	Mathematical Economics-II	03
	ECO-5204	Econometrics-I	03
	ECO-5205	Development Economics	03
		Optional-I	03
	<b>Total</b>		



<b>Third</b>	ECO-6101	International Trade Theory	03
	ECO-6102	Major Issue in Pak Economy	03
	ECO-6103	Research Methods	03
	ECO-6104	Econometrics-II	03
		Optional –II	03
	<b>Total</b>		
<b>Fourth</b>	ECO-6201	Entrepreneurial Economics	03
	ECO-6202	Public Sector Economic	03
	ECO-6203	Monetary Economics	03
	ECO-6204	Research Thesis or Two Optional courses	06
	ECO-6205	Comprehensive Oral Exam.	S/U Basis
		Optional –III	03
		Optional –IV	03
	<b>Total</b>		



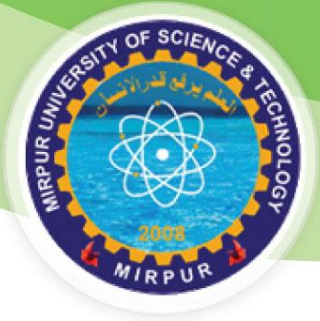
## LIST OF OPTIONAL COURSES

Group A	
ECO-5206	Labor Economics
ECO-5207	Comparative Economic System
ECO-5208	Environmental Economics
ECO-5209	Rural Development
ECO-5210	Ethics in Economics
ECO-5211	Urban Economics
ECO-5212	Economics of Education
ECO-5213	Transport Economics
ECO-5214	Natural Resource Economics

Group B	
ECO-6105	International Finance
ECO-6106	Institutional Economics
ECO-6107	Financial Markets
ECO-6108	Regional Economics
ECO-6109	Political Economy
ECO-6110	Dynamic Macro Economics
ECO-6111	Money Banking and Finance
ECO-6112	Business Economics
ECO-6113	Human Resource Economics

Group C	
ECO-6206	Agricultural Economics
ECO-6207	Health Economics
ECO-6208	Public Policies
ECO-6209	Experimental and Behavioral Economics
ECO-6210	Development Policy
ECO-6211	Poverty and Income Distribution
ECO-6212	Energy Economics
ECO-6213	Institutional Economics
ECO-6214	Population Economics
ECO-6215	Managerial Economics
ECO-6216	Welfare and Happiness Economics
ECO-6217	Project Appraisal and Investment Analysis
ECO-6218	Sustainable Development
ECO-6219	World Trade Organization (WTO)
ECO-6220	Industrial Economics





## M.Phil. Economics

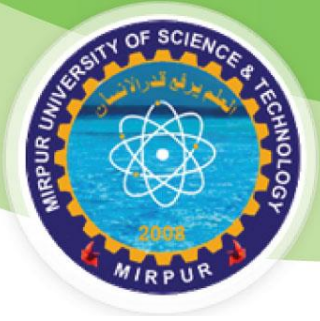
The M.Phil. Economics program is designed to give students a quantitative approach to economics providing a rigorous combination of economic theory, quantitative methods and applied research experience. The program combines theoretical rigor in core areas of economics with exceptional flexibility in course requirements to encourage students to explore their academic interests. It offers comprehensive instruction in a wide range of areas within the discipline, including advance microeconomics, advance macroeconomics, advance econometrics and a dynamic list of elective courses that enables students to receive a well-rounded graduate training. Through expanded course work requirements, students develop a breadth of exposure to empirical methods and analytical approaches to undertaking policy analysis and research, and enhanced communication skills. Program graduates with an excellent set of specialist and transferable

skills go on to obtain a wide range of positions in the private and public sectors, as well as continuing academic careers by pursuing a Ph.D degree.

### Program Objectives

The objectives of the **M.Phil. programs** are to develop students with the following capabilities:

- A fundamental understanding of economic principles and their application in the relevant field.
- An appropriate level of problem identification and conceptualization skills to focus on realistic and relevant research problems.
- A capability to integrate theory, technical information and appropriate methods in effectively analyzing and solving economic problems.
- An appropriate level of communication skills to effectively disseminate research output and technical information, including the practical implications of research analyses.



Graduate students are expected to have developed self-learning abilities and to be able to apply critical and innovative thinking. Courses, assignments, seminars, the writing of a thesis based on original research ideas for degree and the comprehensive examination, are the means by which the program meets and verifies its objectives.

#### **Admission Criterion:**

A candidate seeking admission to M.Phil. Economics program must:

- (a) have passed 16-year education with at least 65% marks in semester system and 50% marks in annual system of examination.
- (b) Have no 3<sup>rd</sup> division in his/her academic career.  
Have passed the GAT/NTS general test or any other test as required by the University

#### **Selection Criterion:**

A candidate shall be selected on the basis of cumulative merit to be determined from his/her past academic record and achievements in the written tests conducted by the Controller of Examinations and interview by Admission Committee of Department of Economics.

#### **Degree Requirements:**

A student of M.Phil. Economics is required to complete 31 credit hours of study and have to pass comprehensive oral examination on S/U basis. A candidate who fulfills all the requirements prescribed in University calendar volume-II, Chapter 29, shall be awarded the degree.

#### **Duration:**

03-08 Semesters



## Scheme of Studies

Semester	Course Code	Course Title	Credit Hours
<b>First</b> Course work Credit Hours: 12	ECO-701	Advanced Microeconomics*	3
	ECO-702	Advanced Macroeconomics*	3
		Optional-1	3
		Optional -2	3
<b>Second</b> Course Work Credit Hours: 12	ECO-703	Advanced Econometrics*	3
	ECO-704	Research Methods in Economics*	3
		Optional-3	3
		Optional-4	3
<b>Third &amp; Fourth</b> Research Work Credit Hours: 07	ECO-798	Seminar	1
	ECO-799	Research Thesis	6
<b>Total Credit Hours</b>			<b>31</b>

\* Compulsory course



## List of Optional Courses

Course Code	Course Title
ECO-711	Current Issues in Pakistan's Economy
ECO-712	Topics in Environmental and Natural Resource Economics
ECO-713	Issues in Development Economics
ECO-714	Topics in International Economics
ECO-715	Topics in Financial Economics
ECO-716	New Institutional Economics
ECO-717	Topics in Islamic Economic
ECO-718	Topics in Labor Economics
ECO-719	Topics in Public Sector Economics
ECO-720	Globalization and Economic Integration
ECO-721	Topics in Monetary Economics
ECO-722	General Equilibrium and Welfare Economics
ECO-723	Issues in Health Economics
ECO-724	Topics in Agricultural Economics
ECO-725	Topics in Urban Economics
ECO-726	Globalization and Socio- Economic Change



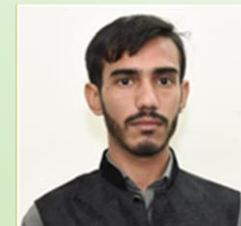
## Alumni Comments

I'm privileged to have the honor of being a part of MUST, as the institution has helped me a lot to gain enough knowledge about my field. I must say this is the best place to learn in a good environment. The devotion and hard work of faculty members is admirable as they've prepared me well to work confidently anywhere.



**Hira Azmi**  
**M.Sc. Economics**  
**Session 2017-19**

Finding the right path to success at the right time is really very important and for that way I had selected Department of Economics, MUST. The friendly environment, the systematic approach towards imparting education at the Department made me a competent individual. The wide range of activities- both curricular and co-curricular- along and the support from the Department is really very helpful for my future.



**Muhammad Nadeem**  
**M.Sc. Economics**  
**Session 2017-19**

Choosing Department of Economics was simply one of the best decisions I have ever made. The Department doesn't just give you a degree in Economics, they prepare you to use everything you learn in your future. I can honestly say the Department of Economics is the reason I have been able to step in and not only succeed in this career but excel beyond expectations.



**Gul Sanober**  
**M.Sc. Economics**  
**Session 2016-18**

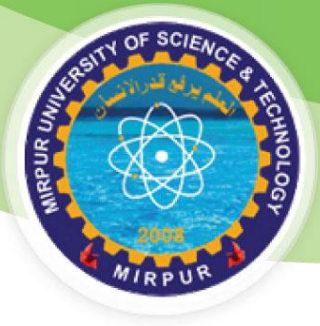


# DEPARTMENT OF ENGLISH

## Degree Programs Offered

BS-English

MA-English



**Coordinator:**

Dr. Sehrish Shafi

Tel: +92-5828-92023

E-mail: [chairperson.eng@must.edu.pk](mailto:chairperson.eng@must.edu.pk)

**Message from Coordinator:**

On this new academic year, I warmly welcome to our prospective students here to the Department of English at Mirpur University of Science & Technology (MUST). I believe that university education is beyond the classroom or textbooks therefore our courses offered are designed to impart key skills – thinking critically, communicating persuasively, and appreciating the people and culture through language and literature. We aim to prepare our students for success in the workplace and in life. We have the qualified and devoted faculty and we are continuously expanding as per the requirement. We are committed to developing and supporting a new generation of academic leadership. In the coming years we are focused on expanding of our programs by offering MPhil and PhD. We believe that World has become the global village and language plays a role of bridge. We are launching institute of languages as an off shoot of Department of English in which we will offer different world languages, for instance Arabic, Chinese, German and Turkish at first stage. This will provide wider opportunities to all the students and community to widen the horizons and prospects for students to venture new avenues. I believe that this department will prove as one of the best choices for the batch of 2020.



### **Faculty members of English Department**

**Row-1:** Ms Ambreen Rahim, Mr. Sabir Naqvi, Ms Asma Iqbal Kayani, Mr. Toqeer Ahmed, Ms. Saima Yasmeen

**Row-2:** Ms Saba Chaman, Ms Samia Anwar, Ms Asma Riaz, Ms Sania Ratyal, Ms Hina Mirza





## Faculty Members

### Dr. Sehrish Shafi

**Designation:** Coordinator/Lecturer  
**Qualification:** Ph.D.  
**Area of interest:** Phonetics & Phonology,  
Loanword Phonology, Language Variation and  
Change, Multilingualism  
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### Mr. Farooq Ahmed

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Semantics **E-mail:** [farooq.eng@must.edu.pk](mailto:farooq.eng@must.edu.pk)

### Mr. Toqeer Ahmed

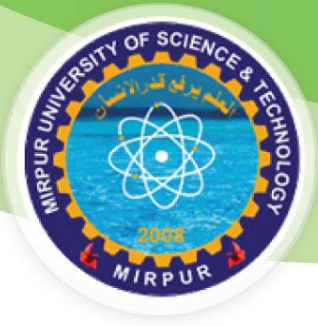
**Designation:** Assistant Professor  
**Qualification:** MPhil  
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Literature  
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### Ms. Lubna Aram Azam

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## Faculty Members

### Ms. Saba Chaman

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**Qualification:** MPhil

**Area of interest:** Sociolinguistics

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### Ms. Sania Nawaz Ratyal

**Designation:** Jr. Lecturer

**Qualification:** MA English

**Area of interest:** Communication Skills

**E-mail:** sania.eng@must.edu.pk

### Ms. Samia Anwar

**Designation:** Jr. Lecturer

**Qualification:** MA English

**Area of interest:** Literature

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### Ms. Shereen Ahmed

**Designation:** Jr. Lecturer (On contract)

**Qualification:** MPhil (University of Gujrat)

**Area of interest:** Psycholinguistics

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### Ms. Asma Riaz

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**Qualification:** MPhil

**Area of interest:** Learning English as a Second Language

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### Ms. Hina Mirza

**Designation:** Jr. Lecturer

**Qualification:** BS Hons,

**Area of interest:** Contemporary Literature

**E-mail:** hina.eng@must.edu.pk

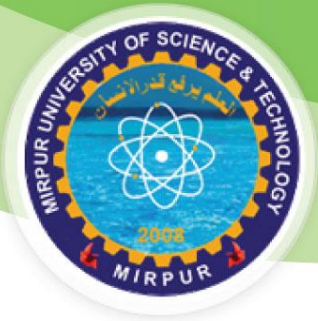
### Mr. Muhammad Jahangir Akhtar

**Designation:** Jr. Lecturer

**Qualification:** MPhil (MUL)

**Area of interest:** Literature and Translation Studies

**E-mail:** Jahangir.eng@must.edu.pk



## **BS English**

The 4-year BS program in English is an amalgamation of subjects that fall under English literature and linguistics. The learners are familiarized with eras of English literature and their prototype literature; prominent themes, writers, and characters of both poetry and prose. Keeping in view the significance that linguistics has attained in the past two decades, the learners are trained to analyze various text genres, comprehend contemporary grammars, speech processes, methods and approaches of English language teaching, as well as achieve a grasp on computational tools required to handle large scale data for more informed and reliable researches. Learners are further exposed to some allied courses to diversify their learning.

In the first two years of the program, the students will study compulsory, foundation, and general courses; whereas, in years two and three, the students take elective/major courses,

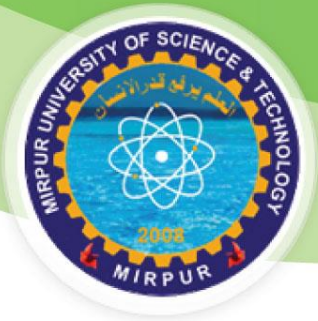
and in the final year of their study, the students are offered specialization in Literature or Linguistics.



Plantation day

## **PROGRAM EDUCATIONAL OBJECTIVES (PEOS)**

BS English program is designed, considering the need of English Language and Literature in modern society which is multilingual and advancing toward globalization due to the rapid development in technology. This program introduces the students with multi-cultural literature, its impact on society and



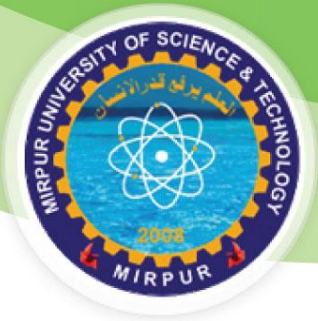
recent development in different disciplines of linguistics. The interaction of both disciplines at the same level shall bring diversity in students thinking, language variations and its influence on the learners.

#### **PROGRAM LEARNING OBJECTIVES (PLOS)**

- To enable the students to identify the current global trends in linguistics and literature.
- To provided them opportunities to critically analyze cultural growth in different societies across the globe
- To familiarize them with different writing styles and recurring ideas in different genera of the literature.
- To equip them with language learning theories and their classroom applications.



**Group photo of students during the Recreational Trip**



### Admission Criterion:

- Intermediate or equivalent qualification with at least 45% marks.
- Entry Test conducted by the University

### Degree Requirements:

A student shall be awarded the degree in respective discipline provided that he/she has completed the fundamental courses, faculty courses, project/fieldwork/thesis/ internship/practical training and comprehensive oral examination within the prescribed time period with atleast 57.5% cumulative percentage.

### Duration:

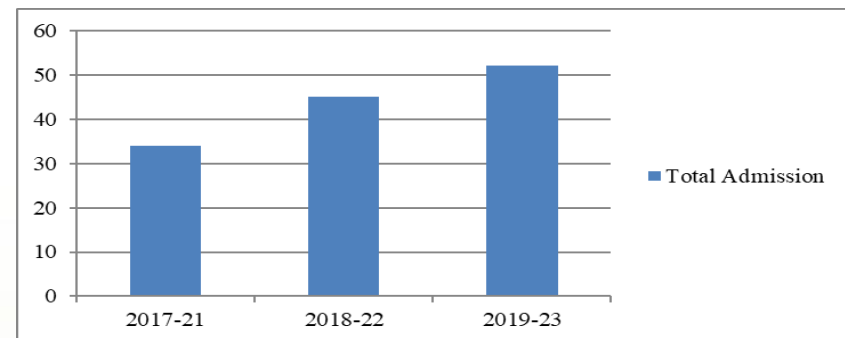
8-12 Semesters

### Scholarships Offered:

On the basis of different criteria following scholarships are offered:

- |                               |                             |
|-------------------------------|-----------------------------|
| 1. Merit Based Scholarship    | 5. Ehsas Scholarships       |
| 2. HBL Foundation Scholarship | 6. MUST scholarship         |
| 3. Allied Bank Scholarship    | 7. Baitul Mall -Scholarship |
| 4. HEC need-base              | 8. NGOs scholarships.       |

### Graphical Representation of Yearly Enrollment Progress





## Scheme of Study: BS Program

YEAR ONE - SEMESTER ONE		
Course Code	Course Title	Credit Hrs.
ENG-1101	English Language in Use	3+0
ENG-1102	Academic Reading and Writing	3+0
ENG1103	Introduction to English Literature	3+0
ENG-1104	Introduction to Linguistics	3+0
IR-1110	International Relations (Optional)*	3+0
ISL-1112	Islamic Studies (Optional)*	2+0
<b>Total</b>		<b>17</b>
YEAR ONE – SEMESTER-TWO		
Course Code	Course Title	Credit Hrs.
ENG-1201	Study Skills	3+0
ENG-1202	Advanced Academic Reading and Writing	3+0
ENG-1203	Introduction to Phonetics & Phonology	3+0
ENG-1204	History of English Literature	3+0
PS-1217	Pakistan Studies (Optional)*	2+0
SOC-1221	Sociology (Optional)*	3+0
<b>Total</b>		<b>17</b>



<b>YEAR TWO - SEMESTER THREE</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
ENG-2101	English Communication Skills	3+0
COM-4102	Introduction to Computing & IT (Optional)*	3+0
STA-0020	Introduction to Statistics (Optional)*	3+0
PSY-0019	Introduction to Psychology (Optional)*	3+0
ENG-2102	Classics in Drama	3+0
ENG-2103	Introduction to Morphology	3+0
<b>Total</b>		<b>18</b>
<b>YEAR TWO - SEMESTER FOUR</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
ENG-2201	Introduction to English Novel	3+0
HRC-2402	Human Rights and Citizenship (Optional)*	3+0
	Introduction to Education(G)	3+0
LAW-	Introduction to Law (Optional)*	3+0
ENG-2202	Introduction to Short Stories	3+0
ENG-2203	Introduction to Syntax	3+0
<b>Total</b>		<b>18</b>



<b>YEAR THREE - SEMESTER FIVE</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
ENG-3101	Introduction to Sociolinguistics	3+0
ENG -3102	Literary Criticism-I	3+0
ENG -3103	Testing and Evaluation	3+0
ENG -3104	Introduction to Prose	3+0
ENG -3105	Research Methodology	3+0
ENG -3106	Introduction to Semantics	3+0
<b>Total</b>		<b>18</b>
<b>YEAR THREE - SEMESTER SIX</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
ENG-3201	Literary Theories	3+0
ENG-3202	Modern Drama (19 <sup>th</sup> Century)	3+0
ENG-3203	Classics in Poetry-I (14 <sup>th</sup> -18 <sup>th</sup> Century)	3+0
ENG-3204	Stylistics	3+0
ENG-3205	Pragmatics	3+0
ENG-3206	Psycholinguistics	3+0
<b>Total</b>		<b>18</b>





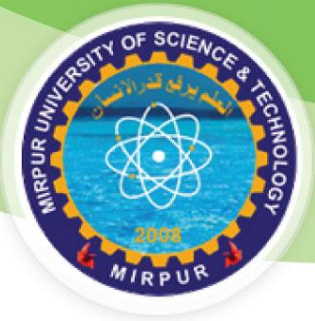
### YEAR FOUR - SEMESTER SEVEN: LITERATURE

Course Code	Course Title	Credit Hrs.
ENG-4101-a	Classics in Poetry-II (19 <sup>th</sup> Century)	3+0
ENG-4102-a	American Literature	3+0
ENG-4103-a	South Asian Literature	3+0
ENG-4104-a	Literary Theories	3+0
<b>Elective Courses (A minimum of 1 course is to be selected from the list)</b>		
ENG-4105-a	American Drama	3+0
ENG-4106-a	Afro-American Literature	3+0
ENG-4107-a	Continental Literature	3+0
ENG-4108-a	Pakistani Literature in English	3+0
<b>Total</b>		<b>15</b>
<b>LINGUISTICS: CORE COURSES</b>		
ENG-4101-b	Language Teaching Methodologies	3+0
ENG-4102-b	Discourse Analysis	3+0
ENG-4103-b	Second Language Acquisition	3+0
ENG-4104-b	World Englishes	3+0
<b>Elective Courses (A minimum of 1 course is to be selected from the list)</b>		
ENG-4105-b	Media Discourse Analysis	3+0
ENG-4106-b	Translation Studies	3+0
<b>Total</b>		<b>15</b>



<b>YEAR FOUR - SEMESTER EIGHT</b>		
<b>LITERATURE: CORE COURSES</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
ENG-4201-a	20 <sup>th</sup> Century Fiction	3+0
ENG-4202-a	Literary Criticism-II	3+0
ENG-4203-a	Postcolonial Literature	3+0
<b>Elective Courses (A minimum of 2 courses are to be selected from the list)</b>		
ENG-4204-a	Literary Movements	3+0
ENG-4205-a	Literary Stylistics	3+0
ENG-4206-a	Emerging Forms of Literature	3+0
ENG-4207-a	Term Paper	3+0
<b>Total</b>		<b>15</b>
<b>LINGUISTICS: CORE COURSES</b>		
ENG-4201-b	Creative Writing	3+0
ENG-4202-b	Language and Gender	3+0
ENG-4203-b	Language Culture & Identity	3+0
<b>Elective/Major Courses (A minimum of 2 courses are to be selected from the list)</b>		
ENG-4204-b	Genre Analysis	3+0
ENG-4206-b	Anthropological Linguistics	3+0
ENG-4205-b	English for Specific Purpose	3+0
ENG-4207-b	Term Paper	3+0
<b>Total</b>		<b>15</b>

**Note:** Any of these (Optional)\* courses shall be offered subject to the availability of expert.



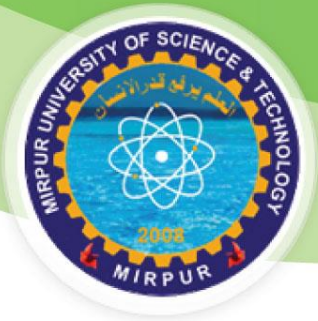
### **MA English (2-Years Program)**

MA English 2-year program serves as a platform for the potential graduates in literature and linguistics. Literature is the reflection of a society expressed through variety of genres of

its kind. It provides a fine analysis of strengths, weaknesses, opportunities, and threats of the contemporary society in order to guide its development. Literature serves critical role in social development that encourages values and norms that bind



**2<sup>nd</sup> Departmental Council meeting**



society in a harmonious manner with a delicate sense of aesthetics. Linguistics focuses on the study of language that explores the development and use of language in context. Communication is at the core of personal, professional, and social roles. Linguistics equips with the necessary tools and techniques to share ideas efficiently and effectively. Creative and communicative aspects of the graduates are polished besides inculcating the necessary value of civic responsibility. The department aims to provide graduates with academic accomplishment and personal development:

### **PROGRAM OBJECTIVES**

1. To enable the graduates to apply knowledge gained in the degree program effectively and efficiently.
2. To encourage critical thinking and effective communication skills.
3. To step into Research and Development (R&D) effectively.
4. To pursue higher studies in any international University of high repute.
5. To enable the students to identify the current global trends in linguistics and literature



### Admission Criterion:

#### Entry Requirement:

- B.A at least 2<sup>nd</sup> Division
- Entry Test conducted by the University

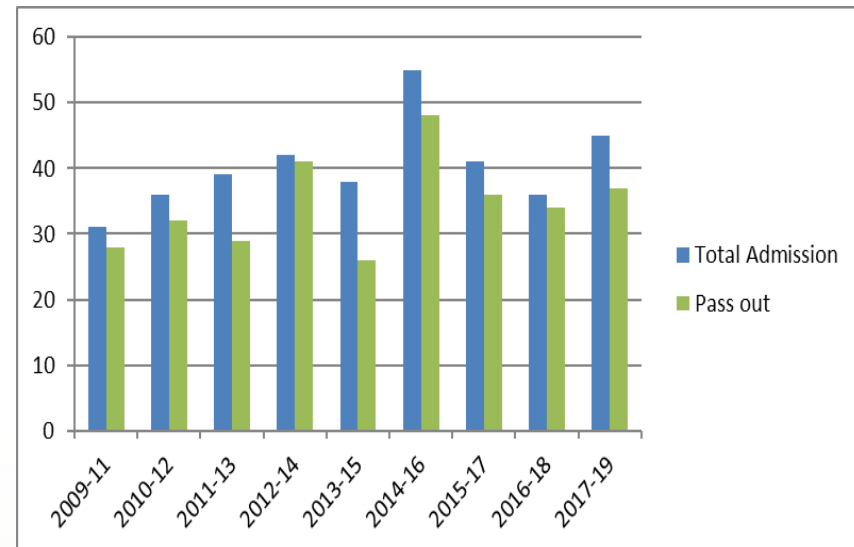
### Degree Requirements:

A student shall be awarded the degree in respective discipline provided that he/she has completed the fundamental courses, faculty courses, project/fieldwork/thesis/ internship/practical training and comprehensive oral examination within the prescribed time period with at least 57.5% cumulative percentage.

### Duration:

4-6 semester

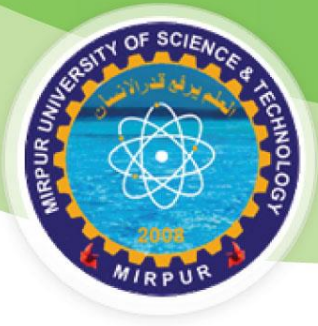
### Graphical Representation of Yearly Enrollment & Pass-out Ratio





### Scheme of Studies for MA- English 2-year program

Semester	Code	Course Title	Credit Hrs
1 <sup>st</sup>	ENG-5101	Academic Discourse	3
	ENG-5102	Phonetics and Phonology	3
	ENG-5103	Introduction to Language & Linguistics	3
	ENG-5104	History of English Literature	3
	ENG-5105	Poetry-I	3
2 <sup>nd</sup>	ENG-5201	Sociolinguistics	3
	ENG-5202	TESOL	3
	ENG-5203	Literary Criticism	3
	ENG-5204	Classical Drama	3
	ENG-5205	Victorian English Novels	3
3 <sup>rd</sup>	ENG-6301	Stylistics	3
	ENG-6302	Poetry-II	3
	ENG-6303	Shorter Fiction	3
	ENG-6304	Prose	3
	ENG-6305	Research Methodology	3
	ENG-6306	Semantics	3
4 <sup>th</sup>	ENG-6401	Pragmatics	3
	ENG-6402	Modern Drama	3
	ENG-6403	Modern English Novels	3
	ENG-6404	Introduction to Morphology & Syntax	3
	ENG-6405	Comprehensive Oral Examination	S/U
	ENG-6406	Internship	S/U
	ENG-6407	Thesis (Optional)*	6



## ALUMNI MESSAGES

Assalam-Alikum, I am umm-e-Ruman, student of BS-5, department of English. With the passage of time I realized that MUST is a place where the dreams come true. It not only offers gold standard qualification but also focuses on nurturing the individual's skills. My teachers help me to enhance my skills how to deal with future challenges. It groomed me intellectually and made me morally strong to be an effective global citizen. Must join MUST.



**Umm-e-Ruman**  
**BS English**  
**5<sup>th</sup> Semester**

It's been a great honour for me to be a part of MA English in MUST. Ever since I took admission here I feel my personality grown up both ethically and morally. It is just because of highly qualified teachers who are very sincere to their work. The attitude of all the teachers especially Ma'am Sehrish is highly supportive and full of motivation. I would prefer you to take admission here if you really want to enhance your knowledge and your personality.



**Uzair Chohan**  
**MA English**  
**3<sup>rd</sup> Semester**

I have relished attending 'MUST' in exploring new horizons in English Language and Literature. All faculty members of English Department are immensely cooperative and friendly. Indubitably, it is one of the most prestigious universities in Pakistan whence I have had the most overwhelming experience!



**Rida Fatima**  
**MA English**  
**3<sup>rd</sup> Semester**

DEPARTMENT OF

# STATISTICS

Programs Offered  
BS Statistics







## Faculty Members

### Dr Amir Saghir

**Designation** Associate Professor  
**Qualification** PhD  
**Area of interest** Statistical Process Monitoring  
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### Dr Tassaddaq Hussain

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### Mr. Zahid-ur-Rehman

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### Mr. Tanveer Bashir

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### Mr Muhammad Rafaqat

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### Ms Asma Rashid

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**Area of interest** Applied Statistics  
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## **BS Statistics**

The Mirpur University of Science and Technology (MUST) is going to start the Department of Statistics from the academic session Fall 2020. The core objective of the Department is to acquaint students with statistical ideas and methods. This department provides not only a good combination of pure and applied statistics but also strong knowledge of mathematical statistics which enables passed out graduates to successfully play their respective role in the country development.

In the upcoming session, we are planning to offer BS programme in Statistics. This programme will be generally a career oriented and provides graduates of the program with professional flexibility and exciting opportunities for rewarding careers in different fields such as biostatistics, market research,

econometrics, actuarial science, and statistical computing.

### **Program Mission**

To train the next generation professionals to gain advanced knowledge in Statistics that is required to design and implement novel methods, useful to define and solve problems with emphasis on acquisition, representation, retrieval, visualization and analysis of statistical data.

#### **Admission Criterion:**

Intermediate (F.Sc. Pre-Engineering or Intermediate or General Science Group with Statistics)

#### **Duration:**

8-12 Semesters



### Scheme of Study (BS Statistics)

Course Code	1 <sup>st</sup> Semester		Credit hour
	Courses		
STA- 1101	Introductory Statistics		3+0
COM- 1105	Introduction to Computer		3+0
ENG- 1107	English-I (Functional English)		3+0
MAT-1115	Calculus-I		3+0
ISL-1112	Islamic Studies		2+0
	General-I		2+0
	General-II		3+0
<b>Total Credit Hours</b>			<b>19</b>
Course Code	2 <sup>nd</sup> Semester		Credit hour
	Courses		
STA- 1201	Introduction to Probability Distributions		3+0
ENG- 1207	English-II		3+0
MAT-1215	Calculus-II		3+0
PS-1217	Pakistan Studies		2+0
	General-III		3+0
	General-IV		3+0
<b>Total Credit Hours</b>			<b>17</b>



Course Code	3 <sup>rd</sup> Semester		Credit hour
	Courses		
STA- 2301	Basic Statistical Inference		3+0
	Communication Skills		3+0
ENG- 2307	English-III		3+0
MAT-2315	Calculus-III		3+0
	General-V		3+0
	General-VI		3+0
<b>Total Credit Hours</b>			<b>18</b>
Course Code	4 <sup>th</sup> Semester		Credit hour
	Courses		
STA- 2401	Sampling Theory		3+0
STA- 2402	Introduction to Regression Analysis and Experimental Design		3+0
STA- 2403	Applied Statistics		3+0
MAT-2415	Linear Algebra		3+0
MAT-	Differential Equations		3+0
MAT-	Numerical Methods		3+0
<b>Total Credit Hours</b>			<b>18</b>



Course Code	5 <sup>th</sup> Semester		Credit hour
	Courses		
STA- 3501	Probability Theory-I		3+0
STA- 3502	Parametric Statistical Methods		3+0
STA- 3503	Sampling Techniques		3+0
STA- 3504	Econometric Theory-I		3+0
STA- 3505	Mathematical Methods for Statistics		3+0
<b>Total Credit Hours</b>			<b>15</b>
Course Code	6 <sup>th</sup> Semester		Credit hour
	Courses		
STA- 3601	Probability Theory-II		3+0
STA- 3602	Experimental Design-I		3+0
STA- 3603	Statistical Inference-I (Estimation)		3+0
STA- 3604	Econometric Theory-II		3+0
STA- 3605	Research Methodology		3+0
<b>Total Credit Hours</b>			<b>15</b>



Course Code	7 <sup>th</sup> Semester	Credit hour
	Courses	
STA- 4701	Experimental Design-II	3+0
STA- 4702	Statistical Inference-II (Hypothesis Testing)	3+0
STA- 4703	Statistical Quality Control	3+0
STA- 4704	Multivariate Analysis	3+0
STA- 4705	Non-Parametric Methods	3+0
<b>Total Credit Hours</b>		<b>15</b>
Course Code	8 <sup>th</sup> Semester	Credit hour
	Courses	
STA- 4801	Bayesian Inference	3+0
STA- 4802	Statistical Packages	3+0
STA- 4803	Operation Research	3+0
STA- 4804	Time Series Analysis	3+0
	Elective Course	3+0
<b>Total Credit Hours</b>		<b>15</b>

**Course and Credit Hour Requirements:** A total of 132 credit hours (as per HEC Policy) are required to complete Bachelor of Science in Statistics.



### Lists of General and Elective Courses

List of General Courses						
Sr. No.	Subject	Cr.hr.		Sr. No.	Subject	Cr. Hr.
1.	Introduction to Psychology	2+0		8.	Business Administration	3+0
2.	Introduction to Logic	3+0		9.	Numerical Methods	3+0
3.	Fundamentals of Economics	3+0		10.	Calculus-III	3+0
4.	International Relations	3+0		11.	Differential Equations	2+0
5.	Basics of Sociology	3+0		12.	Linear Algebra	3+0
6.	Introduction to Environmental Sciences	3+0		13.	Computer Languages	3+0
7.	Principles of Management	3+0				
List of Elective Courses within the Majors						
Sr. No.	Subject	Cr.hr.		Sr. No.	Subject	Cr. Hr.
1.	Bayesian Theory	2+0		8.	Actuarial Statistics-I	3+0
2.	Stochastic Process	3+0		9.	Actuarial Statistics –II	3+0
3.	Statistical Reliability Analysis	3+0		10.	Research Project / Research Report	3+0
4.	Decision Theory	3+0		11.	Population Analysis	2+0
5.	Mathematical Models and Simulations	3+0		12.	Research Methodology	3+0
6.	Categorical Data Analysis	3+0		13.	Official Statistics	3+0
7.	Robust Methods	3+0		14.	Data Science	

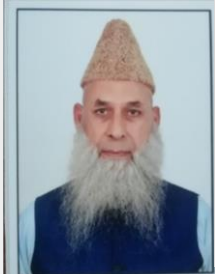


# PALANDRI

## CAMPUS MUST







### **Campus Coordinator:**

Dr. Shafiqur Rehman Khan

Tel: +92-5825-960031

E-mail:

shafiq.fr@must.edu.pk

### **Message from Coordinator:**

The MUST Pallandri Campus was established on May 10, 2018, and was formally inaugurated by the President of Azad Jammu and Kashmir / Chancellor, MUST on July 30, 2018.

This is a unique matter of pride and honor that two new programs of BS-Forestry (four years) and BS-Tourism and Hospitality Management (four years) are started in MUST Pallandri Campus for the first time in the history of Azad Kashmir to provide technical education and equip the students to

play their lead roles in developing and promoting highly important sectors of forestry and tourism in AJ&K.

Later on, three regular lecturers were also appointed by MUST, Mirpur, each in departments of Forestry, BS-Elementary Education (four years) and Tourism and Hospitality. We have also hired visiting lecturers to assist us in teaching allied courses. Alhamdulillah, The Campus is running successfully with collective and team efforts of the faculty and MUST Mirpur administration. I am quite confident and sure that intake of students will increase in coming sessions. Currently, we have students from almost all the districts of AJ&K and are hoping students to come from Pakistan in new year as well, In Shah Allah.

Currently, the campus is established in premises of Hostel of Khan Muhammad Khan Post-graduate Boys College, Pallandri. However, a chunk of land of 523 kanal has been awarded by the Government of AJ&K about five kilo meter away from the current location of the campus at Islampura on Baral road. The demarcation of the land has been completed with the active cooperation of District Administration and MUST, Mirpur. PC-I has been approved by the Planning and Development of MUST, Mirpur.

I welcome all the students to be part of our campus and wish them a very pleasant, peaceful and productive stay here in the campus and have expectations from them to promote brotherhood, mutual understanding and good relationships among the districts they come from, and the most important that focus on their studies and learning to enable them to serve for the nation with dedication, hardworking and commitment. May Allah bless you with the brightest success in your future.

### **Programs Offered:**

- 1. Forestry**
- 2. Education**
- 3. Tourism & Hospitality**
- 4. Physics**
- 5. History**
- 6. International Relations**



## Faculty Members

### Mr. Qur Rehman

**Designation** Lecturer

**Qualification** M.Phil ,PhD continue

**Area of interest** Genetics  
qumqum.botany@must.edu.pk

### Ms. Saadia Shafique Dar

**Designation** Lecturer

**Qualification** MSc Forestry

**Area of interest** Forestry & Planning  
usama.fr@must.edu.pk

### Mr. Hanif Dar

**Designation** Junior Lecturer (Visiting)

**Qualification** M.Phil. in progress

**Area of interest** Linguistics  
Saaddar1985@gmail.com

### Ms Qumqum Noshad

**Designation** Lecturer

**Qualification** M.Phil ,PhD continue

**Area of interest** Genetics  
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### Ms. Laila Hameed

**Designation** Lecturer(Visiting)

**Qualification** MS GIS & Remote Sensing

**Area of interest** GIS & Remote Sensing  
virgozonn@gmail.com

### Mr. Shahid Hussain

**Designation** Lecturer (Visiting)

**Qualification** MS Computer Science

**Area of interest** Computer Science  
Sardar\_shahid96@yahoo.com



## Faculty Members

### Ms. Saba Gul

**Designation** Junior Lecturer (Visiting)

**Qualification** MS Statistics in progress

**Area of interest** Statistics

**E-mail** 03490511596@gmail.com

### Mr. Zubair Iftikhar

**Designation** Lecturer (Visiting)

**Qualification** MSC mathematics

**Area of interest** Mathematics

### Ms. Rashida Rasheed

**Designation** Lecturer (Visiting)

**Qualification** MS Dawa & Islamic Culture

**Area of interest** Dawa & Islamic Culture

**E-mail** Rashdarashid05@gmail.com



**Faculty members of Forestry Department**

DEPARTMENT OF

# FORESTRY

**Programs Offered**

BS Forestry





## **BS Forestry**

The territory of Azad Jammu and Kashmir extends over an area of 3.286 million acre; whereas approximately 43% of the total land mass is under the legal control of Forest Department. The territory is blessed with a variety of climatic, edaphic and topographic factors that make the conditions most conducive and suitable for growth of forests in the area. Hence, we have rich variety of natural forests extending from xerophytic conditions in the South and Alpine pastures in the North. Famous tree species of conifer tree like *Pinus roxburghii* (Chir pine), *Pinus wallichiana* (Kail), *Cedrus deodara* (Deodar), *Picea smithiana* (Spruce), and *Abies pindrow* (Fir) are found in the territory of AJ&K. These forests are a major source of meeting requirements of timber, firewood, fodder and sustenance of people of AJ&K. These forests provide a variety of valuable goods and services; serve as "water towers", mitigate global

warming by the process of carbon sequestration, harbor biological and genetic diversity and gene pool, provide refuge and food to wildlife, protect fragile watersheds of the area, and provide healthy and pleasant environment, add to the scenic beauty and help promoting tourism in the area. Hence, meeting challenges of conservation and promotion of these forests, the state needs qualified and trained manpower. There is only Institute, namely "Pakistan Forest Institute" based at Peshawar where students are trained and are awarded degrees at B.Sc. and M.Sc. Forestry level, who render their services in their respective provincial forest departments after successful completion of the degree programs. Therefore, establishment of department of forestry in AJ&K under MUST is highly justified and is the need of the hour. This will fulfill the growing needs of trained manpower, provide opportunities to the students to equip themselves with forestry and tourism knowledge and



training and be able to render their services in protection and conservation of the forests of AJ&K.

The Department has a mandate to carry out both teaching and research to address the problems of Conservation of Natural Resources and Protection of Environment, with special emphasis on problems such as deforestation and proper management of natural Forest resources of the country. The Department is currently offering the degrees of B.S Forestry (four years).

### **Program Mission**

To improve the quality of life through providing support of effective research and trained manpower for scientific management of forests, rangelands, wildlife, watersheds, environment protection, and biodiversity conservation in Pakistan.

### **Program Educational Objectives (PEOs)**

1. To impart higher education at graduation level in the field of Forestry & Range Management, Watershed and Wildlife Management.
2. To supervise post graduate students in planning, conduct, and evaluation of thesis research as part of their degree programs.
3. To develop closer linkages with line departments and research organizations for mutual collaboration in research/development activities of natural resource conservation and improvement
4. To promote awareness among students, researchers, policy makers and community in general about natural resource conservation and management through publishing articles and organizing seminars/workshops on the subjects related to natural resource management.



## Program Learning Objectives (PLOs)

1. Promotion of farm forestry in the area to reduce pressure on native forest through farm forestry projects and research
2. To understand the significance of Non Wood Forest Produce (NWFP) to local communities through various marketing activities.
3. Our graduates have sound knowledge of Forestry, they easily get jobs in Government Organizations as well as in private and international NGOs.
4. The graduates can also appear in competitive examinations e.g. Azad Kashmir Public Service Commission and Federal Public Service Commissions for administrative and academic positions.





### **Admission Criterion:**

Students with FSc. pre-engineering/ FSc premedical with at least 45% marks are eligible to apply.

### **Degree Requirements:**

Student with 2.5 CGPA is eligible for degree.

### **Scholarships Offered:**

- |                           |                             |
|---------------------------|-----------------------------|
| 1. Need based scholarship | 4. Scottish Scholarship     |
| 2. HBL foundation         | 5. MUST scholarship         |
| 3. Scholarship            | 6. Merit based scholarship. |

### **Duration:**

It is a 4 years degree program with 8 semesters and consisting of 123 credit hours inclusive of 37 credit hours for lab/field tours; 75 (47-28) credit hours for core courses; 09 credit hours for Elective courses; 04 credit hours for internship report; and a 04 credit hours for project.





### Scheme of Study (BS FORESTRY)

<b>Programme Name:</b>	BS-Forestry	
<b>Duration:</b>	04 years:	
<b>Number of semesters:</b>	08	
<b>Weeks per semester:</b>	16 - 18 (16 for teaching and 2 for exams)	
<b>Total credit hours:</b>	130-140	
<b>Credit hours per semester:</b>	15-18	
<b>Forestry Courses:</b>	77%	
<b>Non-Forestry</b>	23%	
<b>Course Code</b>	<b>Title</b>	<b>Credit Hours</b>
<b>FIRST SEMESTER</b>		
FRST-1101	Introduction to Forestry	3(2-1)
BIOL-1102	Biology	2 (1-1)
MAT-1115	Mathematics	2 (2-0)
IT-1101	Introduction to Information and Communication Technologies	3 (2-1)
ENG-1107	English-I (Functional English)	3 (3-0)
PS-1117	Pakistan Studies	2 (2-0)
ISL-1112	Islamic Studies /Ethics**	2 (2-0)
FRST-1102	Orientation Tour	1(0-1)
	<b>Total</b>	<b>18 (14-4)</b>



<b>SECOND SEMESTER</b>		
STA-1220	Elementary Statistics	3 (3-0)
ENG-1207	English-II (Communication Skills)	3 (3-0)
FRST-1201	Introduction to Environment	3 (2-1)
FRST-1202	Geology and Soil Science	3 (2-1)
ARA-1201	Arabic Studies	2 (2-0)
ECO-1206	Principles of Economics	3 (3-0)
	<b>Total</b>	<b>17 (15-2)</b>
<b>THIRD SEMESTER</b>		
FRST-2301	Forest Pathology	3(2-1)
FRST-2302	Public Policy and Administration & Orientation	2 (2-0)
FRST-2303	Forest Genetics	3(2-1)
FRST-2304	Forest Ecology	3 (3-0)
FRST-2305	Forest Entomology	3 (2-1)
FRST-2306	Forest Taxonomy	3 (2-1)
FRST-2307	Forest Accounts and Procedure	2(2-0)
	<b>Total</b>	<b>19 (15-4)</b>



<b>FOURTH SEMESTER</b>		
FRST-2401	Forest Engineering – I	3 (2-1)
FRST-2402	Biodiversity and Climate Change	3 (2-1)
FRST-2403	Participatory Forestry	3 (2-1)
FRST-2404	Introduction to GIS Remote Sensing	3 (2-1)
FRST-2405	Integrated Land Use Management Systems	3 (2-1)
FRST-2406	Forestry Extension	2 (2-0)
FRST-2407	Study Tour of Forest Types I: Pak, AJK & GB	2 (0-2)
	<b>Total</b>	<b>19 (12-7)</b>
<b>FIFTH SEMESTER</b>		
FRST-3501	Nursery Technology and Reforestating Forests	3 (2-1)
FRST-3502	Forest Policy and Law	3 (3-0)
FRST-3503	Wood Science and Technology	3 (2-1)
FRST-3504	Forest Survey and Leveling	3 (2-1)
FRST-3505	Silviculture-I	2 (2-0)
FRST-3506	Forest Engineering II	2 (1-1)
FRST-3507	Study Tour of Forest Types II: Pak, AJK & GB	2(0-2)
	<b>Total</b>	<b>18(12-6)</b>



<b>SIXTH SEMESTER</b>		
FRST-3601	Forest Management and Conservation	3 (3-0)
FRST-3602	Watershed Management	3 (2-1)
FRST-3603	Range Management	3 (2-1)
FRST-3604	Wildlife and Fisheries Management	3 (2-1)
FRST-3605	Forest Biometrics	3 (2-1)
FRST-3606	Non-Wood Forest Products	2 (2-0)
FRST-3607	Study Tour (Forest Management)	1 (0-1)
	<b>Total</b>	<b>18 (13-5)</b>
<b>SEVENTH SEMESTER</b>		
FRST-4701	Ecotourism and Park Management	2(2-0)
FRST-4702	Forest Resource Economics	2(2-0)
FRST-4703	Silviculture-II	3 (2-1)
FRST-47--	03 Elective Courses	09
	<b>Total</b>	<b>16 (15-1)</b>
<b>EIGHTH SEMESTER</b>		
FRST-4801	Forest Management Plan – I	3(3-0)
FRST-4802	Forest Management Plan – II	4(0-4)
FRST-4803	Research Methods and Scientific Writing	4(4-0)
FRST-4804	Research Project / Internship / Special Paper	4(0-4)
FRST-4805	General Viva	S / NS
	<b>Total</b>	<b>15 (7-8)</b>
	<b>Grand Total</b>	<b>140 (103-37)</b>



### LIST OF SPECIALIZATION COURSES

One of the following specializations may be opted for, subject to approval of concerned forestry institution/university:

Code	Course	Credit Hours
<b>1) Forest Management and Conservation</b>		<b>9 (6-3)</b>
FRST-4704	i. Forest Inventory & Analysis	3 (2-1)
FRST-4705	ii. Conservation Forest Management	3 (2-1)
FRST-4706	iii. Production Forest Management	3 (2-1)
<b>2) Watershed Management</b>		<b>9 (6-3)</b>
FRST-4707	i. Soil Conservation Techniques	3 (2-1)
FRST-4708	ii. Forest Meteorology	3 (2-1)
FRST-4709	iii. Forest and Range Hydrology	3 (2-1)
<b>3) Range Management</b>		<b>9 (7-2)</b>
FRST-4710	i. Range Vegetation Analysis	<b>3 (2-1)</b>
FRST-4711	ii. Livestock Nutrition and Grazing Management	3 (2-1)
FRST-4712	iii. Drought Management in Rangelands	3 (3-0)
<b>4) GIS and Remote Sensing Techniques</b>		<b>9 (3-6)</b>
FRST-4713	i. Digital Cartography	3 (1-2)
FRST-4714	ii. Land Use Planning	3 (1-2)
FRST-4715	iii. Forest / Range Assessment and Monitoring	3 (1-2)
<b>5) Participatory Forest Management</b>		<b>9 (7-2)</b>
FRST-4716	i. Community Based Forestry	3 (3-0)
FRST-4717	ii. Participatory Forest Management Planning	3 (2-1)



FRST-4718	iii.	Participatory Forest Assessment	3 (2-1)
<b>6) Sericulture</b>			<b>9 (5-4)</b>
FRST-4719	i.	Silkworm Rearing	3 (2-1)
FRST-4720	ii.	Silk Seed and Cocoon Technology	4 (2-2)
FRST-4721	iii.	Moriculture	2 (1-1)
<b>7) Wood Science and Technology</b>			<b>9 (5-4)</b>
FRST-4722	i.	Wood Harvesting Techniques	2 (1-1)
FRST-4723	ii.	Wood Structure and Identification	2 (1-1)
FRST-4724	iii.	Wood Testing and Processing	2 (1-1)
FRST-4725	iv.	Wood Based Products	3 (2-1)
<b>8) Wildlife and Fisheries Management</b>			<b>9 (9-0)</b>
FRST-4726	i.	Wildlife Biology and Ecology	3 (3-0)
FRST-4727	ii.	Wildlife Management and Research	3 (3-0)
FRST-4728	iii.	Wildlife Policies, Laws and Administration	3 (3-0)
<b>9) Agro Forestry</b>			<b>9 (7-2)</b>
FRST-4729	i.	Agro Forestry Systems	3 (3-0)
FRST-4733	ii.	Farm Forestry Management	3 (2-1)
FRST-4731	iii.	Marketing of Agro Forestry Products	3 (2-1)
<b>10) Forest Engineering and Logging</b>			<b>9 (7-2)</b>
FRST-4732	i)	Forest Machinery	3 (3-0)
FRST-4733	ii)	Forest Logging	3 (2-1)
FRST-4734	iii)	Applied Mechanics of Forestry	3 (2-1)



<b>11) Environmental Forestry</b>		<b>9 (7-2)</b>
FRST-4735	i. Environment and Forestry	2 (2-0)
FRST-4736	ii. Environmental Pollution and Mitigation	3 (3-0)
FRST-4737	iii. Environmental Impact Assessment	2 (1-1)
FRST-4738	iv. Environmental Policies and Laws	2 (1-1)
<b>12) Forestry and Climate Change</b>		<b>9 (7-2)</b>
FRST-4739	i. Forest, Carbon and Climate Change	3 (2-1)
FRST-4740	ii. Trends in Forestry and Climate Change	3 (3-0)
FRST-4741	iii. Tree Eco-Physiology	3 (2-1)
<b>13) Non Wood Forest Products</b>		<b>9 (7-2)</b>
FRST-4742	i) Production Technology of Medicinal Plants / Pharmacognocoy	3 (3-0)
FRST-4743	ii) Sericulture and Apiculture Techniques	3 (2-1)
FRST-4744	iii) Minor Forest Products	2 (1-1)
FRST-4745	iv) Economics of Non Wood Forest Products	1 (1-0)

# DEPARTMENT OF EDUCATION

## Program Offered

BS Education (4 Years)







## B.Ed. Elementary (4 years)

### Admission Requirements

4. FA/F.Sc / A level or equivalent with minimum 2nd Div with no 3rd div in the academic career
5. FA/F.Sc / A level with school subjects.
6. The admission will be subjected to the provision of the character certificate from the last degree institution

### Duration of Degree

8-10 Semesters

### Scheme of Study B. Ed. Elementary (Discipline 1: Urdu, English Discipline 2: History, Science)

<b>Compulsory Courses</b>	21 Credits
<b>Professional Courses</b>	49 Credits
<b>Foundation Courses</b>	23 Credits
<b>Content Courses</b>	27 Credits
<b>Teaching Practice</b>	15 Credits
<b>Total Credit Hours:</b>	<b>135 Credits</b>

#### SEMESTER I

Course Code	Courses	Credit Hrs.
ENG-1107	Functional English-I (Compulsory)	3
ISL-0012	Islamic Studies/ Ethics (Compulsory)	2
EDU-3103	Child Development (Foundation)	3
EDU-3104	Urdu / Regional Languages (Content)	3
EDU-3105	General Science (Content)	3
EDU-3106	General Methods of Teaching (Foundation)	3
<b>Total Credit Hours</b>		<b>17</b>



<b>SEMESTER II</b>		
<b>Course Code</b>	<b>Courses</b>	<b>Credit Hrs.</b>
ENG-1207	English-II (Communication Skills Compulsory)	3
EDU-3202	Computer Literacy (Compulsory)	3
EDU-3203	Classroom Management (Foundation)	3
EDU-3204	General Mathematics (Compulsory)	3
PS-0017	Pakistan Studies (Compulsory)	2
EDU-3206	Methods of Teaching Islamic Studies (Professional)	3
	<b>Total Credit Hours</b>	<b>17</b>
<b>SEMESTER III</b>		
<b>Course Code</b>	<b>Courses</b>	<b>Credit Hrs</b>
EDU-4301	Teaching Literacy Skills (Professional)	3
EDU-4302	Art, Crafts and Calligraphy (Content)	3
EDU-4303	Teaching of Urdu (Professional)	3
EDU-4304	Science II (Professional)	3
EDU-4305	Instructional and Communication Technology (ICT) in Education (Professional)	2
EDU-4306	Teaching Practice (Short Term)	3
	<b>Total Credit Hours</b>	<b>17</b>



<b>SEMESTER – IV</b>		
<b>Course Code</b>	<b>Courses</b>	<b>Credit Hrs</b>
EDU-4401	Classroom Assessment (Foundation)	3
EDU-4402	Teaching of English (Professional)	3
EDU-4403	Teaching of Mathematics (Professional)	3
EDU-4404	School, community and Teacher (Foundation)	3
EDU-4405	Teaching of Social Studies (Professional)	2
EDU-4406	The Teaching Practicum	3
<b>Total Credit Hours</b>		<b>18</b>
<b>SEMESTER – V</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs</b>
EDU-5501	English – III (Technical Writing & Presentation Skills) (Compulsory)	3
EDU-5502	Foundations of Education (Foundation)	3
EDU-5503	Content Course – I(from selected discipline – I)	3
EDU-5504	Content Course – I(from selected discipline – II)	3
EDU-5505	Curriculum Development (Foundation)	3
EDU-5506	Educational Psychology (Foundation)	3
<b>Total Credit Hours</b>		<b>18</b>
<b>SEMESTER – VI</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs</b>
EDU-5601	Contemporary Issues and Trends in Education (Professional)	3
EDU-5602	Content Course – II (from selected discipline – I)	3
EDU-5603	Content Course – II (from selected discipline – II)	3
EDU-5604	Comparative Education (Professional)	3
EDU-5605	Introduction to Guidance and Counseling (Professional)	3
<b>Total Credit Hours</b>		<b>15</b>



<b>SEMESTER – VII</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs</b>
EDU-6701	Content Course – III(from selected discipline – I)	3
EDU-6702	Content Course – III(from selected discipline – II)	3
EDU-6703	Inclusive Education (Professional)	3
EDU-6704	Educational Management and Leadership	3
EDU-6705	Research Methods in Education (Professional)	3
EDU-6706	Teaching Practice (Short Term)	3
	<b>Total Credit Hours</b>	18
<b>SEMESTER – VIII</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs</b>
EDU-6801	School Management (Professional)	3
EDU-6802	Test Development and Evaluation (Profesional)	3
EDU-6803	Teaching Practice (Long Term)	6
EDU-6804	Research Project (Professional)	3
	<b>Total Credit Hours</b>	15
	<b>Grand Total Credit Hours</b>	135



# DEPARTMENT OF **TOURISM & HOSPITALITY**

## **Degree Programs Offered**

BS Tourism and Hospitality



## **BS Tourism and Hospitality**

The BS (4 Years) in Tourism and Hospitality Management Programme is designed to prepare students to assume responsibilities in the field of management, marketing and planning through a blend of coursework, placements and projects. This Bachelor's Degree Programme will no doubt help students to enhance their interpersonal skills and provide them with a strong background and marketable skills necessary to build a successful career in the Tourism and Hospitality field. The importance of tourism as a contributor to the national economy has led us to develop a Programme that is geared towards addressing and understanding the needs of this sector. We aim at providing high quality education to those wishing to pursue a career in the Tourism & Hospitality industry.

### **Program Mission**

School of Tourism & Hospitality Studies is dedicated to impart quality higher education & training in the field of Tourism &

Hospitality Management, to prepare globally competitive managers & professionals for Tourism & Hospitality industry.

### **Program Educational Objectives (PEOs)**

1. To plan a progressive education training scheme and to impart, through training both practical and theoretical knowledge of every phase of Tourism & Hospitality Management.
2. To set a high standard of knowledge and practice so that the status of the Industry may be raised and catering popularized by offering attractive and progressive careers.
3. To develop a scientific attitude to management techniques and skills.
4. To inculcate habits of courtesy, discipline and hard work in the trainees and pride in the efficient accomplishment of tasks entrusted to them.



5. To impart an understanding of human nature so that the manpower can be directed to the best advantage for the Tourism & Hospitality Management.
6. To stimulate and inspire the trainee managers so that they develop an all round personality and treat learning as a 'growth process'.
7. To impart, by example and education, devotion to Duty, Honesty, Integrity, Dignity of Labor and a willingness to serve others happily and cheerfully.
8. To provide a platform for exchanging ideas and information, to help the students establish habits of seeking knowledge as well as keeping abreast with the latest development in the field by extensive use of the library, attending seminars, discussion groups, etc.
9. To maintain a close liaison between teachers and students so that each student is given a full chance for development and growth.

### **Program Learning Objectives (PLOs)**

1. Students will demonstrate broad knowledge of and proficiency in the core functional and support areas of hospitality business.
2. Students will demonstrate specific competence in a variety of operational aspects within the hospitality industry.
3. Students will demonstrate effective written and oral communication skills.
4. Students will incorporate an understanding of ethical, social, and legal issues in reaching business-related decisions.
5. Students will creatively and critically apply their knowledge and technological skills in identifying and solving problems.
6. Students will have acquired the desire to engage in life-long learning, as demonstrated by ongoing personal and professional development.



A qualification in Tourism and Hospitality is your key to working in various areas across many sectors. You could consider working in positions such as:

1. Restaurant Manager
2. Café Manager
3. Food and Beverage Manager
4. Hotel Manager
5. Conference and Event Manager
6. Human Resource Manager
7. Marketing Manager
8. Resort Manager.

#### **Admission Criterion:**

Higher secondary school certificate/ equivalent securing at least 45% marks are eligible to apply.

#### **Selection Criterion:**

Selection is made on the basis entry test and on the basis of previous qualification..

#### **Scholarships Offered:**

- |                           |                             |
|---------------------------|-----------------------------|
| 1. Need based scholarship | 4. Scottish Scholarship     |
| 2. HBL foundation         | 5. MUST scholarship         |
| 3. Scholarship            | 6. Merit based scholarship. |

#### **Degree Requirements:**

Student with 2.5 CGPA is eligible for degree.

#### **Duration:**

It is a 4 years degree program with 8 semesters and consisting of 129 credit hours: 102 credit hours for core courses; 18 credit hours for specialization courses; 3 credit hours for internship report and a 6 credit hours project.





## Scheme of Study: BS Program

### YEAR ONE - SEMESTER ONE

Course Code	Course Title	Credit Hrs.
BTH-111	Principles Of Management	3
BTH-112	English-I	3
BTH-113	Mathematics	3
BTH-114	Cultural History of Kashmir & Pakistan	3
BTH-115	Introduction to Tourism & Hospitality	3
BTH-116	Pakistan Studies	3
<b>Total Credit Hours</b>		<b>18</b>

### YEAR ONE – SEMESTER-TWO

Course Code	Course Title	Credit Hrs.
BTH-121	English-II	3
BTH-122	Introduction to Computer	3
BTH-123	Introduction to Archaeology	3
BTH-124	Introduction to Psychology	3
BTH-125	Pak AJK Tourism Destination	3
BTH-126	Islamic Studies	3
<b>Total Credit Hours</b>		<b>18</b>



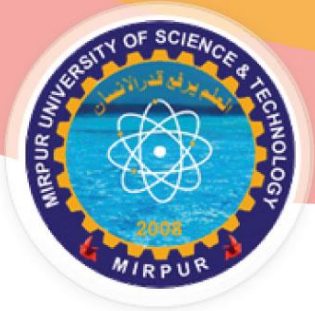
<b>YEAR TWO - SEMESTER THREE</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BTH-231	Fundamentals Of Statistics	3
BTH-232	HRM In Hospitality Industry	3
BTH-233	English-III Technical writing & Presentation skills	3
BTH-234	Sustainable Tourism	3
BTH-235	Cultural Tourism	3
BTH-236	Int. To Sociology	3
<b>Total Credit Hours</b>		<b>18</b>
<b>YEAR TWO - SEMESTER FOUR</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BTH-241	Tourism Marketing	3
BTH-242	Hospitality Management Accounting	3
BTH-243	English-IV	3
BTH-244	Training and development	3
BTH-245	Public Relations	3
<b>Total Credit Hours</b>		<b>15</b>
<b>YEAR THREE - SEMESTER FIVE</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BTH-351	Tourism Management	3
BTH-352	Hospitality Financial Management	3
BTH-353	Cost and inventory management	3
BTH-354	International Relations & Tourism	3
BTH-355	Tourism Marketing	3
<b>Total Credit Hours</b>		<b>15</b>



<b>YEAR THREE - SEMESTER SIX</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BTH-361	Principles of Accounting	3
BTH-362	Religious Tourism	3
BTH-363	Customer Relationship Management	3
BTH-364	Leadership in hospitality industry	3
BTH-365	Advertising & Promotion	3
<b>Total Credit Hours</b>		<b>15</b>
<b>YEAR FOUR - SEMESTER SEVEN</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BTH-471	Tourism Research Methods	3
BTH-472	Seminars in tourism and hospitality	3
BTH-473	Change management	3
BTH-474	Entrepreneurship	3
BTH-475	Internship	3
<b>Total Credit Hours</b>		<b>15</b>
<b>YEAR FOUR - SEMESTER EIGHT</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hrs.</b>
BTH-481	Digital marketing	3
BTH-482	Case studies in tourism	3
BTH-483	Advance Research Methods	3
BTH-484	Hospitality Project Design	6
<b>Total Credit Hours</b>		<b>15</b>
<b>Grand Total Credit Hours</b>		<b>129</b>



**DIRECTORATES**



### **Registrar**

Engr. Muhammad Waris

Contact: 05827-961037

E-mail: registrar@must.edu.pk

The Registrar is a full-time administrative head of the secretariat of the University and is responsible for the provision of secretariat support to the authorities of the University. Registrar is the custodian of the common seal and the academic records of the University. The custodian maintains a register of the registered graduates in the prescribed manner and supervises the process of election, appointment or nomination of members to the various authorities and other bodies in the prescribed manner.



### **Treasurer**

Dr. Amir Saghir

Contact: 05827-961035

E-mail: [treasurer@must.edu.pk](mailto:treasurer@must.edu.pk)

The Treasurer is the chief financial officer of the University and monitors the assets, liabilities, receipts and funds, investments of the university. The Treasurer office prepare the annual and revised budget estimate of the university and present them to the syndicate or a committee thereof for approval and incorporation in the budget to be presented to the Senate. The Office ensure that the funds of the university are expended the purpose of which they are provided, The treasure office is responsible for the annual audit and submit it to the Senate within six months of the close of the financial years.



### **Controller of Examinations**

Dr. Arshad Farooq Butt

Phone: 05827-961038

E-mail: [controller@must.edu.pk](mailto:controller@must.edu.pk)

Controller of Examinations (CoE) is one of the most important Departments at Mirpur University of Science and Technology (MUST), Mirpur AJK. Role of the CoE Department is of custodian who ensures that any "Degree or transcript" which goes out of this institute is genuine and is being issued to a person who fulfills the entire legal requirements for this purpose.

The Controller of Examinations at MUST is concerned with the examination of the University as well as its affiliated College's / Institutes. The Controller of Examinations Office deals with all matters related to examinations, results, issuing interim

transcripts, detail marks certificate's (DMC's), degrees and verification of documents.

#### **Objectives:**

- Preparation and managing of examination schedules along with assigning of invigilators.
- Administering over all examinations.
- Reviewing queries regarding the results, missed exams or academic status of students.
- Managing convocation requirements through timely calls returns of graduation forms, printing of transcripts and degrees.
- Ensuring genuineness of any degree, transcript or medal being awarded.
- Ensuring adherence and compliance of the rules and policies during all examination mechanisms, as recommended by HEC.



## Director Students' Affairs



### **Dr. Asghar Ali Chaudhary**

Tel: +92-5827-961045

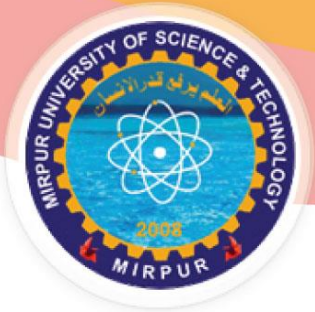
Fax: +92-5827-961045

Email: [dsa@must.edu.pk](mailto:dsa@must.edu.pk)

The directorate students 'affairs serve as a liaison between students, faculty and administration. The primary function of the Directorate is to organize extra-curricular activities for students and to nurture their intellectual, literary and artistic capabilities that usually remain untapped in a typical classroom environment. The Directorate also works to promote respect amongst students for dignified and disciplined

Behaviour so that they become responsible and respectable members of the honoured community of scientists, engineers, architects, and planners. The student's affairs office provides assistance to the students in all possible way. It leads, directs and administers overall functions of student counselling, hostel residence, student societies and discipline. The important function of studentaffairs office is to enhance the quality of student life both in and outside the campus





## Facilities

### Internet:

MUST realizes the importance of providing around the clock internet access to students and faculty members in order to facilitates them in their academic and research pursuits Wi-Fi Internet connection is available to all students.

### Library:

MUST is blessed with a state-of-the-art library with a rich collection of books. It provides excellent services and facilities to its readers. Besides departmental libraries, MUST have a Central Library named Ali Ahmed Shah housed in the Electrical Engineering Block with adequate learning resources in all disciplines.





### **Transport:**

A large fleet of vehicles are available to provide morning/evening commuting facilities to the main point in the Mirpur City. Transport facility is also available for students studying at Bhimber Campus. Besides pick and drop facility, transport is also provided to students for their study and recreational trips on recommendations of respective Deans of the Faculties.



### **Cafeteria and Shopping Complex:**

Aesthetically designed cafeteria and shopping complex have been constructed in the central wings of the campus.

Shopping complex will offer the following services:

- Stationery Shop
- Book Shop
- Photoshop
- Cellular Shop
- Washer ma

Medical/First Aid Facilities:

Dispensary for students to provide them first aid is available in the main campus. In addition to Dispensary a fully equipped ambulance to handle any emergency round the clock is also available for evacuation to the nearest hospital.



### **Prayer Facility:**

Main Mosque is under construction and almost near to completion hopefully will be functional in the start of fall semester 2020 in the main campus, currently a Hall in the Electrical Engineering Department is dedicated for prayers.

### **Counselling and Career Advisory:**

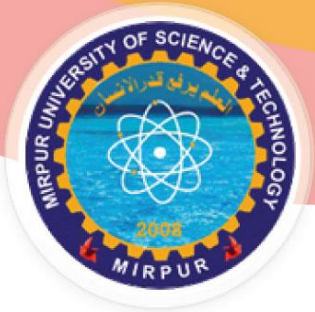
Counselling and career advisory provides primary mental health services to all MUST students, and Faculties. MUST is the only university in the AJ&K offering this counselling services to discuss their personal and academic concerns with competent counsellors, without any hesitations.

### **Scholarships:**

MUST is providing scholarship to deserving students on the basis of their financial and educational background. MUST is committed to increase the number of scholarships for Students.

Students selected for admission to various Programs can apply for departmental merit scholarships (paid to three merit holders). In the final year, scholarship is awarded on merits. Some scholarships from donor agencies as mentioned below are also available to students:

- Need Base Scholarship
- Ehsaas Undergraduate Scholarship Program
- National Endowment Scholarship for Talent (NEST)
- Institution of Engineers Pakistan-Saudi Arabian Center (IEP-SAC)
- Pakistan Scottish Scholarship Scheme for Young Women
- AJK-Pakistan Education Endowment Fund Scholarship
- Dr. Atta-ur-Rehman Science Scholarships
- Pakistan Engineering Council
- Pakistan Engineering Congress
- Scholarship offered by Higher Education
- The Ministry of Kashmir Affairs provides scholarships to the deserving students.
- Fauji Foundation
- Pakistan Bait-ul-Mal



- Ashai Trust
- Sara Ahmad JooSaraf
- Qarz-e-Hasna from all Banks
- Waqf-E-Kuli Khan
- Syed Nazir Hussain Shah Education Trust.
- Azad Jammu & Kashmir Government is very generous in sanctioning Zakat scholarships. Majority of students is getting full benefit of this facility.

#### **Guardian Council:**

MUST is an organization which is not only teaching and tutoring students but also reshaping their minds to become sophisticated and responsible representatives of our society. We believe that work and integrity are not to be compromised. We ourselves determine our level of excellence. A guardian council in each department has been established to have complete information about following attributes of the students:

- Economic Situation
- Health Factor
- Psychological Problems
- Studies Report
- Interaction with other students
- Participation in Class
- Habits
- Life Style



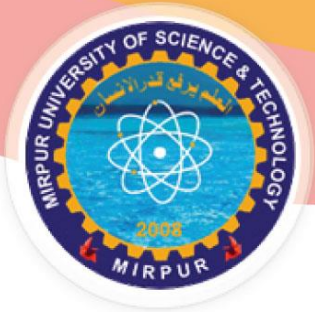


### **Students Societies:**

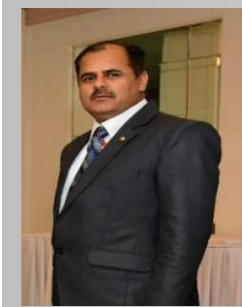
Students are offered ample opportunities to acquire and polish various social and professional skills. For this purpose, vibrant societies exist at MUST.

Under the supervision of Director Students' Affairs such as:

- Society of Computer Science & Information Technology (SOCIT)
- American Society of Mechanical Engineering MUST (ASME MUST)
- Society of Civil Engineering MUST (SCEM)
- Society of Electrical Technology (SET)
- MUST ORION
- MUST Computing Society (MCS)
- Society of Power Engineering (SOPE)
- Society of Sciences (SOS)
- ASHREE MUST
- MUST Arts & Décor Society (MADS)
- MUST Debating Society
- DHANAK Magazine Society MUST
- MUST Literary Society (MLS)
- Society for Women Engineers (SWE)
- AAINA Arts and Dramatic Society
- Youth Parliament MUST Chapter
- Irfan Shaheed Blood Donation Society
- Seerat Society MUST
- State Youth Assembly MUST Chapter
- ARFA KAREEM Computing Society
- Society of LAW (SOL)
- Student Development Circle (SDC)
- Girls Scholar Society Environmental Protection Society
- Student Welfare Society
- Disaster and Crisis Management Society
- Sports Society



## **ALI AHMED SHAH CENTRAL LIBRARY**



### **CHIEF LIBRARIAN**

Muhammad Yaseen Khan

Phone: +92 5827961053

E-mail: [chief librarian@must.edu.pk](mailto:chief librarian@must.edu.pk)

I welcome you on behalf of the Ali Ahmed Shah Central Library, the hub of research, a place for lifelong learning, discovery and innovation. Offering access to the multitude of resources, the Ahmed Shah Central Library aspires to provide high quality services to the educational community of MUST Mirpur. The top priorities of central library is to development of learning spaces and extension of physical facilities, progression in services, and development of collections vital for learning and research. The real aim is to create Central Library services that are convenient and efficient for students and academic staff. The bottom line is to enrich students learning experience and enable research and scholarship in both formats(traditional and electronic).The Library staff is competent and always be there to provide timely response to your academic and research information needs. We want to help you meet your research and learning goals, and trust that the resources, facilities and services we provide will prove helpful to you. I urge you to visit and use library and hope that you will consider it your educational partner and source of quality learning during your time at MUST University



## **Introduction**

MUST has a Central Library and 16 departmental libraries comprising of about 180,000 collection of books. The library has a rich and diverse collection of materials, especially in terms of the breadth and depth of coverage. The collection is ideally suited to encourage and support both scholarly pursuits and practical research activities. The Ali Ahmed Shah Library has a variety of material including Computer Science, Engineering, Mathematics, Management Sciences, and Earth Science, Social Sciences, General books, Fictions, Pakistan Study and Reference books. Currently located in the basement of Electrical Department, the library has a print collection of more than 22,000 volumes. About 10 serial publications and 6 newspapers are on subscription list. The Ali Ahmed Shah Central Library also offers the Book Bank services to the users

and having the collection of 3400 books. Campus wide access to more than 22,000 electronic journals and more than 40,000 e-books is available through the HECs National Digital Library Program. The library has also been equipped with all the latest Information Communication Technologies (ICTs) such as computers, multimedia, digital cameras, photocopier and high speed internet connectivity to facilitate the faculty and students.





## **SERVICES:**

Services include two types of services; technical services and reader services in almost every type of library.

### **Technical Services**

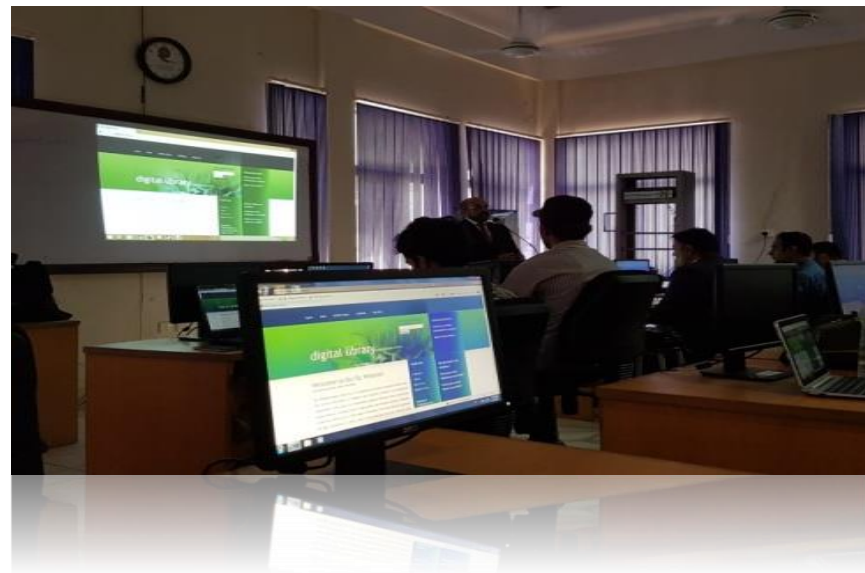
Technical services are very important in any type of the library. These services are helpful in searching and retrieving the book from the library. Technical service includes:

#### **Acquisition**

Acquisition department of library works for acquiring the material by students, faculty and staff of MUST. It deals with all types of content requested for library to meet the academic and research needs of MUST students, faculty and staff.

#### **Accessioning and Classification**

The Ali Ahmed Shah Central Library executes the technical services including acquisition of material, accessioning of materials, adopted the DDC 23rd edition, allotment of subject heading via Sears List of Subject Headings and entering books in CMS.









## Advanced Studies & Research Board (ASRB) Responsibilities:



### Director

Dr. Javeed Akhtar

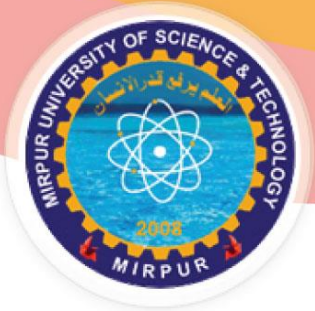
Tel: +92-5827-961116

Email: [director.asrb@must.edu.pk](mailto:director.asrb@must.edu.pk)

Office of the Advanced Studies & Research Board (ASRB) is performing following Functions and duties at the Mirpur University of Science & Technology (MUST):

- Monitor academic as well as research progress of the graduate students.
- Maintain and update files of graduate's students.

- Maintain and update academic regulations for graduate students.
- Scrutinize the synopses of thesis, course work programs, supervisor for M.Phil.
- scholars and supervisory committees of PhD scholars and manage their approval through the board.
- Scrutinize the thesis of postgraduate students to ensure their proper format as laid down by the university.
- Streamline the latest development within post graduate degree programs of the university.
- Keep liaison with other universities, research organizations and the HEC for update.
- Prepare agenda and conduct meetings of AS&RB.
- Execute the policies and decisions of AS&RB.
- Scrutinize all incentive cases for Publication and Thesis Supervision of faculty members



## NETWORK AND TELECOMMUNICATION CENTER (NTC)



### Director

Imtiaz Ahmad Bhat

Tel: +92-5827-960096

Email: [director.ntc@must.edu.pk](mailto:director.ntc@must.edu.pk)

Realizing the importance of advancement in the technology, NTC (Network and Telecommunication Centre) as a separate department, was established in June 2010. The establishment of NTC department is aimed at enhancing the facility of network and telecommunication for the University. NTC at MUST Mirpur, is a team of highly dedicated and professional members, responsible for providing IT, computing, corporate trainings and consultancy services not only to the MUST campus but also to public and private organizations.

### Mission Statement:

To provide the best, innovative, reliable and integrated IT solutions/support. We are committed to support/meet user requirements at MUST, Mirpur by delivering ethical, reliable, and high-quality solutions of strategic value.

### Areas of Activity/Services:

In the era of technology, network and telecommunication are providing key role to run business of any organization smoothly. Network and telecommunication not only enable you



to connect and communicate locally at your office but also across the globe.

**Facilities and Services, we provide are:**

- Network design, installation, performance monitoring, troubleshooting, and maintenance
- Telecom Exchange installation, troubleshooting, and maintenance
- System installation, activation, troubleshooting, and maintenance
- Development, design, and maintenance of university Website
- In-house software development
- Provision of Internet Services

- Trainings and Technical support for Online Learning Management System for the faculty of MUST, Mirpur as well as for faculty of affiliated colleges
- Fiber connectivity of Jerri-Kas campus with data center at city campus
- Technical support for event management for MUST, Mirpur
- In house staff and student cards printing system

**HEC Special Projects with NTC Coordination  
Pakistan Educational Research Network (PERN)**

PERN - Pakistan Education and Research Network is a national research and education network of Pakistan which connects premier educational and research institutions of the country. PERN focuses on collaborative research, knowledge sharing,



resource sharing, and distance learning by connecting people through the use of Intranet and Internet resources. Current bandwidth of the PERN has been increased 60 Mbps to 160 Mbps that fulfills the requirement for all the departments. This network is also used by VEPP (Virtual Education Project of Pakistan) to offer courses taught by renowned professors around the globe.

### **Digital Library Access**

HEC National Digital Library (DL) is a program to provide researchers within public and private universities in Pakistan and non-profit research and development organizations with access to international scholarly literature based on electronic (online) delivery, providing access to high quality, peer-reviewed journals, databases, articles and e-Books across a wide range of disciplines. The e-books support program will

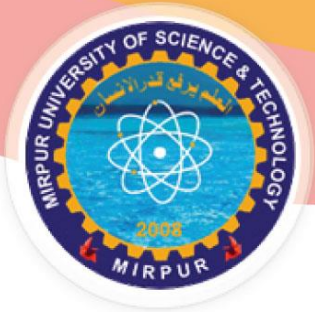
allow researchers to access most of the important text and reference books electronically in a variety of subject areas. Around 75,000 number of electronic contents has been made available through the Digital Library Program. To promote research-oriented environment at MUST, NTC team is coordinating chief librarian to provide a seamless access of digital libraries resources to all faculty members and students.

### **CISCO Academy/Short Courses**

MUST is a Registered CISCO Academy for CCNA, CCNA Security and CCNP. Certified teachers with highly sophisticated lab are teaching and training latest curriculum provided by cisco with practical work on network devices.

### **Microsoft Testing Centre/Academy**

MUST is a Registered Microsoft Academy and Certified Testing Center for MOS (Microsoft office Specialist). A considerable



number of MOS (Microsoft Office Specialist) tests have been conducted at Must, Mirpur.

### **HEC Smart Universities Project.**

NTC team has deployed HEC Smart University Wifi and Surveillance Solution MUST, Mirpur with the following features:

- 24x7 wireless connectivity
- User based internet access (Active Directory Service)

### **Strengthening of Existing Facilities/ Milestones achieved**

- PERN bandwidth enhanced from 160 Mbps to 365 Mbps
- 100% campus wide Wireless (Wi-fi) internet access
- Rukus wifi internet solution installed at Bhimber campus
- Internet connectivity in girl hostel at Bhimber campus
- Academic procedures have been automated by implementing CMS

- Online admission system
- In house staff and student cards printing system
- Developed and deployed Alumni website
- Helpdesk facility of complaint management system/ticketing system
- HR and payroll automation for MUST

### **Public Private Projects and Civic engagements**

- Driving License printing turnkey Solution for Mirpur, Bhimber, and Kotli
- Developed and deployed police driving license verification website
- Technical support/consultancy to Board of Intermediate and Secondary Education (BISE) Mirpur AJ&K NTC.
- Technical support and ERP (Enterprise resource planning) development and deployment for KORT



- HealthCare4All (NGO) co-located software/application
- Technical support to President Secretariat, Muzaffarabad (AK)
- Card printing service to Mirpur Chamber of Commerce & Industries
- Service card printing for Department of Inland Revenue (Excise & Taxation Department) AJK
- Website management and hosting for Nomination Board (Higher Education Muzaffarabad)





## Offices of Research, Innovation & Commercialization (ORIC)



### Director

Asif Javed

E-mail: [asif@must.edu.pk](mailto:asif@must.edu.pk)

Tel: +92-5827-961114

### Introduction

HEC aims to develop and sustain a dynamic and internationally competitive research sector in Pakistan that makes a major contribution to economic prosperity, national well-being and the expansion of knowledge. Promotion of Research is one of the core strategic aims of HEC. Through the initiatives launched by HEC the quality & research output emanating from the universities and institutions in country have shown tremendous improvements. In pursuit of this end HEC has started working

to organize the research activities under one umbrella by establishing Office of Research, Innovation and Commercialization (ORIC). In pursuance of the direction of HEC the university took the policy decision to establish this important office by issuing a notification No. Registrar/6328-68/2011 dated: 01-06-2011.

The minimum criteria for the establishment of ORIC have been completed in April 2013 with the aim of linking university





research directly with educational, social and economic priorities of MUST and its broader community.

### **Objectives/Mission**

The mission of ORIC is to develop, expand, change and manage the university's research programs and to link research activities directly to the educational, social and economic process of the university and its broader community. The office is also responsible for assuring that the quality of research reflect the highest international standards and advances the stature of the university, among the world's best research institutions.

In pursuit of this mission, the Office of Research has the responsibility of guaranteeing that all research programs and policies reflect the core values of academic freedom, professional integrity and ethical conduct and full compliance

with all policies, legal requirements and operational standards of the university.

### **Facilities**

Offices of Research, Innovation & Commercialization (ORIC) is divided into the following categories to facilitate MUST.

### **Research Operations**

ORIC is promoting development of public-private partnerships:-

- Identify research grant opportunities for faculty to apply.
- Facilitate faculty to apply for research grants.
- Research administration, budgeting and auditing.
- Accounting and human resources management.
- Maintenance of facilities and equipment.
- Implementation of research contracts and human resources.



- Legal, administrative and financial management support of research grants

### **Research Development**

ORIC is developing programs and activities that will:-

- Increase funding for research from all public and private sources.
- University internal funding for small projects.
- Establish and maintain excellent relationships with donors and stakeholders.
- Oversee proposal development and submission.
- Support commercialization, licensing, etc. of university research products.

### **University – Industrial Linkages**

ORIC is developing links with several industries of AJK & Pakistan

- To support the university research initiatives.
- Link the university's research community with the needs and priorities of the corporate sector.
- Develop opportunities for applied research and explore opportunities for technology transfer.
- Commercialization of university research.
- To follow-up of commercialization process of research products.

Contact Office of Research, Innovation and Commercialization (ORIC) for assistance and guidance on the following research related activities;

- Funding Opportunities
- Presentation of Research Work
- Organizing a Seminar, Workshop and Seminar etc.
- Patenting the Research Work



- Industrial Linkages, Commercialization of Research.

#### **Potential Donors (National and International):**

- Higher Education Commission ([www.hec.gov.pk](http://www.hec.gov.pk))
- Pakistan Science Foundation ([www.psf.gov.pk](http://www.psf.gov.pk))
- National ICT R&D Fund (<http://www.ictrdf.org.pk>)
- Pak-US Joint Academic & Research Program (<http://publisher.hec.gov.pk/www.hec.gov.pk/pakus-rd>)
- TWAS-COMSTech Joint Research Grants (<http://twas.ictp.it/prog/grants/>)
- Human Frontier Science Program ([www.hfsp.org](http://www.hfsp.org))
- International Foundation for Science (<http://www.ifs.se>)

- Australian Agency for International Development (AusAID) (<http://www.ausaid.gov.au>)
- East WEST center ([www.eastwestcenter.org](http://www.eastwestcenter.org))
- European Research Council (ERC) (<http://erc.europa.eu>)
- EU Funding and Grants ([http://ec.europa.eu/index\\_en.htm](http://ec.europa.eu/index_en.htm))
- International Development Research Center (<http://www.idrc.ca>)
- Japan International Cooperation Agency (JICA) (<http://www.jica.go.jp>)
- Sigma Xi – The Scientific Research Society



## Quality Enhancement Cell



### Director

Dr. Imtiaz Ahmad

Tel: +92-5827-961020

Fax: +92-5827-961020

Email: [director.qec@must.edu.pk](mailto:director.qec@must.edu.pk)

### Impact of Quality Assurance in the University

The Quality is the bench-mark through which an institution can guarantee with confidence and certainty, that the standards of its educational provision are being maintained and enhanced. The Quality Enhancement Cell (QEC) is working in the university since the establishment of the university. The Quality of the degree programs is ascertained through the set criteria and measurable standards. Mirpur University of Science and Technology (MUST), Mirpur is moving ahead on the path of

tremendous progress in higher learning sector using human and financial resources. In order to facilitate the access and enhance the quality programs, self-assessment system is implemented in the University. The process is directed at rising elevating the quality of education compatible to the international standards. The Mirpur University of Science and Technology (MUST), Mirpur is a student focused University with quality consciousness. All the stake-holders including students,



teachers and staff are committed to achieve academic excellence.

Mirpur University of Science and Technology (MUST) is committed to implement e-learning programs in accordance to the provision provided by HEC Covide-19 guidance with pledge of quality assurance. QEC is dedicated to provide all education seekers an equal opportunity to access quality education from tertiary to higher education level through online learning. QEC is focused to develop a standard mechanism of online learning, for providing affordable and flexible educational opportunities that may open doors for all learners to broaden their horizon.

### **QEC Vision**

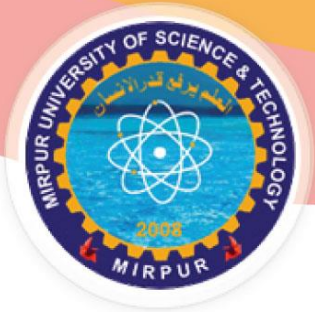
"Quality Education for Societal and National Development through Innovation, Facilitation and Accountability"

### **QEC Mission**

"To Focus on Modern Trends of Globalization in Teaching, Learning and Research for Sustainable Academic Development through Auto-corrected Procedure for Quality Improvement in the MUST"

Mirpur University of Science and Technology (MUST) Retains W-Category in the HEC's University Quality Guide 2018

Mirpur University of Science and Technology (MUST), Mirpur retains W-Category (85- 100%) by securing 88.40% in the Pakistan's most widely read university ranking. This league table is made up of seven indicators including Quality Assurance, Teaching and Research, Student-staff ratios, SAR report completion, Civic Engagements, Awareness Seminars/ Workshops and Membership of International Bodies around the globe. The result is the latest HEC-QAA league table success



for MUST. It is worthwhile to mention here that this is the fourth consecutive year MUST has featured in the W-Category in this guide, which ranks Universities across Pakistan.

### **Membership of Networks of Quality Assurance**

QEC-MUST is actively participating its role to enhance the quality of education at higher level. In this regard, QEC has membership of national and international networks. Currently, Director QEC is an Executive member of Pakistan's largest network of quality assurance in higher education named PNQAHE.

#### **Membership of Network**

Name of Agency	Location	Membership Status
AQPN	China	Under process
INQAAHE	Netherland Hague	Active
AQAIIW	Malaysia	Under process
Tallories Network	USA	Active
PNQAHE	Pakistan	Active



### Accreditation of Programs from Relevant Councils

Name of Degree Programs	Faculty Name	Accreditation Council/ Body
B.Sc. Electrical Engineering	Engineering	Pakistan Engineering Council (PEC)
B.Sc. Civil Engineering	Engineering	Pakistan Engineering Council (PEC)
B.Sc. Mechanical Engineering	Engineering	Pakistan Engineering Council (PEC)
B.Sc. Software Engineering	Engineering	Pakistan Engineering Council (PEC)
B.Sc. Computer Systems Engineering	Engineering	Pakistan Engineering Council (PEC)
B.Sc. Electrical Engineering	Engineering	Pakistan Engineering Council (PEC)
Bachelor/ Master of Business Administration	Arts	National Business Education Accreditation Council (NBEAC)
Law	Arts	Pakistan Bar Council (PBC Azad Kashmir Bar Council)
Computer Science & Information Technology	Science	National Computing Education Accreditation Council (NCEAC)
AKSON College of Pharmacy Education	Health & Medical Sciences	Pakistan Pharmacy Council (PCP)
Computer Science & Information Technology	Arts	National Accreditation Council for Teaching Education



## STUDENTS ASSISTANCE CENTRE (SAC)



### Director

Dr. Nasim Akhter

Ph.D (Economics)

Phone: (92) 5827-961080

### Establishment

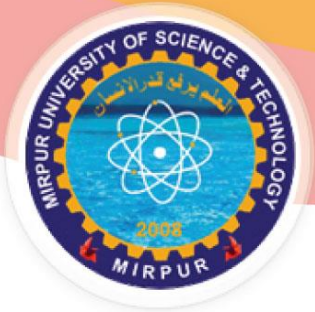
Student Financial Aid Office (SFAO) was established in compliance with Higher Education Commissions (HEC) directives in February, 2013 and the Senate of the University has approved its establishment in its 4th meeting vide notification no. F.2/senate (4-M) i-47/6346-86/2013 dated: 30-07-2013. Due to statutory requirements of the University, the title of Student Financial Aid Office (SFAO) was renamed into

Student Assistance Centre (SAC) vide order no. R/5208-58/18 dated: 12-03-2018.

### Mission

The SAC is primarily established to facilitate and uplift the underprivileged students who intend to achieve academic excellence but lack of financial resources is one of the greatest roadblocks to follow their dreams. SAC coordinates grants of scholarships received from various national / foreign scholarship awarding agencies for MUST students enrolled in





various disciplines and study programs. SAC provides guidance through advisory and counselling services to the students who are in need of scholarships for pursuance of their studies and research programs.

### **Key Roles**

- Execute / implement and operate the financial assistance Scheme(s)/ programs of the Government / HEC / MUST and other donors.
- Establish regular communication flow between the MUST and the students/parents. Co-ordinate with all stake holders regarding the financial assistance /aid programs.
- Establish essential manual and automated processes to award financial assistance in a timely manner to Award financial assistance/Scholarships to qualified students, according to institutional and Govt. requirements.

- Create awareness; build relationships with the society for humanitarian support to higher education. Provide individual student/parent assistance in completing necessary applications and managing personal resources as they are needed to augment financial assistance in covering educational expenses.

### **Scholarship Opportunities**

Following Scholarships are being offered as per donors and MUST policies.

#### **1. Ehsaas Undergraduate Scholarship Program**

Ehsaas undergraduate scholarship program has been launched by Government of Pakistan in 2019 to support bright but financially challenged students all over Pakistan. There are 296 scholarships in total have been allocated for MUST students for



financial year 2019-20. For detail follow the link;  
[www.ehsaas.hec.gov.pk](http://www.ehsaas.hec.gov.pk)

### **2. MUST Merit-based Scholarships**

The amount of this scholarship is Rs.6000/- per semester. More than 300- students get benefit on annual basis from this program since 2013. This scholarship aims to support 5% students of each semester on the basis of their academic performance.

### **3. MUST Need-Based Scholarships**

50-scholarships are being awarded since the academic year 2014 to the underprivileged first-year enrolled students of subsidized (Merit basis) category in undergraduate program. The scholarship is awarded according to the principles and procedures laid down by the HEC for Need Based Scholarship program. The component of the scholarship is fixed @ Rs. 9000/- per semester or as determined by the University subject

to the availability of funds. This scholarship supports for one academic year only. Scholarships forms are available at university website; [www.must.edu.pk](http://www.must.edu.pk)

### **4. Students-Guardians Insurance Scheme:**

The University waives-off tuition fee and grants Rs.5000/- per month as stipend. This scholarship supports students whose parent or guardian died during the educational period of the student enrolled in The University . The form is available at University website; [www.must.edu.pk](http://www.must.edu.pk)

### **5. HEC Need Based Scholarships:**

The HEC Need-Based Scholarship helps the financially disadvantaged undergraduate students on subsidized (Merit basis) category for full duration of their undergrad study program. The components of scholarship are (i) refund of tuition fee and (ii) Rs. 6000/- per month as stipend. The detail of this scholarship is available at HEC website link:



<https://www.hec.gov.pk/english/scholarshipsgrants/Pages/NationalScholarships.aspx>. Scholarship form is available at University website; [www.must.edu.pk](http://www.must.edu.pk)

### **6. Pakistan Scottish Scholarship Scheme for Young Women:**

There are to be 6-8 scholarships awarded annually under this scheme. The aim of this scholarship program is to increase the number of women who want to pursue postgraduate level degrees but lagging behind due to financially disadvantaged backgrounds. The detail is available at website <https://www.britishcouncil.pk/programmes/education/scholarships>

### **7. HBL Foundation Scholarship Scheme:**

95-scholarships are being awarded since the academic year 2015 to financially challenged and low income students under the rules & regulations notified by the MUST. The component of scholarship is stipend @ Rs. 8000-12000 per semester. The

application form and detail of scholarship is available at University website [www.must.edu.pk](http://www.must.edu.pk).

### **8. Laraib Energy Ltd. Scholarship**

14-Scholarships are being awarded since the academic year 2018 to the low income background students from various disciplines of Faculty of Engineering. The scholarship awards Rs. 10714/-per semester as a stipend. The application form and detail of scholarship is available at University website [www.must.edu.pk/wpcontent/uploads/2015/11/Application-form-Laraib-Energy-scholarship-pdf](http://www.must.edu.pk/wpcontent/uploads/2015/11/Application-form-Laraib-Energy-scholarship-pdf)

### **9. Institution of Engineers Pakistan-Saudi Arabian Centre (IEP-SAC)**

08- Scholarships are being awarded annually since the academic year 2018 to the financially challenged and low income background students of Faculty of Engineering. The component of scholarship is stipend @ Rs. 12,500/- per semester. The application form and detail of scholarship is



available at University website; [www.must.edu.pk/wp-content/uploads/2015/11/IEP-SAC.pdf](http://www.must.edu.pk/wp-content/uploads/2015/11/IEP-SAC.pdf)

### **10. Sara Ahmed JooSaraf Trust**

12- Scholarships are being awarded since the academic year 2018 to the financially challenged and low income students of various disciplines of Faculty of Natural & Applied Sciences. This scholarship awards Rs. 18,000/- per semester as a stipend. The application form and detail of scholarship is available at University website

[www.must.edu.pk/wp-content/uploads/2015/11/SAJS-application-form.pdf](http://www.must.edu.pk/wp-content/uploads/2015/11/SAJS-application-form.pdf).

### **11. National Endowment Scholarships for Talent (NEST)**

This scholarship waives off the tuition fee of two semesters to support the financially underprivileged students. 17- Scholarships are being awarded since the academic year 2018. The application form and detail of scholarship is available at

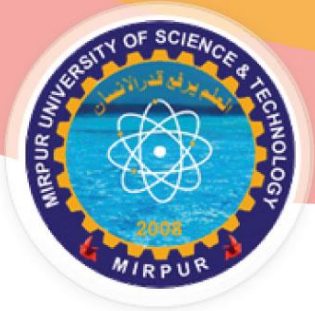
[www.scholarships.nest.org.pk/wp-content/uploads/2020/01/ArtsAndCulture-scholarship-Application-Form-NEST.pdf](http://www.scholarships.nest.org.pk/wp-content/uploads/2020/01/ArtsAndCulture-scholarship-Application-Form-NEST.pdf)

### **12. Punjab Educational Endowment Fund**

PEEF has allocated 65 scholarships for MUST. This scholarship is for the students of master degree programs in various disciplines of Faculty of Natural & Applied sciences and Faculty of Social sciences and Humanities. Follow the link for further details [www.peef.org.pk/Scholarships\\_Main.html](http://www.peef.org.pk/Scholarships_Main.html)

### **13. Prime Minister's Electric Wheel Chair Scheme for University Students**

Higher Education Commission (HEC) has launched 'Prime Minister's Electric Wheelchair Scheme for public sector Universities Students' who have physical disability of movement and intend to continue their higher education. The application form and detail of scholarship is available at: <https://www.hec.gov.pk/english/services/students/wheelchair/pages/How-to-Apply.aspx>



#### **14. Prime Minister's Fee Reimbursement scheme**

Prime Minister's Fee Reimbursement scheme is active since 2013. A total of Rs. 209.005 million has been disbursed among Masters, MS/M.Phil and Ph.D students. For further details [www.hec.gov.pk/English/scholarshipsgrants/pages/nationalscholarships.aspx](http://www.hec.gov.pk/English/scholarshipsgrants/pages/nationalscholarships.aspx)

#### **15. Numbers of other regular stipends/scholarships**

The following organization / trusts and NGO's are directly offering different amount of stipends / scholarships to the University students regularly. The students are advised to visit the websites/ offices of such organizations and apply directly through concerned HOD's for scholarship. SAC provides

information and guidance to students and also verifies that no student is getting benefits from more than one source.

- i. Pakistan Bait-ul-Mall
- ii. Fouji Foundation
- iii. Teachers Foundation grant for the children of teachers only
- iv. Benevolent Fund grant for the children of Government and University employees.
- v. Zakat Fund grant of AJK- Pakistan Government.
- vi. AJ&K Council Scholarship Scheme.
- vii. AJ&K State Talent Scholarship Scheme
- viii. AJ&K Educational Endowment Fond Scheme
- ix. GilgitBaltistan council Scholarship Scheme
- x. Institute of Electrical Engineers, Pakistan scholarship
- xi. Pakistan Engineering Council, Islamabad



## Provost Hostels



Engr. Dr. Muhammad Ilyas Menhas  
Tel & Fax: 05827-961116  
Email: provost@must.edu.pk

MUST, provide accommodation in well-furnished hostels having all important facilities required for students. Accommodation in hostels is a privilege and cannot be claimed as a matter of right. Residential accommodation is an equal and merit based opportunity. Proper boarding, lodging and mess facilities are available to the residents. All University Hostels are under the direct supervision of the Provost who is assisted by Superintendent and Deputy Superintendents of each hostel. The Provost serves as overall in-charge of all hostels and sets policy guidelines for the hostel administration.

1. Iqbal Hostel (City Campus) 201
2. Abu-Bakar Hostel (City Campus) 171
3. Quaid-e-Azam Hostel (City Campus) 72
4. Maryam Girls Hostel (Home Economics Campus) 150
5. Fatima Girls Hostel (Bhimber Campus) 60

### University Hostels

A new building (Boys Hostel) of capacity approximately 180 seats will be handed over to the Administration in near future.





### **Allotment Procedure:**

- Students desirous of hostel accommodation are required to apply on the prescribed hostel allotment form on or before the last date announced by hostel administration.
- Students shall submit duly filled forms, along with three attested passport size photographs, fee challan form and DMC. No allotment form will be accepted after due date.
- The Provost office will display a merit list after necessary scrutiny of allotment forms.

### **General Rules:**

- All complaints regarding any student and any queries or problems relating to hostel shall be brought forth the Hostel Deputy Superintendent. Students must never take matters into their own hands.
- The residents of the hostels are required to abide by the rules and regulations lay down on the allotment form and notified from time to time by the hostel and university administration. Violation of hostel rules shall render a resident liable for imposition of fine and /or expulsion from the hostel.

- Every student shall be issued a boarder card, after due verification. The students must keep these cards at all times.
- Sports
- The indoor sports facility e.g. Table tennis, Badminton and Basketball etc. are available for students.

### **Hostel Mess**

- Each hostel resident will automatically be considered as a member of the hostel mess.
- The hostel mess will be monitored by a Mess Committee comprising of Resident students of the hostel appointed by the Superintendent with the approval of the Provost. The hostel mess shall remain open during the time prescribed for each meal.
- All the members of the mess shall take their meals in the Dinning Hall of the hostel. No meals shall be served in their rooms.
- Smoking is strictly prohibited in the hostel mess and premises.



## SPORTS



### **Director**

Engr. Muhammad Shabir Mirza

Tel: +92-5827-961057

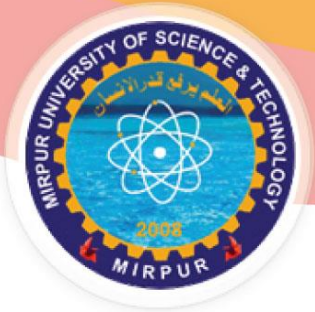
Director Sports who is assisted by a Director Physical Education (Female) is responsible for providing all the sports facilities to students. The Directorate is strongly committed to providing the finest environment possible for performing sports activities and providing all students with opportunity to participate in the sports of their interest. University life is not all work and no play. Sports activities help the students to make new friends. Competitive Sports at the University enjoy a successful profile. The dynamic sports Programs have been prepared with a view to providing the skills and knowledge needed for effective participation in sports activities. The Directorate offers a wide range of competitive, individual and team sports to suit all tastes and interests. The

Directorate provides the facilities to take part in different sports activities in the evening on daily basis. The Sports activities carried out throughout the academic year include:

Athletics, Badminton, Football, Hand Ball, Cricket, Volley Ball, Hockey, Basketball, Table Tennis, Rovering, Tekking, Mountaineering, Hike and Kabaddi. The Department also organizes/manages the participation of the University teams in All-Pakistan inter-University

sports championships in different provinces of Pakistan as well as Azad Kashmir. The students are encouraged to participate in sports of their liking throughout the year. During the academic year sports week has been arranged.







## **Admission Policy 2020**

The Admission Policy is hereby disseminated with effect from Semester Fall-2020. This policy shall be read in coincidence with the Academic Rules/Regulations of the university (university calendar Vol-II). In matters where this policy is silent, relevant rules, regulations mentioned in calendar Vol-II shall apply. The admission requirements are revised by the HEC from time to time which shall be complied with, and shall take primacy over this policy.

### **1. Overview of Admission Policy**

- 1.1.** This document contains the admission policy & procedures of Mirpur University of Science and Technology. When any conflict or difference of interpretation occurs, this document shall hold precedence over all others except the University Ordinance
- 1.2.** These policies and procedures are subject to change from time to time on recommendations of Statutory Bodies of the University.

### **2. Admission Policy Statement**

To fascinate students who are academically sound and have the ability to enhance their knowledge and contribute to the learning environment and benefit from the ethos and activities at the University.

### **3. Purpose**

To provide a clear set of principles to the applicants, parents and advisors about admission in all courses of study at University and to ensure processes are transparent and decisions are consistent and fair.

### **4. Aims and Objectives**

The aims and objectives of the Admissions Policy are to:

- a. Provide guidance to applicants about the admission process.
- b. Improve the quality and receptiveness of the admission process;
- c. Ensure fairness and equitable access to academic programs;



- d. Empower applicants by allowing them to manage their applications online;
- e. Ensure that the university's legal liabilities are managed effectively through consistent and appropriate admissions processes.
- f. Encouraging students to benefit from higher education being offered at University.

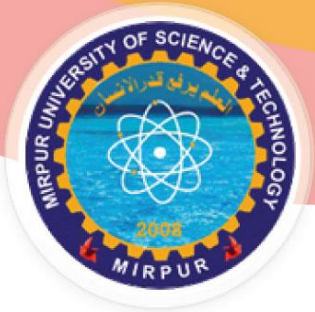
### **5. Principles of Admission Policy**

The University is committed to

- a. Maintain the highest academic standards
- b. Ensure that its admissions and recruitment processes are fair, open and transparent
- c. Apply transparent, explicit, clear and consistent policy and procedure to all students.
- d. Select students on the basis of their individual merits, abilities and aptitudes.
- e. Constantly monitor and review of admissions practices and procedures to respond to any changes in the institutional mission and external factors including changing patterns in the applicant market.

### **6. Admission Procedure**

- 6.1. The University shall advertise admissions for all the disciplines of undergraduate, graduate and postgraduate programs through electronic and print media and Website of the University on dates as may be fixed by the University from time to time.
- 6.2. University offers applicants the facility to apply online for admission to its academic programs.
- 6.3. Only online application shall be accepted on or before the stipulated deadline and No hard copy of the form/ and credentials shall be required. However, all responsibilities of the provided data in the application shall rest upon the applicant. In case of any discrepancy, the admission shall be cancelled at any stage of the degree.
- 6.4. Applicants should be aware, that the presentation of incorrect information or document(s) in connection with admission is a criminal offense and the University reserves the right to initiate appropriate action.



6.5. The submitted applications shall be acknowledged by the text message on the applicant's given cell number. Degree wise electronic list of all applicants shall be displayed on MUST admission portal (<https://MUST.edu.pk>) after the closing date of the admission. The missing candidates (if any) may contact, Director Students Affairs, MUST ([dsa@must.edu.pk](mailto:dsa@must.edu.pk)) before the date of merit list. Otherwise, the claim shall not be entertained after the display of Merit Lists.

6.6. The University shall establish Admission Facilitation Centre's at the following venues, equipped with IT services, for the guidance of the desiring applicants;

- a) Director Students Affairs  
City Campus MUST Mirpur  
Ph.: 05827-961045, 05827-960096
- b) MUST Campus Bhimber Office of the coordinator campus  
Ph.: 05828-960007
- c) MUST Campus Palandri Office of the coordinator campus  
Ph.: 05825-960031

6.7. All admissions in under graduation and graduation shall be made through Admission Committee consisting of three members recommended by the concerned Dean of the Faculty and approved by the Vice Chancellor. The Senior most member of the Committee shall be the Chairperson and junior most member shall be the Secretary of the Committee

6.8. List of selected candidates shall be displayed on the notice board and MUST admission portal (<https://must.edu.pk>) as per admission calendar.

6.9. An applicant can file the admission grievance(s) (if any) in writing along with all required documents to the office of the respective Faculty Dean for redressed.

6.10. All the selected candidate mentioned in any merit list shall present all the credentials in original for verification to respective Faculty Admission Committee (FAC). Verified applicants shall submit two sets of attested copies of all certificates/degrees and four recent passport size photographs (with blue background). Faculty Admission Committee (FAC) shall



issue Challan form for the deposit of 1st-semester dues/Fee.

6.11. The admission dues/fee shall be deposited during the stipulated period in the designated branches of banks.

6.12. The undergraduate degree programs shall be offered on the basis of relevant first (1st) year examinations of Intermediate or equivalent, BA, BSc or equivalent or first two-year results of Diploma of Associate Engineering (DAE) duly recognized by Pakistan Board of Technical Education (PBTE).

6.13. For MS/MPhil & PhD, all the selected candidates mentioned in any merit list shall present all the credentials in original for verification to respective Departmental Admission Committee (DAC). Verified applicants shall submit two sets of attested copies of all certificates/degrees and four recent passport size photographs (with blue background). The Convener of DAC shall issue challan form for the deposit of 1st-semester dues/Fee.

6.14. The graduate and postgraduate degree programs shall be offered on the basis of complete terminal degree.

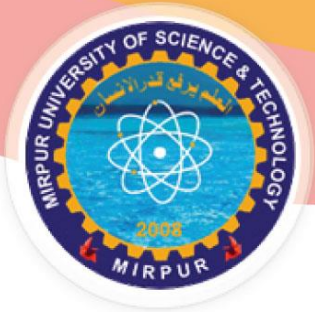
6.15. There will be no reserved seat(s) for graduate and postgraduate degree programs.

6.16. Considering resources, the minimum required number of seats to initiate degree program(s) shall be decided by the notified committee.

6.17. The Campus/Faculty wise number of seats for various Undergraduate degree programs are mentioned however, in special circumstances (not to be mentioned) University reserves the rights not to offer degree program(s). In such cases, the deposited fee/dues shall be refunded as per MUST policy.

6.18. A candidate can mark his/her preference for admission for more than one-degree programs within a Faculty; however, for other Faculty a separate admission form shall be submitted.

6.19. A candidate shall have to pay @ Rs 1500/= as admission processing fee, whereas Rs 300/= shall be charged for each extra degree program of the same faculty within the stipulated time as mentioned in the



admission advertisement/calendar. A separate admission application/processing fee shall be submitted by candidate(s), if they are desirous to apply in programs of different faculties.

6.20. Subject to the availability of seat/merit and prior to the submission of application in more than one discipline(s), a candidate shall be allowed changing major discipline within the stipulated time.

6.21. In case of "O", "A" level education in Pakistan or abroad a Marks Equivalence Certificate (MEC) from Inter Board Committee of Chairmen (IBCC), Islamabad, Pakistan or Higher Education Commission

(HEC), Islamabad, Pakistan shall be required respectively.

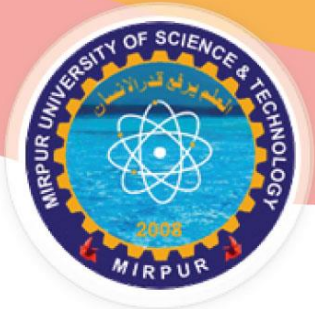
6.22. In case of any other relevant equivalent degree, the Equivalence Certificate from HEC shall be required.

6.23. The required calculation of percentage from CGPA for other than MUST candidates (if any), MUST, CGPA conversion formula shall be followed.

6.24. In case seats remain vacant after the completion of admission process, the late admission may be offered to the candidates falling next in merit not later than 3rd week after the commencement of the semester. However, in such case the student shall be responsible to make up any kind of deficiencies.

#### **Age relaxation Policy of Azad State Jammu and Kashmir**

Degree Program	Upper Age Limit	Maximum Age Relaxation
All Undergraduate Degree Programs including; BS/BBA (4 years)/LLB/ BS-Engineering Technology /BSc-Engineering and Associate Degrees (after 12 years of education)	24	Five Year for Females Two Year for Males
All Undergraduate degree programs including; MA/MSc (2 years)/M-Com (after 14 years of education)	26	Five Year for Females Two Year for Males



**Note:** For MUST Business School (MBA)'s Master Program and graduate, post graduate degree programs there is no upper age limit of applicants.

**7. Degree Programs:**

The following degree programs shall be offered in the University

**7.1. Faculty of Arts and Humanities**

<b>1- Undergraduate Degree Programs (Full Time Morning)</b>
1. BS-English (Bimber Campus)
2. BS- Sociology
3. BS-Islamic Studies
4. BS-Media & Communication Studies
5. BS- International Relation
6. BS- Economics (Bimber Campus)
7. BS- Home Economics
8. BS-Fashion Designing
9. BS- Tourism & Hospitality (Pilandri Campus)
<b>2- Undergraduate 05 Years Degree Programs</b>
1. BA-LLB
<b>3- Master 02 Years Degree Programs</b>
1. Arabic
2. Education
3. English (Bimber Campus)
4. Islamic Studies
5. Economics (Bimber Campus)

<b>4-Teacher Training Degree Programs</b>
1. B.Ed. Secondary (1.5 Yrs.)
2. B.Ed. Elementary (2.5 Yrs.)
3. B.Ed Elementary (4 Yrs.)
<b>5- Graduate Degree Programs MS/MPhil (Full Time Morning)</b>
1. Economics (Bhimber Campus)
2. Islamic Studies
3. Education



## 7.2. Faculty of Engineering and Technology

<b>1-Undergraduate Degree Programs (Full Time Morning)</b>
1. BS- Civil Engineering
2. BS- Computer System Engineering
3. BS- Electrical Engineering
4. BS-Mechanical Engineering
5. BS- Software Engineering
<b>2-Undergraduate (Full Time Morning)</b>
1. BS-Civil Engineering Technology
2. BS-Electrical Engineering Technology
3. BS-Mechanical Engineering Technology
<b>3-Graduate Degree Programs M.Sc./MS (Full Time Morning)</b>
1. Civil Engineering
2. Computer Systems Engineering
3. Electrical Engineering
4. Energy Systems Engineering
5. Mechanical Engineering
6. Software Engineering
<b>4-PhD</b>
1. Civil Engineering
2. Electrical Engineering
3. Mechanical Engineering

## 7.3- Faculty of MUST Business School

<b>1-Undergraduate Degree Programs (Full Time Morning)</b>
BBA-Accounting and Finance
1. BBF-Banking and Finance
2. BS-Commerce
<b>2-Master Degree Programs (Full Time Morning)</b>
1. MBA (3.5 Yrs.)
2. M.Com (2 Yrs.)
<b>3-Master Degree Programs (Full Time Evening)</b>
1. MBA (2 Yrs. Executive)
2. MBA (1.5 Yrs.)
<b>4-Graduate Degree Programs MS/MPhil (Full Time Morning)</b>
1. Management Sciences





### 7.3- Faculty of Natural & Applied Sciences

#### 1-Undergraduate Degree Programs (Full Time Morning )

1. BS-Biotechnology
2. BS-Botany (Bhimber Campus)
3. BS-Chemistry
4. BS-Computer Science
5. BS-Information Technology
6. BS-Mathematics
7. BS-Physics
8. BS-Statistics (Bhimber Campus)
9. BS-Zoology
10. BS- Forestry (Pilandri Campus)

#### 2-Graduate Degree Programs MS/MPhil (Full Time Morning)

1. Computer science
2. Mathematics
3. Physics
4. Chemistry
5. Zoology
6. Biotechnology
7. Botany (Bhimber Campus)

#### 3-PhD (Full Time)

1. Mathematics
2. Physics
3. Chemistry
4. Biotechnology
5. Botany (Bhimber Campus)

### 7.4- Faculty of Health and Medical Sciences

#### 1-Undergraduate Degree Programs (Full Time Morning )

1. BS - Human Nutrition & Dietetics (HND)
2. Doctor of Physical Therapy (DPT)
3. BS – Medical Lab Technology (MLT)



8. Basic Criteria to apply for Undergraduate Degree Programs (BS/BBA(04 Years/8 semesters)/LLB/DPT(5 Years/10 semesters)/BS-Engineering Technology/BS-Engineering (04 Years / 08 semesters)/ after 12 Years of Education)

8.1. Subject to the verification of the minimum required criteria and relevance of the subject by the Faculty Admission Committee (FAC), the provisional admission shall be awarded on the Merit of the First (1st) Year examination of Intermediate or equivalent or the First Two Years' accumulative results of DAE or equivalent marks obtained; however, the fulfillment of relevant minimum criteria shall be required to apply for admission.

8.2. In this regard, the candidate shall have to submit an affidavit (already given in the online admission application form) confirming that he/she shall meet all

the required respective minimum criteria mention in the advertisement with at least 45%, 50%, and 60% respectively required marks in the 2nd / Final Year of the relevant annual examinations; otherwise, the provisional admission shall stand cancelled and The cancelled admission in this category full fee shall be refund according to HEC policy.

8.3. Merit Determination Criteria

The merit shall be determined of above mentioned degree programs as follow.

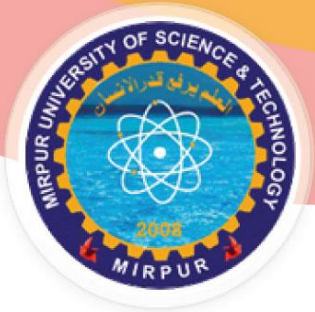
1- Weightage of Entry Test Marks	30%
2- Weightage of Matric Marks	25%
3- Weightage of FA/F.Sc (Ist Year) Marks	45%
Total:	100



#### 8.4. Pre-requisites for Admission:

The pre-requisites and other requirements (if any) for admission in Undergraduate Degree Programs are as under

Degree Program	Pre-Requisites
1- BS-English 2- BS-Islamic Studies 3- BS-Media and Communication Studies 4- BS-Economics 5- BS-International Relations 6- BS-Sociology 7- BS-Tourism & Hospitality 8- BS-Fashion Designing 9- BS Home Economics 10- B.Ed. Elementary 11- BS-Banking and Finance 12- BS-Commerce 13- BBA-(Bachelor of Business Administration)	Intermediate or equivalent with at least 45% marks
14- BS-Biotechnology 15- BS-Botany 16- BS-Zoology 17- BS- Human Nutrition and Dietetics 18- BS – Medical Lab Technology (MLT) 19- BS- Forestry	Intermediate (F.Sc. Pre-Medical only) with 45% marks for all, 50% marks for Biotechnology and 60% for Human Nutrition and Dietetics and Medical Lab Technology (MLT)



20- BS-Chemistry	Intermediate (F.Sc. Pre-Engineering or F.Sc. Pre Medical)
21- BS-Mathematics	F.Sc. (Pre-Engineering), ICS in Mathematics and any one of Physics, Statistics or Economics or equivalent or F.A. in Mathematics, Statistics and Economics marks (2nd Division) or F.Sc Pre Medical with Additional Mathematics with minimum 45%
22- BS-Physics	F.Sc. (Pre-Engineering) in Physics, Mathematics or equivalent or F.Sc Pre Medical with Additional Mathematics with minimum 45% marks (2nd Division).
23- BS-Statistics	Intermediate (F.Sc. Pre-Engineering or Intermediate or General Science Group with Statistics)
24- BS-Computer Science 25- BS-Information Technology	F.Sc./ F.A (Economics/ Statistics, Mathematics, Physics), ICS, I.Com, Diploma in IT/ Electronics or equivalent to Intermediate with 50% marks.
26- LLB	Intermediate or equivalent with at least 45% marks <b>NOTE:</b> Qualified Law Admission Test (LAT) conducted by HEC shall be required.
27-Doctor of Physical Therapy (DPT)	F. Sc. (Pre-medical) with minimum 60% Marks
28- BS Civil Engineering 29- BS Computer System Engineering 30- BS Electrical Engineering 31- BS Mechanical Engineering 32- BS Software Engineering	<ul style="list-style-type: none"> <li>At least 60% marks in Intermediate (FSc; Pre-Engineering or Pre-Medical with additional Mathematics or equivalent)</li> </ul> <b>NOTE:</b> Three-year Diploma in Associate Engineering (DAE) in the relevant technology duly recognized by Pakistan Board holders may apply against reserved seats in relevant BS-Engineering degrees. However, MUST Entry Test shall be required to apply for BS Engineering degrees
33- BS Civil Engineering Technology 34- BS Electrical Engineering Technology 35- BS Mechanical Engineering Technology	Intermediate FSc Pre-Engineering, FSc Pre-Medical with additional Mathematics or relevant DAE with at least 50% marks <b>NOTE:</b> No Entry Test is required



9. Basic Criteria to Apply for Degree Programs:  
MA/MSc/MBA/MCom (after 14 Years of education);

9.1. Subject to the verification of the minimum required criteria and relevance of the subject by the Faculty Admission Committee (FAC), the provisional admission shall be awarded on the Merit of BA/BSc/B Com (third semester or third year results) or equivalent marks obtained; however, at least 45% marks to apply for admission to all Undergraduate degree programs MA/MSc/ MBA and M-Com (after 14 years of education) shall be required.

9.2. In this regard, the candidate shall have to submit an affidavit (already given in the online admission application form) confirming that he/she shall meet all required respective minimum criteria with at least 45% required marks in the final year / 4th Semester; otherwise, the provisional admission shall stand cancelled. The cancelled admission in this category the

fee shall be refunded according to HEC fee refund policy.

9.3. Merit Evaluation Criteria

The merit shall be determined for admission in above mentioned degree programs as follow.

- 1- Weightage of Entry Test Marks  
30%
- 2- Weightage of Matric Marks  
10%
- 3- Weightage of FA/F.Sc. Marks  
20%
- 4- Weightage of BA/B.Sc. (3rd Year) Marks  
40%



#### 9.4. Pre-requisites for Admission

The pre-requisites and other requirements (if any) for admission in this category are as under:

Degree Program	Pre-Requisites
1. MA Islamic Studies 2. MA Arabic 3. MA English 4. MSc Botany 5. MSc Computer Science (MCS) 6. MA Economics 7. MSc Physics 8. MSc Chemistry 9. MSc Zoology	200 marks in the relevant subject in the last degree and overall at least 2 <sup>nd</sup> division.
10. MBA: 3.5 Years 11. MA Education	BA/BSc/BCom or equivalent with at least 2 <sup>nd</sup> division.
12. MBA Executive 2 Years	BA/B.Sc./B.Com (14 years of Education) with at least 2 <sup>nd</sup> division, plus 4 years' experience or 16 years of Education with 2 years' experience at administrative/ Industry Level.
13. MBA 1.5 Years	BBA/ B.Com (4 Years) with 2 <sup>nd</sup> division

14. MSc Mathematics	Mathematics with 400 with 2 <sup>nd</sup> division
15. M.Com	B.Com (IT) / Associate Degree in Accounting & Finance with 2 <sup>nd</sup> division.
16. B. Ed Elementary 2.5 years (after 14 years Education)	BA/B.Sc. or equivalent with 2 <sup>nd</sup> division.
17. B. Ed Secondary 1.5 years (after 16 years Education)	MA/MSc/BS Graduates or equivalent with at least 2 <sup>nd</sup> division.

#### 10. Admission Regulations For MS/ M.Phil Degree Programs (after 16 Years of education)

- 10.1. The departmental admission committee (DAC) shall ascertain the eligibility of the candidates by scrutinizing the admission form. The provisional list of shortlisted candidates shall be displayed on departmental notice board and MUST website.
- 10.2. The short listed candidates shall provide the GAT-General ([www.nts.org.pk/gat/gat.asp](http://www.nts.org.pk/gat/gat.asp)) conducted by the National Testing Service with a minimum 50% cumulative score. The GAT-General test is valid for a period of two years.



- 10.3. If the Test is not available in NTS subject list, then a University Committee consisting of at least 3 PhD faculty members in the subject area and approved by the HEC will conduct the Test and qualifying score for this will be 60%.
- 10.4. The interviews of short listed candidates shall be conducted by the DAC with intimation to the Director ASRB.
- 10.5. The Admission Committee will grant admissions subject to the approval by the Advanced Studies & Research Board (ASRB). The cases need to be submitted before the start of sessional examination of the first semester. The ASRB will be responsible to respond back before the start of terminal examination of the first semester.
- 10.6. The number of scholars to be admitted shall be such as may be determined by the competent authority in consultation with the Chairperson/ Director of the department.
- 10.7. There shall be an admission committee for each department which shall perform functions as specified from time to time. The four members committee shall have tenure of three years. It shall consist of the following: Dean of the concerned Faculty (Chairperson of the Committee), Chairperson/ Director of the concerned Department/ Institute/ Centre/ School/ College/ Affiliated Institution, two Senior faculty members of the relevant discipline to be nominated by the Dean on the recommendation of concerned Head, approved by the Vice Chancellor.
- 10.8. Admissions will be granted on open merit basis (there is no quota seat). However, foreign candidates will be selected through the Federal Ministry of Education, Government of Pakistan.
- 10.9. The candidate has to produce at the time of the first enrolment, a certificate from the Medical Officer of any public sector hospital to the effect that he/ she is free of any communicable disease or mental or physical



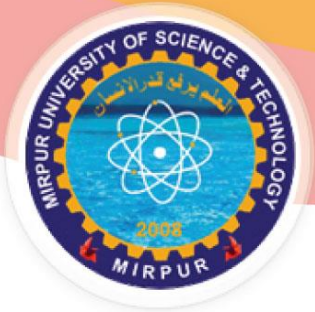
disability which is likely to stand in the way of his/ her pursuit of higher studies and research.

- 10.10. The candidate must also produce character certificate issued by the Head of Institution last attended by the student testifying good moral character of the student. All those candidates, who were punished by any Degree Awarding Institutions (DAI's) for acts of indiscipline and other undesirable activities and were awarded major penalties, shall not be admitted to postgraduate studies in the University under any circumstances. All other candidates, who were, awarded minor penalties for more than once shall not be admitted to the postgraduate studies in the University either.
- 10.11. All the employees of public sector organizations have to produce the certificate of study leave to pursue the

studies as a regular student from their respective head offices.

- 10.12. The employees of the University appointed on permanent/ adhoc/ contract basis shall be allowed to join the programme, classes as whole time regular scholars without obtaining leave of absence. Such employees shall have to produce a certificate from the concerned Head to the effect that the normal work of the department will not be affected.
- 10.13. The selected candidates will have to produce HEC attested degree of previous class within a month of their admission.





#### 10.14. Merit Evaluation Criteria

- a) A candidate shall be selected on the basis of cumulative merit to be determined from his/ her past academic record and achievements in the written tests conducted by the Controller of Examinations and Interview by Admission Committee of the concerned discipline.
- b) The allocation of marks for determining merit shall be as follows:
- |                    |          |
|--------------------|----------|
| i. Academic Record | 55 marks |
| ii. Admission Test | 35 marks |
| iii. Interview     | 10 marks |
- c) The distribution of marks allocated to the academic record shall be as under:
- (a)  $[\text{Marks obtained in B.Sc. (Engg.)/ BS (4 years)} \div \text{Total Marks}] \times 40 + [\text{Marks obtained in F.A./F.Sc.} \div \text{Total Marks}] \times 15$ .
- (b)  $[\text{Marks obtained in M.A./ M.Sc.} \div \text{Total Marks}] \times 20 + [\text{Marks obtained in B.A./ B.Sc.} \div \text{Total Marks}] \times 20 + [\text{Marks obtained in F.A./ F.Sc.} \div \text{Total Marks}] \times 15$ .
- (c)  $[\text{Marks obtained in BS (5 years)} \div \text{Total Marks}] \times 40 + [\text{Marks obtained in F.A./F.Sc.} \div \text{Total Marks}] \times 15$ .
- (d)  $[\text{Marks obtained in BS (6 years)} \div \text{Total Marks}] \times 55$ .



### 10.15. Pre-requisites for Admission

Degree Program	Pre-Requisites
1. Civil Engineering 2. Computer Systems Engineering 3. Electrical Engineering 4. Energy Systems Engineering 5. Mechanical Engineering 6. Software Engineering	<ul style="list-style-type: none"> <li>B.Sc. Engineering or equivalent qualifications in the relevant subject with at least 65% marks, no 3<sup>rd</sup> division in the academic record and duly registered with the Pakistan Engineering Council.</li> <li>For Energy Systems Engineering, B.Sc. Engineering in Mechanical, Electrical, Civil, Environmental or Chemical with at least 65% marks, no 3<sup>rd</sup> division in the academic record and duly registered with the Pakistan Engineering Council.</li> </ul>

1. Mathematics 2. Physics 3. Chemistry 4. Zoology 5. Biotechnology 6. Botany 7. Computer Science 8. Management Sciences 9. Education 10. Economics 11. Islamic Studies	<ul style="list-style-type: none"> <li>M.Sc./ BS (Hons) in equivalent qualifications in the relevant subject with at least 65% marks, no 3<sup>rd</sup> division in academic record.</li> <li>For Biotechnology M.Sc./ BS (4 Years) with at least 65% marks in Biotechnology/ Biology/ Bio-Chemistry/ Botany/ Zoology/ Molecular Biology/ Bio-informatics/ Pharm-D/ Medical Lab Technology/ DVM or Agriculture Science, no 3<sup>rd</sup> division in academic record.</li> <li>In case CGPA or %age obtained by the candidate is not mentioned on his/her transcript the academic qualification marks shall be calculated as per MUST evaluation policy.</li> </ul>
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## 11. Admission Regulations For Ph.D. Degree Programm

11.1. The departmental admission committee (DAC) shall ascertain the eligibility of the candidates by scrutinizing the admission form. The provisional list of shortlisted candidates shall be displayed on departmental notice board and MUST website.

11.2. A subject test conducted by the National Testing Service (NTS) or ETS, USA in the area of specialization chosen at the PhD level must be cleared prior to admission for the PhD Program.

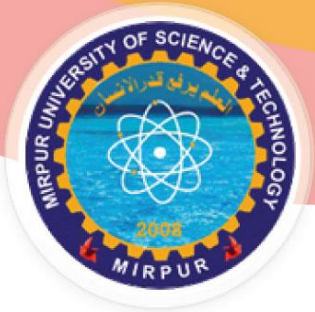
a) In the case of Graduate Assessment Test (GAT) (<http://www.nts.org.pk/gat/gatsubject.asp>) a minimum of 60% score is required.

b) In the case of GRE subject test a minimum of 60% (for admissions thereafter) percentile score is required.

c) If the test is not available in NTS subject, then a University committee consisting of at least 3 Ph.D. faculty members in the subject area, approved by the HEC will conduct the Test at par with GRE Subject Test and qualifying score for this test will be 70%.

11.3. The interviews of short listed candidates shall be conducted by the DAC with intimation to the Director ASRB.

11.4. The Admission Committee will grant admissions subject to the approval by the Advanced Studies & Research Board (ASRB). The cases need to be submitted before the start of sessional examination of



the first semester. The ASRB will be responsible to respond back before the start of terminal examination of the first semester.

11.5. The number of scholars to be admitted shall be such as may be determined by the competent authority in consultation with the Chairperson/ Director of the department.

11.6. There shall be an admission committee for each department which shall perform functions as specified from time to time. The four members committee shall have tenure of three years. It shall consist of the following: Dean of the concerned Faculty (Chairperson of the Committee), Chairperson/ Director of the concerned Department/ Institute/ Centre/ School/ College/ Affiliated Institution, two Senior faculty

members of the relevant discipline to be nominated by the Dean on the recommendation of concerned Head, approved by the Vice Chancellor.

11.7. Admissions will be granted on open merit basis (there is no quota seat). However, foreign candidates will be selected through the Federal Ministry of Education, Government of Pakistan.

11.8. The candidate has to produce at the time of the first enrolment, a certificate from the Medical Officer of any public sector hospital to the effect that he/ she is free of any communicable disease or mental or physical disability which is likely to stand in the way of his/ her pursuit of higher studies and research.

11.9. The candidate must also produce character certificate issued by the Head of Institution last

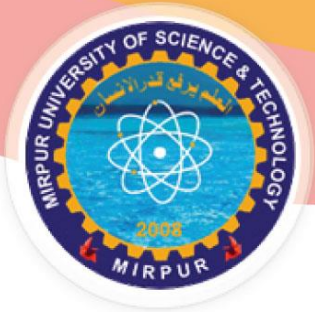


attended by the student testifying good moral character of the student. All those candidates, who were punished by any Degree Awarding Institutions (DAI's) for acts of indiscipline and other undesirable activities and were awarded major penalties, shall not be admitted to postgraduate studies in the University under any circumstances. All other candidates, who were, awarded minor penalties for more than once shall not be admitted to the postgraduate studies in the University either.

11.10. All the employees of public sector organizations have to produce the certificate of study leave to pursue the studies as a regular student from their respective head offices.

11.11. The employees of the University appointed on permanent/ adhoc/ contract basis shall be allowed to join the programme, classes as whole time regular scholars without obtaining leave of absence. Such employees shall have to produce a certificate from the concerned Head to the effect that the normal work of the department will not be affected.

11.12. The selected candidates will have to produce HEC attested degree of previous class within a month of their admission.



### 11.13. Merit Evaluation Criteria

1. A candidate shall be selected on the basis of cumulative merit to be determined from his/ her past academic record, achievements in Interview by Admission Committee of the concerned discipline and research publication.
2. The allocation of marks for determining merit shall be as follows:
  - i. Academic Record                      80 marks
  - ii. Interview                                15 marks
  - iii. Research Publication                5 Marks
3. The distribution of marks allocated to the academic record shall be as under:
  - a)  $[\text{Marks obtained in M.Sc. (Egg.)} \div \text{Total Marks}] \times 25 + [\text{Marks obtained in B.Sc. (Egg.)/ BS (4 years)} \div \text{Total Marks}] \times 40 + [\text{Marks obtained in F.A./F.Sc.} \div \text{Total Marks}] \times 15.$
  - b)  $[\text{Marks obtained in M.Phil.} \div \text{Total Marks}] \times 25 + [\text{Marks obtained in M.A./ M.Sc.} \div \text{Total Marks}] \times 20 + [\text{Marks obtained in B.A./ B.Sc.} \div \text{Total Marks}] \times 20 + [\text{Marks obtained in F.A./ F.Sc.} \div \text{Total Marks}] \times 15.$
  - d)  $[\text{Marks obtained in M.Phil.} \div \text{Total Marks}] \times 25 + [\text{Marks obtained in BS (5 years)} \div \text{Total Marks}] \times 40 + [\text{Marks obtained in F.A./F.Sc.} \div \text{Total Marks}] \times 15.$
  - e)  $[\text{Marks obtained in M.Phil.} \div \text{Total Marks}] \times 25 + [\text{Marks obtained in BS (5 years)} \div \text{Total Marks}] \times 40 + [\text{Marks obtained in F.A./F.Sc.} \div \text{Total Marks}] \times 15.$



f)  $[\text{Marks obtained in M.Phil.} \div \text{Total Marks}] \times 25 + (\text{Marks obtained in BS (6 years)} \div \text{Total Marks}) \times 55$ .

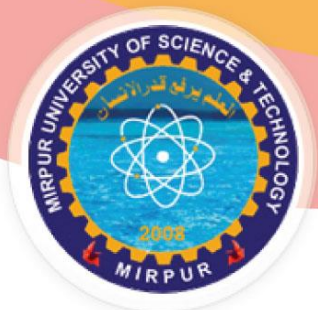
#### 11.14. Pre-requisites for Admission

The pre-requisites and other requirements (if any) for admission in this category are as under

Degree Program	Pre-Requisites
<ul style="list-style-type: none"> <li>• Biotechnology</li> <li>• Botany</li> <li>• Mathematics</li> <li>• Physics</li> <li>• Chemistry</li> </ul>	<ul style="list-style-type: none"> <li>• At least 18 years of education (MS/MPhil degree) or equivalent qualification in the relevant subject with at least 65% marks, no 3<sup>rd</sup> Division in academic record.</li> <li>• For Biotechnology MPhil in 1<sup>st</sup> Division or CGPA 3.0/4.0 with at least 65% marks in Biotechnology/ Biology/ Bio-Chemistry/ Botany/ Zoology/ Molecular Biology/ Bio-informatics/ Agriculture Science or Pharmacy.</li> <li>• 06 CH research in his/her MS/MPhil program.</li> <li>• In case CGPA or %age obtained by the candidate is not mentioned on his/her transcript the academic qualification marks shall be calculated as per MUST evaluation policy.</li> </ul>

#### 12. **ADMISSION POLICY FOR RESERVED SEATS IN UNDERGRADUATE DEGREE PROGRAMS (EXCEPTIONS / CONDITIONS ARE MENTIONED WITH EVERY CATEGORY)**

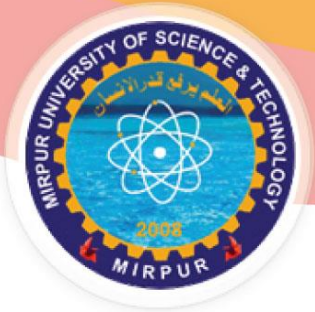
- a) The merit of the reserved seats shall be determined within the category; however, the applicant has to fulfil the general admission/minimum required eligibility criteria to apply for.
- b) A candidate can apply against both reserved and merit seats; however, separate application forms shall be filled



- c) The number of reserved seats are included in total allocated seats; however, unfilled reserved seat (if any) shall be dealt under open merit.
- d) In case more than required nominations against a particular degree program are received, MUST shall reserve the rights to prepare the merit list within the same category as per MUST policy.
- e) The nomination against a category shall not change, unless approved by the relevant nominated authority.
- f) Following is the detail of the admission against reserved seats.

S #	Reserved Seat Category	Percentage of the seats reserved in total Allocated Seats	Degree Programs allowed and Requirements at the Time of Registration
1	Special Persons	02 % (at least one seat)	<ul style="list-style-type: none"> <li>a) The applicant shall have to produce a disability certificate, duly issued by the Social welfare department government of Azad Jammu and Kashmir before the date of the commencement of the admission.</li> <li>b) The candidate shall have to appear before the MUST Medical Board/ Disable Admission Committee for Medical examination as per advertised schedule/admission calendar along with original credentials.</li> </ul> <p><b>NOTE:</b> Currently, facilities for the blindness and the elevators are not available.</p>
2	Children of MUST Employees	02 % (at least one seat)	<ul style="list-style-type: none"> <li>a) In all degree programs offered in MUST Campus and LLB except for Graduate and PhD degree programs.</li> <li>b) NADRA B-Form that includes the name(s) of the children applied for admission.</li> <li>c) MUST employment certificate issued by Registrar office.</li> </ul>





S #	Reserved Seat Category	Percentage of the seats reserved in total Allocated Seats	Degree Programs allowed and Requirements at the Time of Registration
3	<b>AJ&amp;K Refugees</b> (Refugees settled in Pakistan/ Refugees 1989)		a) In all degree programs offered at MUST. b) Merit list shall be prepared by the relevant Admission Committee.
4	<b>FATA/ KPK</b>		a) In all B.Sc. Engineering degree Programs, CS and IT Undergraduate Programs. b) The applicant shall provide a nomination letter from the respective nominating authorities.
5	<b>Punjab</b>		a) In all B.Sc. Engineering degree Programs, CS and IT Undergraduate Programs. b) The applicant shall provide a nomination letter from the respective nominating authorities.
6	<b>Sindh</b>		a) In all B.Sc. Engineering degree Programs. b) The applicant shall provide a nomination letter from the respective nominating authorities.
7	<b>Baluchistan</b>		a) In all B.Sc. Engineering degree Programs. b) The applicant shall provide a nomination letter from the respective nominating authorities.



S #	Reserved Seat Category	Percentage of the seats reserved in total Allocated Seats	Degree Programs allowed and Requirements at the Time of Registration
8	<b>Pakistan National</b>		a) In all BS and Masters Programs of Faculty of Natural & Applied Sciences and Arts & Humanities Programs. b) The applicant shall provide a nomination letter from the respective nominating authorities after selection in merit list produced by relevant Admission Committee.
9	<b>Gilgit-Baltistan</b>		a) In all degree programs offered at MUST. b) The applicant shall provide a nomination letter from the respective nominating authorities.
10	<b>Diploma (DAE) Holder</b>		a) In relevant B.Sc. Engineering degree Programs. b) The applicant shall provide a nomination letter from the respective nominating authorities.
11	<b>Wards of Shuhada, War Disabled Serving and Retired Individuals of Pakistan Armed Forces</b>	01 % (at least one seat)	In all degree programs offered at Mirpur University of Science and Technology The applicant shall produce a nomination letter from the GHQ. Without the nomination letter from GHQ, admission shall not be granted.



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Member



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Member



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Member



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Member



**ENGR. AMSA SHABBIR**  
Member



**ENGR. KHAN AWAIS KHAN**  
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**ENGR. MUHAMMAD RAEES**  
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**MR. MUHAMMAD ALI**  
Member



**MS. QUMQUM NOSHAD**  
Member



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