Mehran University of Engineering & Technology, Jamshoro

PROSPECTUS 2022

www.muet.edu.pk

Acknowledgment

We are thankful to stakeholders for their involvement in preparation of this Prospectus.

Disclaimer

The information in this prospectus is correct at the time of publishing. The University reserves the right to add or remove courses and to make changes in Syllabi, Courses Ooptions and Modules, Fees etc. at any stage. Although every effort is made to ensure accuracy at the time of publication, University reserves the right to make any corrections in the contents and provisions without notice. For further information please contact admissions@admin.muet.edu.pk

Vision:
To become world class educational and research institute and contribute effectively towards building up indigenous & technological capabilities for sustainable socio-economic development.

Mission:
To equip our undergraduate, postgraduate and doctoral students with advance knowledge through collaborative opportunities emerged from linkages with academia, industry and government.

Quality Policy:
In line with its vision and mission, the management and faculty have developed broad based Quality Management System in the University with a strong commitment to the following:

1. **Quality Brand**
   University aims to be recognized for its leadership position in higher education through designing interactive courses and carrying out multidisciplinary research programs and projects that are distinctive and relevant to social needs, and are of national and international quality standards.
2. **Compliance with Statutory Requirements**
   University ensures that every individual working for and / or studying in the University shall comply with the University Act, Statutes, Regulations and Rules.
3. **Stakeholders Focus**
   University considers every stakeholder very important and therefore endeavors to provide encouraging, flexible, empowered, cohesive and congenial working environment to assimilate, synthesize and analyze knowledge for the ultimate benefit of academia, industry, government and society.
4. **Student Focus**
   University considers students as its direct customers and is committed to produce highly qualified manpower related to multidisciplinary engineering and technology, policy and management and business fields. University ensures meeting students' professional needs and expectations and appreciates their participatory role in maintaining progressive learning environment.
5. **Knowledge Creation and Dissemination**
   University is focused on conducting multidisciplinary research in order to create knowledge to resolve political, technological, social and environmental issues and to disseminate this knowledge through trainings, workshops, conferences and research journals to various national and international institutions.
6. **Business Startup**
   University is focused on facilitating startups and creating businesses based on multidisciplinary fields.
7. **Linkages and Networking**
   University establishes strong ties with various national and international universities, industries and government.
8. **Optimization of Resources**
   University is focused that the human capital, infrastructure and financial resources must be utilized optimally for accruing and sustaining benefits.
9. **Environment Friendly**
   University is committed to make our University environment safest, greenest and cleanest in the region.
10. **Continual Improvement**
    University is committed to provide a rewarding and challenging environment for faculty, staff and students to kindle and sustain a passion for excellence.

PROGRAM LEARNING OUTCOMES (PLOS) FOR B.E. PROGRAMS

Introduction

The twelve graduate attributes provided by the PEC as per Manual of Accreditation 2019 (3rd Edition) have been adopted as the PLOs for its Bachelor of Engineering Programs in MUET, Jamshoro and its campus. It is ensured that these PLOs are achieved by respective CLOs of Engineering curriculum as assessed through both direct and indirect methods.

List of PLOs

The twelve PLOs for Undergraduate (B.E) Engineering Program are:

1. **GA1 Engineering Knowledge:** An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

2. **GA2 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. **GA3 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. **GA4 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. **GA5 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. **GA6 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. **GA7 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.

8. **GA8 Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

9. **GA9 Individual and Team Work:** An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.

10. **GA10 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. **GA11 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. **GA12 Lifelong Learning:** An ability to recognize the need for, and have the preparation and ability to engage in, independent and life-long learning in the broadest context of technological change.

OUR MAJOR ACHIEVEMENTS

UNIVERSITY OF TODAY – WORKING FOR TOMORROW

- Ranked 351st in QS World University Rankings
- Ranked 2nd in UI GreenMetric World University Rankings
- Ranked 2nd in Public Sector Engineering University in Pakistan and 1st in Sindh Prvince in HEC Rankings.
- 4 Patents registered
- Lifelong Learning Resource Centre Established
- FM Radio Frequency 96.2 Allotted
- Five start-up Companies Registered
- 200+ PHD faculty members
- Internationally published books by faculty
- First ever UNESCO/ICTP Regional Workshop on "FGPA Design for scientific instrumentation" held at MUET (indico.ictp.it/event/a14228/)
- Innovation & Entrepreneurship Centre (IEC) Established (iec.muet.edu.pk)
- US-Pak center for advanced studies in Water (USPCAS-W) Established (Water.muet.edu.pk)
- Baby Day Care Centre Established
- Establishment of Society of Women Engineers (SWE)
- Establishment of Student international societies and Chapters
- International Science-Policy Conference on Climate Change in Pakistan, held at Islamabad (sp3c.com.pk)
- 18 international conferences in last 4 years
- Organized conferences in Spain, Malaysia, Nepal and Ireland
- Collaborative linkages with International/National Universities and Industries
- Leading partner university in Erasmus Mundus, European Mobility Program
- First time in MUET history, more than 80 companies participated in Job Fair
- Students Financial Aid Office providing scholarships to more than 40% students
- Social events (Alumni reunion, Model United Nations, Big Event, MUET Gala)
- Serving communities through Corporate Social Responsibility (CSR) program
- DICE Energy & Water (DEW'1 First ever in history of MUET (dew.muet.edu.pk)
- Gender policy introduced by MUET, Jamshoro at: (www.muet.edu.pk/sites/default/files/MUET-Gender-Policy-Statement.pdf)
- Providing continuously National Freelance Training Program to students in different trades
- Establishment of Business Incubation Center of HEC proudly led by Mehran University in Consortium
- Mehran University publishes its own research Journal since 1982, which has now been recognized by leading indexes.
- Recently launched first research journal in social sciences named 'Repertus' which specifically focuses on language research
- Mehran UET has been selected amongst 8 Pakistasni Universities for Kamyab Jawan Program
- Mehran UET students and teachers have won numerous awards in the field of research, education and knowledge in Qatar, China, USA and many other countries.

ACADEMIC CALENDAR FOR BACHELOR'S DEGREE PROGRAMS
FOR THE ACADEMIC YEAR 2022-23

Duration of a Semester:	
Teaching	16 Weeks
Mid Semester Exam	01 Week
Final Semester Exam Preparation	01 Week
Final Semester Exam Conduct	02 Weeks
Semester Break	01 Week
Total	**21 Weeks**

Duration of a Year:	
Duration of Two Semesters	21x2 = 42 Weeks
Duration of Summer Vacation / Summer Semester	08 Weeks
Duration of Winter Break	02 Weeks
Total	**52 Weeks**

Minimum attendance requirement to be eligible to appear in the Semester Examination is 75%.
Number of Lectures during the Semester in a subject of 3 CH & 2 CH shall be 48 & 32 respectively.
Number of contact hours for a practical of 1 CH per Semester is 48.

SEMESTER: FALL 2022					
Batch & Semester	**22-Batch (1st Semester)**	**21-Batch (3rd Semester)**	**20-Batch (5th Semester)**	**19-Batch (7th Semester)**	**18AR-Batch (9th Semester)**
Date of Start of Classes	**21-11-2022**	**28-11-2022**	**19-12-2022**	**19-12-2022**	**07-11-2022**
Winter Vacation	**24-12-2022 to 08-01-2023**				
Conduct of Mid Semester Exam	**30-01-2023**	**06-02-2023**	**27-02-2023**	**27-02-2023**	**16-01-2023**
Date of Suspension of Classes	**01-04-2023**	**08-04-2023**	**29-04-2023**	**29-04-2023**	**18-03-2023**
Schedule of Examination	**01-04-2023**	**08-04-2023**	**29-04-2023**	**29-04-2023**	**18-03-2023**
Examination Preparation up to	**07-04-2023**	**14-04-2023**	**05-05-2023**	**05-05-2023**	**24-03-2023**
Conduct of Final Semester Exam	**08-04-2023**	**15-04-2023**	**06-05-2023**	**06-05-2023**	**25-03-2023**
Semester Break from	**29-04-2023**	**08-05-2023**	**24-05-2023**	**24-05-2023**	**15-04-2023**
Announcement of Result (Expected)	**15-05-2023**	**22-05-2023**	**08-06-2023**	**08-06-2023**	**02-05-2023**
Marksheet Issuance (Expected)	**15-05-2023**	**22-05-2023**	**08-06-2023**	**08-06-2023**	**02-05-2023**

SEMESTER: SPRING 2023					
Batch & Semester	**22-Batch (2nd Semester)**	**21-Batch (4th Semester)**	**20-Batch (6th Semester)**	**19-Batch (8th Semester)**	**18AR-Batch (10th Semester)**
Date of Start of Classes	**02-05-2023**	**08-05-2023**	**29-05-2023**	**29-05-2023**	**17-04-2023**
Summer Vacation	**03-06-2023 to 30-07-2023**				
Conduct of Mid Semester Exam	**21-08-2023**	**28-08-2023**	**18-09-2023**	**18-09-2023**	**07-08-2023**
Date of Suspension of Classes	**21-10-2023**	**28-10-2023**	**11-11-2023**	**11-11-2023**	**07-10-2023**
Schedule of Examination	**21-10-2023**	**28-10-2023**	**11-11-2023**	**11-11-2023**	**07-10-2023**
Examination Preparation up to	**27-10-2023**	**03-11-2023**	**17-11-2023**	**17-11-2023**	**13-10-2023**
Conduct of Final Semester Exam	**28-10-2023**	**04-11-2023**	**18-11-2023**	**18-11-2023**	**14-10-2023**
Announcement of Result (Expected)	**25-11-2023**	**01-12-2023**	**08-12-2023**	**08-12-2023**	**15-11-2023**
Marksheet Issuance (Expected)	**25-11-2023**	**01-12-2023**	**08-12-2023**	**08-12-2023**	**15-11-2023**

SUMMER SEMESTER 2023					
Batch & Semester	**22-Batch (1st Semester)**	**21-Batch (1st to 3rd Semester)**	**20-Batch (1st to 5th Semester)**	**19-Batch (1st to 7th Semester)**	
Start of Registration	**22-05-2023**	**22-05-2023**	**26-05-2023**	**26-05-2023**	
Start of Summer Semester	**05-06-2023**	**05-06-2023**	**05-06-2023**	**05-06-2023**	
End of Summer Semester	**30-07-2023**	**30-07-2023**	**30-07-2023**	**30-07-2023**	

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1. INTRODUCTION

1.1 The University

The Mehran University of Engineering and Technology is known as MUET or Mehran UET in short. It is a public sector university catering to the future engineering professionals' demand of the Sindh Province in particular and the country in the broader sense. It was initially established as Sindh University Engineering College of the University of Sindh 1963. Accordingly, the college was first declared as an additional campus of the University of Sindh headed by a Pro-Vice-Chancellor in July 1976 and later upgraded to the level of a full-fledged independent University on March 1, 1977 through an ordinance issued by the Governor of Sindh. The ordinance was later converted into an Act of the Provincial Assembly of Sindh Province. The new University was named as "Mehran University of Engineering and Technology, Nawabshah".

In 1980, the Government decided to shift Mehran UET to Jamshoro and the campus at Nawabshah was declared as a constituent college of Mehran UET and renamed the Campus as Mehran University College of Engineering and Technology (MUCET), Nawabshah". On 7th August 1996, MUCET was upgraded to the level of a university through an ordinance and later through an act of Sindh Assembly and was renamed as **Quaid-e-Awam University of Engineering, Science and Technology (QUEST), Nawabshah**. At present, QUEST is accredited with the Higher Education Commission (HEC), Pakistan Engineering Council (PEC) and is the member of Association of Commonwealth Universities.

In 2009, a constituent college named as 'Mehran University College of Engineering & Technology' was established at Khairpur Mirs' to cater the increasing demand of qualified engineers. Later on, in 2013, it was upgraded as MUET, SZAB Campus, Khairpur Mirs'.

The University has a mission to produce high-quality engineering, sciences and social sciences graduates with extraordinary skills to fulfill the rising demand of the industries and establish stronger linkages with the industries in order to better understand their present and future requirements.

Mehran UET has the honor of being the first Public Sector Engineering University of the country to have successfully obtained the ISO 9000 Certification. Mehran UET is also a member of the Association of Commonwealth Universities of the United Kingdom. In March 2021, HEC Quality Assurance Agency (QAA) confers the Excellent Performance Award upon MUET for the year (2018-2019) at the Annual Progress Review meeting.

QS World University Rankings ranked MUET among the top 351-400 universities of Asian in its ranking for 2020 and UI GreenMetric World University Rankings ranked MUET 298th globally and 8th nationally in its ranking for 2021. The HEC ranked MUET 1st in Sindh and 6th in Pakistan, in Engineering Category. Mehran UET continuously maintain the highest ranking i.e., "W" category in Quality Assurance Agency (QAA), HEC, Islamabad.

Besides, Mehran UET is focused on commerlization of research conducted on campus. In this process, a number of patterns have been filed nationally and internationally and startups have been established as registered companies.

The University has been organizing conferences and workshops nationally and internationally on regular basis.

1.2 Officers of the University

The principal Officers of the University, responsible for the overall administration, academic activities, and development work in the University.

Sr. No.	Post	Name	Phone
1.	Vice-Chancellor	Prof. Dr. Tauha Hussain Ali	022-2771197
2.	Pro-Vice-Chancellor Main Campus, Jamshoro	Prof. Dr. Tauha Hussain Ali	022-2771360
3.	Pro-Vice-Chancellor MUET, SZAB Campus, Khairpur Mir's	Prof. Dr. Abdul Sami Qureshi	0243-9280312
4.	Dean, Faculty of Architecture and Civil Engineering	Prof. Dr. Khan Mohammad Brohi	022-2771638
5.	Dean, Faculty of Electrical, Electronic and Computer Engineering	Prof. Dr. Mukhtiar Ali Unar	022-2771558
6.	Dean, Faculty of Mechanical Process and Earth Engineering	Prof. Dr. Khanji Harijan	022-2771312
7.	Dean, Faculty of Science, Technology and Humanities	Prof. Dr. Aneel Kumar	022-2771352
8.	Registrar	Mr. Lachman Das Sootahar	022-2771371
9.	Director Finance	Mr. Zeeshan Ahmed Memon	022-2771442
10.	Controller of Examinations	Mr. Khalid Feroz Channa	022-2771631
11.	Director Admissions	Mr. Saleem Siddiqui	022-2771704
12.	Director, Works & Strategic Planning	Mr. Saghir Ahmed Memon	022-2771311
13.	Director Services	Mr. Qazi Riaz Hassan Qureshi	022-2109073
14.	Resident Auditor	Mr. Sagheer Ahmed Chandio	022-2772285
15.	Director, MIS	Engr. Sayed Muhammad Raza Shah	022-2771275
16.	Director, ICPC	Engr. Saleem Ahmed Memon	022-2772250
17.	Advisor Students' Affairs	Prof. Dr. Tanweer Hussain	022-2772251
18.	Librarian	Mr. Zahid Hussain Sahito	022-2771169
19.	Provost (Hostels)	Prof. Ghulam Abbas Mahar	022-2772299

2. FACULTY OF ARCHITECTURE AND CIVIL ENGINEERING

2.1 Department of Architecture

2.1.1 The Department

The complexity of modern buildings calls for the effective combination of skill and talent in the best interest of Architecture & Environment. The Department of Architecture offers a comprehensive curriculum in a modern field that encompasses City Planning includes environmental consideration for both urban and sub-urban setting. Studies in Architecture are related to design and construction of houses and other building types keeping in view the appearance, comfort, usability, optimization between expenditure, facilities and environmental friendliness.

The Department of Architecture offers a full-time five-year course leading to the degree of "Bachelor of Architecture (B.Arch.)". The syllabus of the subjects is designed in such a way to acquaint the students with basic planning, aesthetics, design and drawing of plans and specification of various buildings. At the same time, some subjects concerning the basic Architectural design including Computer Aided Design (CAD) and socio-economic design are also included in the curriculum. Teachings through lectures in the class rooms are adequately supported by studios and laboratory work.

2.1.2 The Faculty

Chairman of the Department:
Prof. Moazam Ali Pathan
Phone: 022-2772293 /**Ext.:** 3100

Assistant Professors:

Mr. Moazam Ali Pathan
PgD, Pakistan.

Mr. Irfan Ahmed Memon
PgD, Pakistan.

Dr. Sabeen Qureshi
PhD, Malaysia.

Dr. Saima Kalwar
PhD, Malaya

Ms. Raheela Laghari
M.E., Pakistan.

Ms. Shahnila Ansari
M.E., Pakistan.

Lecturers:

Ms. Fareeda Mughari
B.Arch., Pakistan.

Mr. Abdul Waheed Memon
PgD, Pakistan.

Ms. Naheed Rohail
M.E., Pakistan.

Mr. Abdul Salam Talpur
PgD, Pakistan.

Ms. Firdous Parveen
PgD, Pakistan

Studio Architects:

Mr. Jam Zeeshan Ali Korejo
PgD, Pakistan.

Lab. Supervisors:

Ms. Sania Rehman Memon
PgD, Pakistan.

Ms. Sabeen Shah Jilani
PgD, Pakistan.

Ms. Zoya Gul Kaka
B.Arch., Pakistan.

2.1.3 Laboratory Facilities

Thus, the numbers of laboratories have been established in the department, which include;

1. Model Making Lab
2. Computer Graphics Lab
3. Computer Lab
4. Photographic Lab
5. Surveying and Environment Materials Lab

Seminar Hall & Seminar Library have also been established to conduct the seminars and reference facilities in the department. In addition, frequent field visits are organized for the students to keep them abreast with the latest design and architectural practices in the country.

During the 5th / Final Year the students are also given a project/dissertation mostly for a building, in which they are expected to prepare design, drawings and a project report. The degree of B. Arch. is awarded to the students after they have fulfilled all the requirements for the degree including passing of all examinations and tests for practical work.

2.1.4 Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1stSemeste	AR111	Foundation Studio-I	02	04
	AR 112	Visual Communication	02	04
	AR 113	Sociology	02	00
	SS 111	Islamic Studies/Ethics	02	00
	PS 106	Pakistan Studies	02	00
		Total	**10**	**08**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2ndSemester	AR121	Foundation Studio-II	02	04
	AR 122	Building Materials-I	02	00
	AR 123	Model Making	00	03
	CE 135	Surveying	02	01
	EN 101	Functional English	03	00
		Total	**09**	**08**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
3rdSemester	AR 211	Architectural Design-I	02	04
	AR 212	Building Materials-II	02	00
	AR 213	Physical Environmental Studies	02	00
	AR 214	History of Art & Architecture-I	03	00
	AR 215	Computer Aided Design-I	00	02
	CE 250	Statics	02	00
		Total	**11**	**06**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
4thSemester	AR 221	Architectural Design-II	02	04
	AR 222	Building Construction-I	02	00
	AR 223	Building Services-I	03	00
	AR 224	History of Art & Architecture-II	03	00
	AR 225	Computer Aided Design-II	00	02
	AR 226	Structure in Architecture-I	02	00
		Total	**12**	**06**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
5th Semester	AR 311	Architectural Design-III	02	04
	AR 312	Building Construction-II	02	00
	AR 313	Building Services-II	02	00
	AR 314	History of Art & Architecture-III	03	00
	AR 315	Computer Aided Design-III	00	02
	AR 316	Structure in Architecture-II	02	00
		Total	**11**	**06**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
6th Semester	AR 321	Architectural Design-IV	02	04
	AR 322	Working Drawings & Details-I	00	03
	AR 323	Landscape Design	02	01
	AR 324	Muslim Architecture	02	00
	AR325	Theories & Criticism in Architecture	02	00
	AR 326	Structure in Architecture-III	02	00
		Total	**10**	**08**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
7th Semester	AR 411	Architectural Design-V	02	04
	AR 412	Working Drawings & Details-II	00	03
	AR 413	Interior Design	02	01
	AR 414	Architecture in Pakistan	02	00
	AR 415	Building Economics	02	00
	AR 416	Structure in Architecture-IV	02	00
		Total	**10**	**08**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
8th Semester	AR 421	Architectural Design-VI	02	04
	AR 422	Urban Planning & Design	03	00
	AR 423	Energy Efficient Architecture	03	00
	AR 424	Architectural Conservation	02	01
	AR 425	Architectural Research Methods	03	00
		Total	**13**	**05**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
9th Semester	AR 511	Architectural Design-VII	02	04
	AR 512	Research & Development project –I (Thesis Report)	00	05
	AR 513	Sustainable Architecture	03	00
	CE 510	Quantity Surveying & Accounting	03	00
		Total	**08**	**09**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
10th Semester	AR 521	Research & Development Project-II (Thesis Project)	00	10
	AR 522	Disaster Management	02	00
	AR 523	Professional Practice & Management	02	00
		Total	**04**	**10**

2.1.5 Career Opportunities

Plenty of jobs available in government organization and private organizations / firms and a lot of opportunities to start once self-business firm.

2.2 Department of Civil Engineering

2.2.1 The Department

Civil Engineering is the process of directing and controlling natural resources for the use and benefit of humankind through the construction of various structures. It applies engineering practices to the planning and designing, construction, operation and maintenance of structures such as buildings, roads, bridges, railways, industries, airports, irrigation schemes, docks, harbors, dams, flood control systems, water supply, sewerage disposal schemes etc. Thus, civil engineering is the largest and broadest discipline of engineering.

The Department of Civil Engineering is the biggest department of the University in terms of infrastructure, student enrollment and faculty. It provides essential and advanced engineering education according to the requirements of the field. All the classrooms of the department are equipped with audio-visual facilities. The laboratories have the latest equipment and tools. Highly experienced faculty and technical staff are available to supervise the laboratories.

The Department of Civil Engineering has successfully adopted Outcome Based Education (OBE) system to meet the criteria of Pakistan Engineering Council (PEC) as per the Washington Accord. All the class tests, class & field assignments and semester exams are being assessed based on specific course learning objectives associated with each course.

The designed curriculum covers a wide range of various sub-discipline of the department including Structural Engineering, Concrete Technology, Geotechnical Engineering, Foundation Engineering and Design, Irrigation & Drainage Engineering, Transportation Engineering, Environmental Engineering, Construction Engineering, Construction Project Management etc. The courses fulfil the present demand of the construction industry as they are designed by involving the industrial experts. Various subjects require tutorials and laboratory work, for which adequate facilities and equipment are available.

The student-centric approach of the department focuses on outcomes from the individual student by the end of the course. Final year students also discover the various specialization fields through the Final Year Project assigned to them. The Final Year Projects may be specific to a particular branch of Civil Engineering like Structural Engineering, Geotechnical Engineering, Irrigation Engineering, Highway Engineering, Construction Management and Environmental Engineering etc.

Besides, the students go to the field visits of the Civil Engineering projects such as water distribution structures, bridge & building structures, geotechnical works etc. During the summer vacations, the students are involved in various Civil Engineering projects in the form of internship in the organizations such as WAPDA, NESPAK, NHA, Works and Services Department, Irrigation Department, etc. These internships help them to gain practical engineering knowledge. The Survey Camp is conducted which consists of surveying activities such as levelling, traversing and detailing, and also introduces the usage of latest technologies of surveying tools in civil engineering projects.

The Department of Civil Engineering has a well-organized student's-based society with the name of Mehran University Civil Engineers' Society (MUCES). The society is actively engaged in conducting several curriculum & extra curriculum activities such as seminars, workshops, training, short courses, sports events, debates, competitions etc.

The Department of Civil Engineering also offers various postgraduate degrees such as Master of Engineering (M.E.) and Doctor of Philosophy (PhD) in the following fields.

1. Civil Engineering
2. Structural Engineering
3. Geotechnical and Highways Engineering
4. Construction Management

Vision of the Department:
The vision of the Department of Civil Engineering is to become an institution that provides state-of-the-art education to aspiring civil engineering graduates, and to evolve as a research-based solution provider to the civil engineering industry.

Mission of the Program:
The undergraduate program of Department of Civil Engineering aims to develop highly competent professionals, preparing them for entry-level positions in civil engineering, further study in graduate school, life-long learning, and societal leadership, by providing a dynamic learning environment that emphasizes problem-solving skills, teamwork, communication, and leadership skills.

Program Educational Objectives (PEOs):
1. Solve civil engineering problems faced by the industry by utilizing their theoretical, technical, and professional knowledge.
2. Function in team-oriented activities considering the societal, environmental, and economic impacts.
3. Continue professional growth through ethical, moral, and learning attitude.

2.2.2 The Faculty

Chairman of the Department:
Prof. Dr. Rizwan Ali Memon
Phone: 022-2772254-72 /**Ext.:**7100

Professors:

Dr. Tauha Hussain Ali
PhD, Australia.

Dr. Aneel Kumar
PhD, Japan.

Dr. Rizwan Ali Memon
PhD, Pakistan.

Dr. Khalifa Qasim Laghari
PhD, Pakistan.

Dr. Nafees Ahmed Memon
PhD, Romania.

Dr. Ashfaque Ahmed Memon
PhD, Pakistan.

Dr. Agha Faisal Habib
PhD, United Kingdom.

Dr. Zaheer Ahmed Almani
PhD, United Kingdom.

Dr. Fareed Ahmed Memon
PhD, Malaysia.

Dr. Naeem Aziz Memon
PhD, United Kingdom.

Dr. Ashfaque Ahmed Pathan
PhD, Pakistan.

Mr. Arshad Ali Memon
M.E., Pakistan.

Mr. Samar Hussain Rizvi
M.E., Pakistan.

Mr. Azizullah Jamali
M.E., Pakistan.

Mr. Amjad Ali Pathan
M.E., Pakistan.

Mr. Masroor Ali Jatoi
M.E., Pakistan.

Mr. Abdul Raqeeb Memon
M.E., Pakistan.

Lecturers:

Mr. Shabir Hussain Khero
M.E., Malaysia. (On Lien)

Mr. Farhan Qureshi
M.E., Pakistan.

Mr. Ali Murtaza Phull
(On Study Leave Abroad)

Dr. Ali Raza Khoso
PhD, Malaysia.

Mr. Fahad Ali Shaikh
M.E., Pakistan.

Mr. Anees Raja
(On Study Leave Abroad)

Mr. M. Rehan Hakro
M.E., Malaysia.

Mr. Lal Chand
M.E., Pakistan.

Mr. Shankar Lal Meghwar
(On Study Leave Abroad)

Mr. Muhammad Ali
(On Study Leave Abroad)

Mr. Anees Ahmed Vighio
(On Study Leave Abroad)

Mr. Manoj Kumar
M.E., Pakistan.

Mr. Rabinder Kumar
M.E., Malaysia.

Mr. Hafiz Usama Imad
M.E., Pakistan.

Mr. Abdul Qudoos Malano
M.E., Pakistan.

Mr. Izat Ali Sahito
M.E., Pakistan.

Assistant Professors:

Mr. Jawaid Kamal Ansari
M.E., Pakistan.

Mr. Fida Hussain Siddiqui
(On Study Leave Abroad)

2.2.3 Laboratory Facilities

The Department of Civil Engineering has following laboratories. All the laboratories are well equipped with advanced and conventional testing equipment.

1. Soil Mechanics Laboratory
2. Highway Engineering Laboratory
3. Engineering Geology Laboratory
4. Concrete Laboratory
5. Material Testing Laboratory
6. Engineering Mechanics Laboratory
7. Environmental Engineering Laboratory
8. Hydraulics Laboratory
9. Software laboratory
10. Surveying Laboratory

2.2.4 The Courses

	Course Code	Subject	Credit Hours	
			Theory	Practical
First Semester	CE102	Geometrical Drawing	02	01
	CE106	Civil Engineering Materials	03	01
	CE116	Engineering Mechanics	03	01
	FE101	Functional English	03	00
	CS146	Introduction to Computing &Programming	02	01
		Total	**13**	**04**

	Course Code	Subject	Credit Hours	
			Theory	Practical
Second Semester	CE112	Surveying-I	02	01
	MTH108	Applied Calculus	03	00
	SS111/SS104	Islamic Studies / Ethics	02	00
	PS106	Pakistan Studies	02	00
	CE122	Civil Engineering Drawing	02	01
	CE125	Engineering Geology	03	01
		Total	**14**	**03**

	Course Code	Subject	Credit Hours	
			Theory	Practical
Third Semester	CE207	Railways and Waterways Engineering	03	00
	CE212	Mechanics of Solids-I	02	01
	MTH204	Differential Equations, Fourier Series and Laplace	03	00
	CE227	Fluids Mechanics and Hydraulics	03	01
	ENG201	Communication Skills	02	00
	CE222	Theory of Structures	02	00
		Total	**15**	**02**

	Course Code	Subject	Credit Hours	
			Theory	Practical
Fourth Semester	CE241	Applied Hydraulics	03	01
	CE231	Construction Engineering	03	00
	CE251	Mechanics of Solids-II	03	00
	MTH206	Complex Analysis, Statistical Methods and Probability	03	00
	CE202	Surveying-II	03	01
	CE246	Architectural and Town Planning	02	00
		Total	**17**	**02**

	Course Code	Subject	Credit Hours	
			Theory	Practical
Fifth Semester	MTH303	Linear Algebra and Numerical Methods	03	01
	CE306	Structural Analysis	03	00
	CE345	Plain and Reinforced Concrete	03	01
	CE362	Hydrology	03	00
	CE355	Project Management	02	00
	CE366	Geometric Design of Highways and Airports	02	00
		Total	**16**	**02**

	Course Code	Subject	Credit Hours	
			Theory	Practical
Sixth Semester	CE351	Environmental Engineering-I	02	01
	CE326	Soil Mechanics	03	01
	CE337	Reinforced and Pre-Stressed Concrete	03	00
	CE316	Steel Structures	03	00
	ENG301	Technical & Scientific Writing	02	00
	CE341	Quantity Surveying and Estimation	03	00
		Total	**16**	**02**

	Course Code	Subject	Credit Hours	
			Theory	Practical
Seventh Semester	CE406	Structural Design and Drawing	03	01
	CE411	Geotechnical Engineering	03	01
	CE431	Environmental Engineering-II	03	00
	CE422	Professional Ethics	02	00
	CE423	Engineering Economics	02	00
	CE498	Final Year Project (FYP)-I	00	03
		Total	**13**	**05**

	Course Code	Subject	Credit Hours	
			Theory	Practical
Eight Semester	CE426	Foundation Engineering	03	00
	CE443	Irrigation and Drainage Engineering	03	01
	CE438	Construction Planning & Management	03	00
	CE451	Traffic Engineering and Pavement Design	02	01
	CE499	Final Year Project (FYP)-II	00	03
		Total	**11**	**05**

2.2.5 Career Opportunities

The bachelor's in civil engineering program at MUET, Jamshoro provides a clear route to a professional career in the field of Civil Engineering. Our graduates can follow careers in many different fields and organizations related with Civil Engineering Projects and can also set up their own businesses. Typical employment sectors for civil engineers include, consulting firms, contractors, local authorities, public sector departments (Buildings, Highways, Railways, Airports, Irrigation, Water and Power, Ports etc.), non-profit and research organizations.

2.3 Department of City & Regional Planning

2.3.1 The Department

In order to meet the ever-increasing demand for qualified Urban and Regional planners, to provide better and pollution-free living environment to the people, to ensure planned growth, and to control and guide future planning activities in urban and rural areas of the country, a full-time four-year course is offered in the field of City and Regional Planning. The aim of the program is to produce Urban and Regional Planners with the interdisciplinary skill s to meet the demands of rapidly increasing cities which can meet the sustainable development and planning millennium goals.

Keeping in view the baseline curriculum prepared by the National Curriculum Revision Committee constituted by the Higher Education Commission (HEC), the curriculum was revised and updated for 22-Batch and onwards, to bring it in line with local, national and international requirements and to introduce innovation to ensure quality of education and uniformity of curriculum in the Pakistani universities, which is also in accordance with the recommendations of the Pakistan Council of Architects and Town Planners (PCATP).

The curriculum is designed in such a way that it involves a wide spectrum of activities regarding the preparation of master plans and development plans for villages, towns, cities, and regions. To provide the practical knowledge, the study visits of different towns and cities are conducted to collect the primary data about the physical, social and economic aspects of housing, infrastructure, traffic and transportation, slums and katchi-abadies, etc. It also involves analysis, preparation and implementation of proposed policies, programs and plans for improvement of old urban areas and development of new settlements at both urban and regional levels.

On successful completion of the entire requirement for the degree, the students will be awarded the degree of Bachelor of City and Regional Planning (B.CRP). Four batches are admitted in year 2018, 2019, 2020 and 2021 respectively. The department also offers the degree of Masters (M.CRP and Doctor of Philosophy (PhD) in the field of City and Regional Planning.

Objectives of the Department

Following are the main objectives of the Department:

- To provide world-class advanced education knowledge and skills in the field of City and Regional Planning;
- To conduct outstanding technical basis and applied research in the field of City and Regional Planning profession;
- To provide professional in various streams of specializations in City and Regional Planning.

2.3.2 The Faculty

Chairman of the Department:
Prof. Dr. Imtiaz Ahmed Chandio
Phone: +92 (0) 22 2772294 / **Ext.:**7200

Professors:

Dr. Imtiaz Ahmed Chandio
PhD, Malaysia.

Dr. Mir Aftab Hussain Talpur
PhD, Malaysia.

Associate Professors:

Dr. Saima Kalwar
PhD, Malaysia.

Assistant Professors:

Mr. Fahad Ahmed Shaikh
M.CRP., Pakistan.

Dr. Noman Sahito
PhD, China.

Lecturers:

Mr. Naveed Agro
B.CRP., Pakistan.
(On Study Leave)

Dr. Muhammad Yousif Mangi
M.CRP., Pakistan., PhD China

Mr. Ubedullah Soomro
M.CRP., Pakistan.

Mr. Shahbaz Khan
M.CRP., Pakistan.

Lab-Supervisor
Dr. Zulfiqar Ali Lashari
Ph.D., South Korea

2.3.3 Laboratory Facilities

The following laboratory facilities are available in the department:

1. Computer Lab
2. Graphic & Model Making Lab.
3. Photographic Developing & Printing Lab.
4. Surveying Lab.
5. Drawing Studio

2.3.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
First Semester	CRP112	Introduction to Town Planning	03	01
	CRP113	Technical Drawing	02	01
	MATH110	Calculus & Statistical Methods	03	00
	SS111/SS104	Islamic Studies / Ethics	02	00
	PS106	Pakistan Studies	02	00
	ENG101	Functional English	03	00
		Total	**15**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Second Semester	CRP124	History of Cities and Urban Planning	03	00
	CRP125	Planning Theory	02	00
	CRP126	Architectural Design for Planners	02	01
	CRP 127	Model Making	00	02
	CE 110	Surveying-I	03	01
	MTH114	Planning Data Analysis	03	00
		Total	**13**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Third Semester	CRP214	Building Construction	2	1
	CRP215	Transportation Engineering	3	1
	CRP216	Computer Aided Design and Modeling	2	1
	CRP217	Social Town Planning	2	0
	CE201	Surveying-II	3	1
	ENG201	Communication Skills	2	0
		Total	**14**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Fourth Semester	CRP225	Housing	2	0
	CRP226	Transportation Planning	3	1
	CRP227	Urban Design and Landscape Planning	3	1
	CRP228	Site Planning	2	1
	CRP229	Planning Surveys and Data Analysis	2	1
	CRP230	Rural Planning	2	0
		Total	**14**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Fifth Semester	CRP316	Planning of New Towns	2	1
	CRP317	Regional Planning	3	1
	CRP318	Public Participation & Community Development	2	0
	EE314	Environmental Engineering	3	1
	ENG301	Technical and Scientific Writing	2	0
	CS331	Information and Database Management	2	1
		Total	**14**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Sixth Semester	CRP325	Research Methods	3	0
	CRP326	Urban Geography	3	0
	CRP327	Introduction to GIS	2	1
	CRP328	Infrastructure Planning and Management	2	0
	CRP329	Land Use and Building Control	2	0
	EE315	Environmental Planning and Management	3	1
		Total	**15**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Seventh Semester	CRP417	Master Planning-I	3	1
	CRP418	GIS Applications in Planning	2	1
	CRP419	Project Planning and Management	2	1
	CRP420	Professional Planning Practice	2	0
	CRP421	Planning Legislation	2	0
	CRP498	Final Year Project - I	0	03
		Total	**11**	**06**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Eight Semester	CRP 427	Master Planning-II	03	02
	CRP 428	Urban Economics	03	00
	CRP 429	Estate Management	03	00
	CRP 430	Hazards and Disaster Risk Management	02	00
	CRP 499	Final Year Project-II	00	03
		Total	**11**	**05**

2.3.5 Career Opportunities

After qualifying, our graduates can serve the nation as professional Planners in the public sectors such as, Ministry of Planning and Development (Housing and Physical Planning), Ministry of Local Government (Sindh Building Control Authority), Ministry of Communication, Planning Commission of Pakistan, Ministry of Environment, Military Engineering Services (MES) of Pakistan, Private Planning and Development Consultant Firms and nonprofit research organizations.

The department of City & Regional Planning has played a vital role not only in Town Planning Education but also in the development of Urban Research in the Country.

2.4 Institute of Environmental Engineering and Management

2.4.1 The Institute

With increased awareness about environmental issues at the global and national levels, environmental engineering has become a fast-emerging discipline with vast scope for progression in the future. The Institute of Environmental Engineering & Management (IEEM) has been established to create new ideas and find innovative solutions related to local, regional, and global environmental issues. Today, Pakistan stands on the threshold of implementing environmental standards. Environmental Protection Agencies (EPAs) of the five provinces and federal government have been assigned the task to implement environmental standards that will provide a large number of qualified experts in Environmental Engineering. The scope of Environmental Engineer goes beyond the community and regional levels to a global level.

The Bachelor of Engineering (B.E.) program is based on comprehensive theoretical knowledge and thorough practical training supported by field visits and industrial training. The syllabus of the B.E degree program includes a variety of subjects related to the scope of environmental engineering. The Institute of Environmental Engineering & Management (IEEM) faculty members are highly qualified, having PhD and M.E. degrees in the relevant field.

Mission of the Program

Environmental Engineering program imparts high-quality education with the vision of producing engineers to provide innovative solutions to the environmental challenges and nurture personal growth skills as creative and entrepreneurial minds along with professional ethics to have successful career.

Program Educational Objectives (PEOs)

Program educational objectives are based on the needs of the program's constituencies and are linked to student learning outcomes and assessment process. The program needs to demonstrate a well-defined and published program mission which are based on stakeholder's needs. After 5 years of graduation, our students will be able to:

Sr. No.	PEOs
1	Apply engineering knowledge to design, build and improve environmental engineering-based systems to address the technical and socio-economic problems.
2	Perform their professional and societal obligation by promoting public health, safety, and welfare and address the environmental issues through their services and practices.
3	Work effectively as a member or lead multidisciplinary teams to serve the community for professional development and continual improvement.

2.4.2 The Faculty

Director of the Institute:
Dr. Sheeraz Ahmed Memon
Phone: 022-2772253/ **Ext.:**7303

Professors:

Dr. Khan Muhammad Brohi
PhD, Japan.

Dr. Abdul Razaque Sahito
PhD, Pakistan.

Dr. Sheeraz Ahmed Memon
PhD, Korea.

Associate Professor:

Dr. Muhammad Safar Korai
PhD, Pakistan.

Assistant Professors:

Mr. Azizullah Channa
M.E., Pakistan.

Ms. Maryam
M.E., Pakistan.
(On Study Leave)

Lecturers:

Engr. Sajid Hussain Mangi
M.E., Pakistan
(On Study Leave)

Engr. Barkatullah Kandhro
M.E., Pakistan (On Contract)

Engr. Kundan Kumar
M.E., Pakistan.
(On Contract)

2.4.3 Laboratory Facilities

The department is also equipped with the laboratories are listed below, having advanced and latest instruments.

1. Hi-Tech Laboratory
2. Water & Soil Pollution Control Laboratory
3. Solid Waste Management Laboratory
4. Air & Noise Pollution Control Laboratory
5. GIS & Computer Laboratory
6. Thermo Laboratory
7. Microbiology Laboratory




2.4.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	EE101	Introduction to Environmental Engineering	3	0
	CS146	Introduction to Computing and Programming	2	1
	CE137	Surveying	3	1
	ENG101	Functional English	3	0
	EE111	Environmental Physics	3	0
		Total	**14**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	IS111	Islamic Studies/Ethics	2	0
	PS106	Pakistan Studies	2	0
	MTH108	Applied Calculus	3	0
	EE122	Environmental Chemistry	3	1
	Civil Dept.	Fluid Mechanics for Environmental Engineers	3	1
	EE132	Environmental Microbiology	2	1
		Total	**15**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
3rd Semester	EE204	Ecological Management	2	0
	CE277	Engineering Drawing Practices	2	1
	MTH236	Linear Algebra & Analytical Geometry	3	0
	Elec Dept.	Electrical Technology for Environmental	2	1
	MT250	Engineering Materials and Environment	2	0
	EE205	Water Supply Engineering & Treatment	3	1
		Total	**14**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
4th Semester	EE242	Environmental Economics	2	0
	EE272	GIS & Remote Sensing	2	1
	MTH212	Differential Equations & Fourier Series	3	0
	EE292	Computer Aided Design for Environmental	0	1
	Civil Dept.	Soil Mechanics for Environmental Engineers	2	1
	EE234	Wastewater Engineering & Treatment	3	1
		Total	**12**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
5th Semester	ENG320	Technical Report Writing Skills	3	0
	MTH319	Numerical Analysis	3	1
	EE331	Environmental Biotechnology	2	1
	ME391	Applied Thermodynamics	3	1
	MUISTD	Entrepreneurship	2	0
	EE371	Climate Change and Disaster Management	2	0
		Total	**15**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
6th Semester	ME390	Renewable and Emerging Energy Technologies	3	1
	EE313	Solid Waste Engineering & Management	3	1
	EE381	Professional Ethics	2	0
	MTH317	Statistics and Probability	3	0
	EE326	Air and Noise Pollution Control Engineering	3	1
		Total	**14**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
7th Semester	EE494	Natural Resources Management	3	0
	EE414	Modelling of Environmental Systems	3	1
	CE471	Project Planning & Management	3	0
	EE485	Cleaner Production Techniques	2	0
	EE466	Hazardous Waste Risk Assessment & Management	3	0
	EE498	Final Year Project-I	0	3
		Total	**14**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
8th Semester	EE454	Environmental Impact Assessment	3	0
	EE426	Occupational Health, Safety & Environment	3	0
	EE435	Environmental Management System & Standards	2	0
	Civil Dept.	Water Resource Engineering and Management	3	1
	EE405	Community Services	0	0
	EE499	Final Year Project –II	0	3
		Total	**11**	**04**

2.4.5 Career Opportunities

Environmental Engineering undergraduate and postgraduate programs offer you opportunities to work in different aspects of environmental protection. The major areas include:

- Water Supply and Wastewater Engineering and Treatment
- Air Pollution Control and Management
- Solid Waste Engineering and Management
- Hazardous Waste Management
- Storm Water Management
- Health, Safety and Environment (HSE)
- Environmental Impact Assessment (EIA)
- Green Engineering
- Natural resource management
- Public Health and Land Pollution Control
- Climate Change & Disaster Management

Environmental engineers are also leaders in developing, planning, and implementing environmental sustainability principles, including waste reduction, alternative energy, and life-cycle analysis. Within each of these major categories, there are also many sub-categories.

This institute provides opportunities to the students with unique hands-on and pragmatic approaches by arranging internships abroad such as Turkey, China, and Sri Lanka to help students become aware of environmental problems encompassed by the world.

Environmental Engineering provides opportunities for the type of work, for whom you work, and where you work. A career in Environmental Engineering offers a comfortable salary, job security, and considerable personal satisfaction.

3. FACULTY OF ELECTRICAL, ELECTRONICS & COMPUTER SYSTEMS ENGINEERING

3.1 Department of Biomedical Engineering

3.1.1 The Department

Mehran UET has the privilege to establish the Biomedical Engineering Department for the first time in the history of all Public Sector Universities of Pakistan. The program of Biomedical Engineering was started in 2003. Since 2011, the Department of Biomedical Engineering is housed in a separate spacious building with young, dynamic and visionary leadership. It is a progressive educational unit of Mehran UET and serving the nation by producing engineers who have a very versatile scope of studies in the area of Medical Imaging, Biomedical Instrumentation, Diagnostics, Radio and laser surgery, Biotechnology, Nano technology, Computer Science, Electronics, Telemedicine, and other related domains.

Department's Vision Statement

The department of Biomedical Engineering at MUET aims to provide the highest quality learning and research opportunities in the field of Biomedical Engineering. The Department aims to achieve excellence in and explore the engineering principles that can be used to solve the problems in the field of medical and biological sciences.

Program's Mission Statement

To produce quality Biomedical engineers with high intellect and broad vision who can meet current needs and foresee future needs of the human race with regard to medical diagnosis, treatment, prosthesis, and rehabilitation through research and professional practice.

Currently, the Department of Biomedical Engineering is accredited under Outcome Based Education system with the Pakistan Engineering Council. A continuous process for Quality Improvement is in place, involving all stakeholders including academia, government, and industry alike.
Program Educational Objectives (PEOs) of the Bachelor of Biomedical Engineering Program revolve around producing engineers with the capabilities to:

1. Work in a multidisciplinary field at the interface of engineering, medicine, and biology to design sustainable healthcare solutions.
2. Lead as an entrepreneur / a manager to contribute towards knowledge-based economy in the field of healthcare.
3. Independently master new knowledge and technologies, as well as successfully engage in post-graduate studies and research in biomedical engineering and allied fields.

The department has all the necessary infrastructure to support its vibrant academic, research and co-curricular activities, including spacious and airy edifice, seminar library, state-of-the-art laboratory equipment, efficient administrative staff, free internet (both Ethernet and Wi-Fi), and the printing and scanning facilities.

Directorate of Industrial liaison, Office of Research Innovation and Commercialization facilitate our students in their training in the industry, hospitals, and other national / international healthcare institutions, through study visits and internships. Apart from this, the Innovation Entrepreneurship Centre at MUET trains the students to pitch their project ideas before the industry to promote entrepreneurial skills. We are actively involved in guiding the students on their research projects with close interaction of the industry, to have them the right feel of the current issues in the field and to come up without-of-the-box solutions to address the problems of the suffering humanity.

3.1.2 The Faculty

Chairman of the Department:
Dr. Abdul Qadir Ansari
Phone: 022-2772279

Professor:
Dr. Ahsan Ahmad Ursani
PhD, France.

Associate Professors:
Dr. Syed Amjad Ali Shah
PhD, China.

Dr. Abdul Qadir Ansari
PhD, Pakistan.

Dr. M. Aamir Panhwar
PhD, China.

Assistant Professors:
Engr. N.P. Chowdhry
M.S., United Kingdom.

Dr. Muhammad Arif
PhD, United Kingdom
(On Leave Abroad)

Engr. Rabia Chandio
M.E., Pakistan

Dr. Maheen Mahwish Surahio
PhD, China.

Lecturers:
Engr. Syed Faisal Ali
B.E, Pakistan.

Engr. Salman Afridi
M.E., Pakistan.

Engr. Kandeel Fatima
M.E., Pakistan.

3.1.3 Laboratory Facilities

Biomedical Engineering department has the following five well-equipped laboratories:

1. Biomedical Instrumentation lab
2. Biomedical Sciences Laboratory
3. Biomedical Computing Laboratory
4. Biomedical Engineering Laboratory
5. Telemedicine and Research Laboratory
6. Nano-medicine Research Laboratory

3.1.4 The Courses

	Course Code	Name of Course	Credit Hours	
			Theory	Practical
Semester 1	EL101	Basic Electrical Engineering	2	1
	BM102/ MTH107	Basic Biology/ Basic Mathematics	3	0
	CS145	Introduction to Computing	3	1
	BM111	Applied Physics	3	1
	BM121	Applied Chemistry	2	1
		Total	**13**	**4**

	Course Code	Name of Course	Credit Hours	
			Theory	Practical
Semester 2	ES133	Basic Electronics	3	1
	EL126	Electrical Circuits and Systems	3	1
	BM131	Biophysics	3	0
	MTH102	Applied Calculus	3	0
	PS106	Pakistan Studies	2	0
	IS111/ SS104	Islamic Studies / Ethics	2	0
		Total	**16**	**2**

	Course Code	Name of Course	Credit Hours	
			Theory	Practical
Semester 3	BM220	Physiology I	3	1
	ES262	Electronic Circuit Design	3	1
	BM211	Biochemistry	2	1
	BM232	Human Anatomy	3	1
	MTH236	Linear Algebra and Analytical Geometry	3	0
		Total	**14**	**4**

	Course Code	Name of Course	Credit Hours	
			Theory	Practical
Semester 4	MTH224	Differential Equations	3	0
	BM280	Computer Aided Drawing	0	1
	BM241	Physiology II	2	0
	ES285	Electronic Instrumentation	3	1
	ES273	Digital Electronics	3	1
	BM290	Radiation and Environment	2	0
	ENG206	Communication Skills	2	0
		Total	**15**	**3**

	Course Code	Name of Course	Credit Hours	
			Theory	Practical
Semester 5	MT310	Biomaterials	3	1
	BM311	Biomedical Instrumentation I	3	1
	ES352	Microprocessor and Microcontroller	3	1
	MTH315	Statistics and Probability	3	0
	MTH306	Complex Variable and Transforms	3	0
		Total	**15**	**3**

	Course Code	Name of Course	Credit Hours	
			Theory	Practical
Semester 6	TL372	Signals and Systems	3	1
	BM331	Biomedical Instrumentation II	3	0
	MTH336	Numerical Analysis and Computer Applications	3	1
	ENG302	Technical Report Writing and Presentation Skills	2	0
	BM320	Healthcare Information Systems and Hospital Management	2	0
		Total	**13**	**2**

	Course Code	Name of Course	Credit Hours	
			Theory	Practical
Semester 7	BM402	Digital Signal and Image Processing	3	1
	BM411	Biomechanics	3	1
	ES412	Control Systems	3	1
	BM421	Modeling and Simulation	2	1
	BM498	BM Engineering Project-I	0	3
		Total	**11**	**7**

	Course Code	Name of Course	Credit Hours	
			Theory	Practical
Semester 8	BM431	Economics and Healthcare Management	3	0
	BM440	Medical Imaging	3	1
	BM450	Medical and Healthcare Ethics	2	0
	BM460	Emerging Trends in Biomedical Engineering	3	0
	BM499	BM Engineering Project-II	0	3
		Total	**11**	**4**

3.1.5 Career Opportunities

Biomedical engineering is the application of the techniques and principles of engineering for the solution of problems in medicine, healthcare and biology. Biomedical Engineering is a broad and multidisciplinary field that encompasses industry ranging from Pharmaceutics to Genetics, and from Diagnostics to Surgery and Rehabilitation. We produce engineers who can serve as computational medicine designers, prosthetic device designers, biomedical equipment designers, maintenance engineers, sales managers, after-sale service managers, telemedicine solution designers and researchers.

The graduates find their full role within the auspices of state-of-the-art diagnostic centers, hospitals, telemedicine centers, biomedical equipment manufacturers and distributors, drug manufacturers, software development houses, automobile industry, research laboratories and research institutions. In addition to these, a biomedical engineer plays a vital role in regulatory authorities of the government including Drug Regulatory Authority of Pakistan and Pakistan Quality Standards Organization.

There is a growing demand for biomedical engineers both in Pakistan and abroad. Modern hospitals, pharmaceutical companies, biomedical device manufacturers and vendors, Diagnostic Research laboratories, Government, Automobile industry, and even Software Development Companies hire Biomedical Engineers. Biomedical engineering is the design and manufacturing faction of the healthcare industry. Employers look for biomedical engineers to manage hospitals, help develop and use many innovative instruments to diagnose and treat diseases, restore self-reliance and functionality to patients.

Our graduates are serving at national and international organizations of high repute here and abroad such as Pakistan Atomic Energy Commission, National Specialty Alloys Inc. USA, Siemens, Institute of Chemistry, Academia Sinica Taiwan, Almosawiq Al-Arabia SA, Al-Sharq Hospital, Fujairah Hospital Dubai, Al-Noor Hospital Bahrain, Austin Health Group Australia, and many others.

3.2 Department of Computer Systems Engineering

3.2.1 The Department

Computer Systems Engineering is a discipline that integrates fields of Electrical Engineering and Computer Science required developing Computer Systems. Computer Engineers usually have training in Electronic Engineering, Software Design, and Hardware-Software integration instead of only Software Engineering or Electronic Engineering. Computer Engineers are involved in many hardware and software aspects of computing, from the circuit design of individual microprocessors, personal computers, and supercomputers, to latest development of communication system and networks. Therefore, this field of engineering not only focuses on how computer systems work, but also how they integrate into the larger picture.

Usual tasks involving Computer Engineers include writing software and firmware for embedded microcontrollers, designing analogue sensors, designing mixed signal circuit boards, and designing operating systems. Computer Engineers are also suited for robotics research, which relies heavily on using digital systems to control and monitor electrical systems like motors, communications, and wireless sensors. Due to increasing job requirements for engineers, who can concurrently design hardware, software, firmware, and manage all forms of computer, information and management systems used in industry. The department offers a carefully designed multidisciplinary courses and degree programs.

The Department of Computer System Engineering is leaving no stone unturned to achieve its transformation to practice in true spirit the education system based on outcome-based education (OBE) system.

Vision of the Department

To lead in computing education for a smart, secure, and sustainable future.

Mission of the Program

The mission of the department of Computer Systems Engineering is to impart world class education to computer engineers, enabling them to become successful in their professional career and lifelong learning by exhibiting moral and ethical values, thereby becoming a useful part of the society and contributing positively to the socio-economic growth of the country.

Program Educational Objectives (PEOs)

The program educational objectives (PEOs) are prepared by the OBE implementation committee for outcome-based education implementation and are approved through the Board of Studies, Board of Faculty and Academic Council. The PEOs are prepared on the basis of stakeholders' needs and linked with twelve program learning outcomes. Three PEOs have been finalized after thorough deliberation and comprehensive meetings.

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1. To produce graduates who performs professional based on the acquired computer engineering knowledge and analytical skills with continual improvement.
2. To produce graduates who ensures rationalism and ethics in a multicultural, diversified environment.
3. To prepare graduates who is a team player and capable to demonstrate communication and management skills with an approach towards problem solving.

The twelve graduate attributes provided by the PEC as per Manual of Accreditation 2014 have been adopted by the Department of Computer Systems Engineering (CSE) MUET Jamshoro as the Program Learning Outcomes (PLOs) for its bachelor's in CSE Program. It is ensured that these PLOs are achieved by respective CLOs of CSE curriculum as assessed through both direct and indirect methods. The curriculum has also been updated and CLOs for each course is designed along with its difficulty level as per Blooms Taxonomy, i.e., cognitive, affective and psychomotor.

3.2.2 The Faculty

Chairman of the Department.
Dr. Shahnawaz Talpur,
Associate Professor,
Phone: 92- 22-2772276-22-2772250-73 / **Ext.:** 4202

Meritorious Professor:
Dr. Mukhtiar Ali Unar
PhD, United Kingdom.

Professor Emeritus:
Dr. A. Q. K. Rajput
PhD, United States of America.

Professor:
Dr. T.J. Saifullah Khanzada
PhD, Germany.
(On Lien: Ex-Pakistan)

Associate Professors:
Dr. Sheeraz Memon
PhD, Australia.
(On Lien: Ex-Pakistan)

Dr. Shahnawaz Talpur
PhD, China.

Dr. M. Moazzam Jawaid
PhD, United Kingdom.

Dr. Sanam Narejo
PhD, Italy.

Dr. Sammer Zai
PhD, South Korea.

Dr. M. Ahsan Ansari
PhD, South Korea.

Dr. Bushra Naz
PhD, China.

Assistant Professors:
Mr. Arbab Ali Samejo
M.E., Pakistan.

Dr. Adnan Ashraf
PhD, Pakistan

Ms. Zartasha Baloch
M.E., Pakistan.

Mr. Rizwan Badar Baloch
M.E., Pakistan.

Dr. Irfan Ali Bhacho
PhD, South Korea.

Ali Asghar Manjotho,
PhD China (Under Process)

Lecturers:
Mr. Salahuddin Jokhio
M.E., Pakistan.
(On Study Leave)

Mr. Fawad Ali Mangi
M.E., Pakistan.
(On Study Leave)

Mr. Shakeel A. Jokhio
M.E., Pakistan.

Ms. Anum Memon
M.E., Pakistan.

Ms. Haleema Memon
M.E., Pakistan.

Ms. Madeha Memon
M.E., Pakistan.

Ms. Sofia Hajano
M.E., Pakistan.

Dr. Sorath Hansrajani
PhD, Italy.

3.2.3 Laboratory Facilities

Following state-of-the-art laboratories are available for the students where hands-on experiences provided. These laboratories provide high speed internet services in centralized environment.

1. Computing Lab-I
2. Computing Lab-II
3. Microprocessor Lab
4. Communication Lab
5. Advance Software Engineering & Research Lab
6. Multimedia and Visual Design Studio Lab
7. Data Management and Internet Lab
8. Software Development Lab

3.2.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	MTH-108	Applied Calculus	3	0
	CS-111	Information and Communication Technologies	2	1
	CS-151	Computer Programming	3	1
	ENG-101	Functional English	3	0
	EL-101	Basic Electrical Engineering	3	1
		Total	**14**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	MTH-112	Linear Algebra and Analytical Geometry	3	0
	EL-103	Electrical Circuit Analysis	3	1
	CS-153	Object Oriented Programming	3	1
	IS-111/SS-104	Islamic Studies/ Ethics	2	0
	PS-106	Pakistan Studies	2	0
		Total	**13**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
3rd Semester	CS-211	Digital Logic and Design	3	1
	ENG-201	Communication Skills	2	0
	ES-231	Electronic Circuits and Devices	3	1
	CS-221	Discrete Structures	2	0
	MTH-224	Differential Equations	3	0
		Total	**13**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
4th Semester	TL-231	Signals And Systems	3	1
	MTH-226	Fourier Series and Transforms	2	0
	CS-251	Data Structures and Algorithms	3	1
	CS-201	Computer Architecture and Assembly Programming	3	1
	IND-202	Engineering Economics and Project Management	3	0
		Total	**14**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
5th Semester	CS-311	Microprocessors and Interfacing	3	1
	CS-321	Computer Networks	3	1
	CS-353	Database Management System	3	1
	MTH-311	Statistic and Probability	3	0
	CS-302	Operating Systems	3	1
		Total	**15**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
6th Semester	ENG-301	Technical and Scientific Writing	2	0
	CS-373	Web Engineering	3	1
	CS-331	Software Engineering	3	0
	ES-316	Embedded Systems	2	1
	CS-363	Digital Image Processing	3	1
		Total	**13**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
7th Semester		CEDE-I	3	0
	TL-376	System and Network Security	2	0
	CS-431	Mobile & Wireless Communication	3	1
	CS-452	Artificial Intelligence	3	1
	ENT-421	Entrepreneurship	2	0
	CS-498	Final Year Project-I	0	3
		Total	**13**	**05**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
8th Semester	CS-461	Data Science and Analytics	3	1
		MDEE-I	2	1
	CS-471	Human Computer Interaction	2	0
	MGT-426	Organizational Behavior	2	0
	CS-499	Final Year Project	0	3
		Total	**09**	**05**

Computer Engineering Depth Electives (CEDE)

1. **(CS-481)** Internet of Things
2. **(CS-485)** Cloud and Distributed Computing
3. **(CS-482)** Systems Programming

Multi-Disciplinary Engineering Electives (MDEE)

1. **(CS-491)** Block chain Technologies and Applications
2. **(CS-492)** Neural Networks and Fuzzy logic
3. **(CS-493)** Mobile Application/Game Development
4. **(CS-494)** Data Warehousing and Big Data

CQI Mechanisms

The procedures for reviewing and revising the program conduct and attainment of PEOs, PLOs and CLOs and to ensure the correct actions for continuous quality improvement are performed by different committees. **Departmental Management Review Committee (DMRC)** and **Curriculum Revision Committee (CRC)** are responsible to design, update and revise the curriculum of the Department of Computer Systems Engineering, from time to time depending on need of industry and suggestions given by stakeholders. The establishments and revisions are then approved through Board of Studies, **Board of Faculty and Academic Council. Industrial Liaison Committee (ILC)**

is responsible to look after matters related to student and industry collaborations, such as internships, study visits, obtaining feedback from alumni/industry stakeholders, communicating job opportunities for graduating students, managing job recruitment in industries and other related activities. **Final Year Project Committee (FYPC)** is responsible to facilitate students for creating final year project groups, planning project presentations in different phases, and maintaining, managing theses records and other final year project related activities. **Industrial Advisory Board (IAB)** is responsible to facilitate departmental coordination with industry in order to prepare graduates that are ready for the industry.

3.2.5 Career Opportunities

The computerization of most facets of modern business and industry, together with the great demand for technical manpower creates a multitude of possibilities. As a career option that can allow an individual to be involved in the creation and implementation of a Computer System, Computer Systems Engineers are professionals who are actively engaged in the process of matching current technology with the needs of a company. As part of this task, the Computer Systems Engineer engages in the evaluation and installation of software, hardware, and other types of support equipment into a workable network that supports a variety of functions within a corporation. The Computer Systems Engineer may function as an employee of the company, a representative of a computer components and hardware, or as an independent consultant. Moreover, the computer system engineer has a wide range of job opportunities available, including electronic, telecommunication and software engineering fields.

The Computer Systems Engineer finds employment in a wide variety of computerized environments such as hardware, software, networking, research and development, process or information control systems or a combination of the above mentioned. The engineer might specialize further in any one of these chosen fields. Responsibilities may include maintenance or optimization of such environments. Additional functions could include the design, development, and implementation of additional or new systems, liaison with other departments such as management, production and instrumentation as well as with clients is an important aspect of his job. The dedicated Computer Systems Engineer may seek a senior post such as filling the post of System Administrator, Lead System or Project Manager.

3.3 Department of Electrical Engineering

3.3.1 The Department

Electrical Engineering is a branch of Engineering concerned with the study and application of electricity, electronics and electromagnetism. It also deals with the large-scale electrical systems such as power generation, transmission, distribution and utilization of electrical energy.

The department of Electrical Engineering is one of the oldest and prestigious department of the University supported and equipped with highly qualified faculty and technical staff. The department has 27 full-time faculty members. Several faculty members have won prestigious awards for their teaching and research work.

Our department labs serve not only undergraduate and postgraduate students but they also provide services to the public and private sectors like training, equipment testing, calibration and consultancy to academia & industry. Besides academic activities, the department's faculty and students are involved in research and development activities in collaboration with industries.

The degree conferred to the undergraduate students is based on successful completion of four-year degree program. The postgraduate students receive M.E. degree after successful completion of 18-months course and research work. Currently490undergraduates59, postgraduate and 20 PhD students are enrolled in the department.

The undergraduate and postgraduate students are drawn from across the country and abroad. The undergraduate program emphasizes teaching Electrical Engineering fundamentals and applications as well as advanced engineering studies, enabling young graduates to work in industry or pursue higher education with great confidence.

3.3.2 The Faculty

Chairman of the Department:
Prof. Dr. Ashfaque Ahmed Hashmani
Phone:022-2771351

Professors:

Dr. Muhammad Aslam Uqaili
PhD, United Kingdom.

Dr. Ashfaque Ahmed Hashmani
PhD, Germany.

Dr. Abdul Sattar Larik
PhD, Pakistan.

Dr. Zubair Ahmed Memon
PhD, Pakistan.

Dr. Syed Asif Ali Shah
PhD, Austria.

Dr. Mukhtiar Ahmed Mahar
PhD, Pakistan.

Dr. Ali Asghar Memon
Ph.D. United Kingdom

Associate Professors:

Dr. Amir Mahmood Soomro
PhD, China.

Dr. Faheemullah Shaikh
PhD, China.

Dr. Mahesh Kumar Rathi
PhD, Malaysia.

Dr. Anwar Ahmed Memon
PhD, Pakistan.

Dr. Abdul Hakeem Memon
PhD, China.

Assistant Professors:

Mr. Noor Nabi Shaikh
B.E, Pakistan.

Mrs. Mokhi Maan Chang
M.E., Pakistan.

Mr. Muhammad Rashid Memon
M.E., Pakistan.

Mr. Mansoor Ahmed Soomro
M.E., Pakistan (On Study Leave)

Mr. Abdul Jabbar Memon
M.E., Pakistan.

Mr. Shoaib Ahmed Khatri
M.E., Pakistan.
(On Study Leave)

Mr. Shafi Muhammad Jiskani
M.E., Pakistan.

Lecturers:

Mr. Abdul Latif Samoon
M.E., Pakistan.

Dr. Zohaib Ahmed Leghari
PhD, Malaysia.

Mr. Faheem Shafique Channar
M.E., Pakistan.

Mr. Shoaib Shaikh
M.E., Pakistan.

Mr. Mustafa Memon
M.E., Pakistan.

3.3.3 Laboratory Facilities

It possesses state of the art laboratories and equipped with latest equipment up to mark for the electrical engineering program such as:

- Power System Lab
- Power Electronics Lab
- Electrical Machines Lab
- High Voltage Engineering Lab
- Clean Energy Lab
- Control and Automation Lab
- Electrical Circuit &Measurement Lab
- Equipment and Training Lab
- Applied Electricity Lab
- Communication Lab
- Computer Lab
- Advance Computer Lab
- Electrical Workshop Lab
- Electrical Power Transmission & Distribution Lab

3.3.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	EL-111	Electrical Workshop Practice	0	1
	EL-112	Applied Physics	3	1
	EL-113	Linear Circuit Analysis	3	1
	CS-104	Introduction to Computing and Programming	3	1
	ENG-101	Functional English	3	0
	MTH-102	Applied Calculus	3	0
		Total	**15**	**4**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	EL-122	Electrical Network Analysis	3	1
	CE-141	Applied Mechanics	3	1
	MTH-112	Linear Algebra and Analytical Geometry	3	0
	PS-106	Pakistan Studies	2	0
	IS-111/SS-104	Islamic Studies / Ethics	2	0
	ENG-102	Communication Skills	2	0
	EL-127	Engineering Drawing	0	1
		Total	**15**	**3**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
3rd Semester	EL-211	Electronic Devices & Circuits	3	1
	EL-214	Electrical Machines	3	1
	EL-215	Theory of EMF	3	0
	MTH-212	Differential Equations and Fourier series	3	0
	ME-271	Applied Thermodynamics	3	0
		Total	**15**	**2**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
4th Semester	EL-223	Applied Electronics	2	1
	EL-224	Digital Logic Design	3	1
	ES-264	Introduction to Embedded Systems	3	1
	ENG-304	Technical and Scientific Writing	2	0
	MTH-213	Complex Variables & Transforms	3	0
		Total	**13**	**3**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
5th Semester	EL-313	Instrumentation & Measurement	3	1
	EL-314	Power Generation Systems	3	0
	TL-311	Communication Systems	3	1
	MTH-336	Numerical Analysis & Computer Applications	3	1
	ES-266	Signals & Systems	3	1
		Total	**15**	**4**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
6th Semester	EL-322	Advanced Electrical Machines	3	1
	EL-323	Electrical Power Transmission	3	1
	EL-325	Power Economics & Management	3	0
	ES-325	Linear Control Systems	3	1
	MTH-311	Statistics and Probability	3	0
		Total	**15**	**3**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
7th Semester	EL-416	Power System Analysis	3	1
	EL-415	Power Electronics	3	1
	SS-416	Professional Ethics	3	0
	EL-498	Senior Design Project	0	3
		Total	**9**	**5**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
8th Semester	EL-423	Power System Protection	3	1
	EL-424	High Voltage Engineering	3	1
	SS-425	Power Distribution & Utilization	3	1
	EL-499	Senior Design Project	0	3
		Total	**9**	**6**

3.3.5 Career Opportunities

Electrical engineering is a field of engineering that generally deals with the study and application of electricity, electronics and electromagnetism. Electrical engineering is an amalgamation of what is now called electrical, electronics, communication, instrumentation and computer engineering. The well recognized branches of electrical engineering are power & energy, communications, robotics, electronics and control systems. In broader sense, this field covers a wide range of sub-disciplines including those that deal with power& energy, digital electronics, analogue electronics, artificial intelligence, control systems, electronics, signal processing and telecommunications. Overlapping of this field with computer has opened up the door to a career distribution in almost every industry. Following are the few companies and institutions in which the electrical graduates can find job.

1. WAPDA
2. Fertilizer Industries
3. Chemical Industries
4. Textile Industries
5. Pharmaceutical Companies
6. Mechanical & Automobile
7. K-Electric
8. Pakistan Atomic Energy Commission (PAEC)
9. Oil & Gas Companies
10. Research Institutes
11. Lucky Cement Factory
12. Al Rahim Textile Industries
13. KAD Consultants Electrical & Solar System Engineers
14. Dawlance United Refrigeration Industries Ltd.
15. Civil Aviation Authority
16. Johnson & Philips Pakistan Ltd
17. Tuwairqi Steel Mills Ltd.
18. National Transmission and Dispatch Company (NTDC) Ltd.
19. Philip Morris Pakistan Ltd.
20. Technology Links Pvt. Ltd
21. National Electric Power Regulatory Authority (NEPRA)
22. Distribution companies (HESCO, IESCO, PESCO, QUESCO etc.)
23. Sugar Industries
24. Karachi Port Trust (KPT)
25. Environmental Network International (ENI)

3.4 Department of Electronics Engineering

3.4.1 The Department

Electronic Engineering is an increasingly important engineering discipline that significantly affects the other disciplines of engineering. It is in great demand in both developed and developing nations. Continual advances in electronic engineering in the areas of materials, processes, devices, and circuits have been leading to rapid advances, in the existing applications of engineering as well as in the emergence of new applications. To harness the full potential of electronic engineering developments and further advance the state of electronic technology, it is important to have strong programs to educate and train individuals in this key discipline of engineering.

Electronic Engineering artifacts play major role in the evolution of mankind and culture. Today, the Electronic Engineering profession and the education of engineers are challenged by the rapidly changing nature of those engineering systems which determine what is meant by 'modern technology'. The advent of Microprocessor Technology has probably made Electronic Engineering the exemplary technology of this century, along with emergence of new species, with higher levels of integration. The existing and potential uses and applications of Electronics are multitudinous. Indeed, it is difficult to point to any industrial or commercial area which may not eventually be affected by this technology.
The Department of Electronic Engineering offers degrees at undergraduate and postgraduate level equally. It offers:

- B.E. (Electronic Engineering)
- M.E. (Electronic System Engineering) under the umbrella of Institute of Information& Communication Technologies (IICT).
- PhD (Electronic Engineering) under the umbrella of Institute of Information& Communication Technologies (IICT).

It fulfills the more acute need of the development of the country by producing more qualified Engineers at undergraduate & postgraduate levels. The programs offered provide technical manpower for the development and production of the Electronic Engineering in the country to provide qualified human resources as engineers and technology experts to develop indigenous capability of planning, designing and executing various projects in Electronic Engineering.

The field of Electronic Engineering encompasses the knowledge of electronic circuits & devices and their applications. The students learn variety of subjects of diverse fields including, Integrated Electronics, Measurements and Instrumentation, Digital Electronics, Power Electronics, Control Systems, Imbedded Systems Design, Optoelectronics, Digital Signal Processing, FPGA Based Digital Design, Electromagnetic Fields, Computer Communication & Networking, Mechatronic Systems and Applications, Artificial Intelligence etc.

The department has played major role in sending undergraduate and postgraduate students abroad (Europe and USA) on scholarships and short visits on Global-UGRAD Pakistan exchange Program

Frequent visits to industries are also organized by the department to acquaint students with practical environment. Specifically, internship program is launched in collaboration with local industry during summer break for third year and final year students. In addition to that, students are also encouraged to participate in Seminars, Conferences and Software Competitions, such as IEEEP student seminar, A.Q. Khan Software at national level software competition held annually on and around campus. The department has seminar library named after the late Professor M.D. Makhdoom.

Mission of the Department
To produce Quality Electronic engineers with high intellect and broad vision who can meet current needs and foresee future needs of the nation in the field of electronic by serving research and professional practice.

Program Educational Objectives (PEOs)

The program educational objectives (PEOs) were prepared by the OBE implementation committee for outcome-based education implementation and approved through the Departmental Board of Studies (BoS), Board of Faculty (BoF) and Academic Council (AC). The PEOs were prepared on the basis of stakeholders needs and linked with twelve PLOs. The PEOs of B.E. Electronic Engineering degree program are:

1. Apply in-depth electronic engineering knowledge and analytical skills to initiate innovative solutions for the society
2. Quest for learning, establishing collaborations and engaging in continuous professional development in the field of Electronics by carrying research and adopting professional practices.
3. Adaptive in multidiscipline and multicultural environment and work effectively as a team lead or team member possessing strong soft skills and high moral ethics.

3.4.2 The Faculty

Chairperson of the Department:
Prof. Dr. Arbab Nighat Kalhoro
Phone: +92-22-2771334, +92-22-2772250-70 (Ext. 4100)

Emeritus Professor:
Dr. B.S. Chowdhry
Ph.D. (UK)

Professors
Dr. Wajiha Shah
PhD. (Austria)

Dr. Arbab Nighat Kalhoro
PhD. (China)
Chairperson

Dr. Farida Memon
PhD. (Pakistan)

Dr. Attiya Baqai
PhD. (Pakistan)

Associate Professors:
Dr. Tayab Din Memon
PhD. (Australia)
(On Ex-Pakistan Leave)

Dr. Irfan Ahmed Halepoto
PhD. (Pakistan)

Assistant Professors:
Engr. Tufail Ahmed Waseer
M.E., (Pakistan)

Dr. Khalil-ur-Rehman Dayo
PhD. (Pakistan)

Engr. Mehboob Khuwaja
M.E. (Pakistan)

Dr. Kehkashan Fahim
PhD. (Pakistan)

Engr. Kamran Kazi
M.E., (Pakistan)

Engr. Saba Baloch
M.E., (Pakistan)
On Study Leave

Engr. Yasmeen Naz Panhwar
M.E. (Pakistan)

Engr. Khuhed Memon
M.Sc. (Singapore)
On Study Leave

Engr. M. Zaigham Abas Shah
M.Sc. (UK)
On Study Leave

Engr. Aamir Ali Patoli
M.E. (Pakistan)

Engr. Sara Qadeer Rajput
M.E. (Pakistan)

Engr. Mansoor Ali Teevno
M.E. (Pakistan)
On Study Leave

Dr. Shoaib Rehman Soomro
PhD. (Istanbul)
On Study Leave

Lecturers:
Engr. Qurban Ali Memon
M.E. (Pakistan)

Engr. Qudsia Memon
M.E. (Pakistan)

Engr. Komal Khuwaja
M.E. (Pakistan)
On Study Leave

Engr. Bharat Lal
M.E. (Pakistan)
On Study Leave

3.4.3 Laboratory Facilities:

The courses taught are regularly updated to keep abreast of new knowledge and development. The students also undertake a project during their final year, which helps them to enhance their capabilities as young design engineers. The department is also equipped with state-of-the-art laboratories such as:

- Analog Electronics Laboratory
- Digital System Design Laboratory
- Communication Systems Laboratory
- Computing Laboratory
- Modeling & Simulation Laboratory
- Power Electronics & Drives Laboratory
- Research Laboratory
- Instrumentation &Control Laboratory
- Electronic Design Automation Laboratory (IICT Building)
- Project Laboratory-I
- Project Laboratory-II (IICT Building)

These laboratories are well equipped with latest equipment ranging from basic electronic devices, simulators and trainers to more advanced embedded system trainers. Excellent course work and practical experience provide ample job opportunities to our graduates in both public and private sector organizations, national & multinational companies.

3.4.4 Courses

	Course Code	Name of Subject	Credit Hour	
			Theory	Practical
1st Semester	ENG-111	Functional English	3	0
	MTH- 108	Applied Calculus	3	0
	CS- 150	Introduction to Computing	2	1
	EL- 116	Applied Physics	3	1
	SS -125	Professional Ethics	2	0
	ES-102	Electronics Workshop	0	1
		Total	**13**	**3**

	Course Code	Name of Subject	Credit Hour	
			Theory	Practical
2nd Semester	MTH- 112	Linear Algebra & Analytical Geometry	3	0
	CS-113	Computer Programming	2	1
	ES-112	Basic Electronics	3	1
	EL- 107	Electrical Circuits	3	1
	PS- 106	Pakistan Studies	2	0
	SS- 111	Islamic Studies/Ethics	2	0
		Total	**15**	**3**

	Course Code	Name of Subject	Credit Hour	
			Theory	Practical
3rd Semester	ES-203	Electronic Circuit Design	3	1
	ES-225	Digital Electronics	3	1
	ES-223	Measurements & Instrumentation	3	1
	MTH- 212	Differential Equations & Fourier Series	3	0
	INM-291	Engineering Management	2	0
	CS- 215	Computer Aided Engineering Design	0	1
		Total	**14**	**4**

4th Semester	Course Code	Name of Subject	Credit Hour	
			Theory	Practical
	ES-243	Electromagnetic Fields	3	0
	ES-253	Integrated Electronics	3	1
	EL-202	Electrical Machines	2	1
	MTH- 213	Complex Variables & Transforms	3	0
	ENG-201	Communication Skills	2	0
		Total	**13**	**2**

5th Semester	Course Code	Name of Subject	Credit Hour	
			Theory	Practical
	ES-304	Signals & Systems	3	1
	ES-314	Introduction to Embedded Systems	3	1
	SS-338	Sociology for Engineers	2	0
	ES-319	Power Electronics	3	1
	MTH- 310	Numerical Methods	3	1
		Total	**14**	**4**

6th Semester	Course Code	Name of Subject	Credit Hour	
			Theory	Practical
	ES- 385	Communication Systems	3	1
	ES-353	Control Systems	3	1
	ES-324	Probability and Random Signals	3	0
	ES-373	FPGA-Based Digital Design	3	1
	ES- 397	Optoelectronics	2	1
		Total	**14**	**4**

7th Semester	Course Code	Name of Subject	Credit Hour	
			Theory	Practical
	TL- 416	Computer Communication & Networking	3	1
	ES-413	Digital Control System	3	1
	ES-423	Embedded Systems Design	3	1
	ENG-401	Technical Report Writing & Presentation Skills	2	0
	ES-498	Electronic Engineering Project-1	0	3
		Total	**11**	**6**

8th Semester	Course Code	Name of Subject	Credit Hour	
			Theory	Practical
	SS-411	Entrepreneurship	3	0
	ES-451	Mechatronics Systems & Applications	3	0
	CS- 490	Artificial Intelligence	3	1
	ES-433	Digital Signal Processing	3	1
	ES-499	Electronic Engineering Project-2	0	3
		Total	**12**	**5**

3.4.5 Career Opportunities

Electronic Engineering Department works in strong collaboration with Directorate of Student Affairs along with the student societies of similar scope for career counseling of graduating students. The emphasis is on the effective placement of students and graduates in the industry along with counseling sessions, which provide career advice to the students. The Department organizes different seminars as "Industrial Advisory Board (IAB) experts - student interactive sessions with students" in routine.

Electronics Engineering is a rapidly expanding field with numerous job opportunities. It is a branch of engineering concerned with electronic circuits, devices, and the equipment and systems that employ them. The area of Electronic Engineering is so large that it encompasses a number of more particular electronic engineering fields such as Digital Electronics, Control systems, Analogue Electronics, Embedded Systems, and Power Electronics.

For those interested in pursuing a career in Electronics Engineering, there are numerous opportunities available. After completing their degree, candidates can easily find employment as an Electronic Engineer in some of the top industries/sectors as listed below:

- Engineering Firms.
- Consulting Firms.
- Teaching.
- Research and Development
- Automotive Industry.
- Data communication.
- Oil and Gas industry.
- Technical publishing.
- Logistics.
- IT.
- Power Generation Industry etc.

3.5 Department of Software Engineering

3.5.1 The Department

The Department of Software Engineering is home to research and academic units that address issues and recent advances in Software Engineering. The department provides research areas and cutting-edge facilities in Software engineering. The Goal has been, and continues to be, to provide a high degree program in Software Engineering, that prepares students for lifelong learning as they take on professional careers in computing. Software Engineering program enables to gain a thorough understanding of the role of IT in enterprise and how information systems impact on business and organizational processes.

The department offers a range of courses that teach the fundamentals of programming to advanced topics in computing such as software testing and software architecture and design etc. The Department of Software Engineering has completed its transformation to newly advised education system based on outcome-based education (OBE). The Mission of the department is defined in line with the University's vision and mission. The PEOs have been finalized after thorough deliberation and comprehensive meetings. The program has adapted to twelve PLOs in accordance with PEC guidelines. The curriculum has been updated and CLOs for each course are designed along with its difficulty level as per Blooms taxonomy, i.e., Cognitive, Affective and Psychomotor.

3.5.2 Vision of the department

To become the center of excellence and the aspiration in the discipline of software engineering by producing the highly skilled professionals, who with their analytical capabilities and proficiencies apply the technical knowledge for the socio-economic development.

3.5.3 Mission of the department

To provide technically sound ambiance of learning and realizing the frequently changing traits of software industry to pursue sustainable socio-economic growth with the sense of ethics, professionalism and leadership to serve community and humanity at large.

3.5.4 Program Educational Objectives (PEOs)

The Program Educational Objectives (PEOs) have been prepared with the suggestions of Industry Advisory Board (IAB) and have been approved through statuary bodies DBoS, BoF and AC respectively. The PEOs of B.E. Software Engineering degree program are given below.

A Software Engineering Graduate:

PEO 1: Performs his/her professional roles in Software industry and related fields.
PEO 2: Adheres to professional responsibilities in multi-cultural environment with continual improvement.
PEO 3: Works effectively as a team lead or a team member in challenging ventures.
PEO 4: Communicates technical and managerial information efficiently in oral and written forms.

3.5.5 The Faculty

Chairman of the Department:
Prof. Dr. Naeem Ahmed Mahoto
Ph: 022-2772255Ext:6900

Professors:

Dr. Sania Bhatti
PhD. United Kingdom

Dr. Qasim Ali Arain
PhD. China

Associate Professors:

Dr. Naeem Ahmed Mahoto
PhD. Italy

Dr. Mohsin Ali Memon
PhD. Japan

Dr. Isma Farah Siddiqui
PhD. South Korea

Assistant Professors:

Mr. Din Muhammad Sangrasi
(On study leave)
M.E. Pakistan

Mr. Salahuddin Sadar
M.E. Pakistan

Ms. Amirita
M.E. Pakistan

Dr. Areej Fatemah
PhD. Pakistan

Dr. S. M. Shehram Shah
PhD, Australia

Mr. Zahid Hussain Khaskheli
(On study leave)
M.E. Pakistan

Ms. Hira Nouman
M.E. Pakistan

Ms. Shafia Qadeer Memon
M.E. Pakistan

Ms. Memoona Sami
M.E. Pakistan

Mr. Junaid Ahmed Baloch
M.E. Pakistan

Lecturers:

Ms. Anoud Shaikh
M.E. Pakistan

Mr. Zubair Sangi
M.E. Pakistan

Mr. Vijdan Khalique
(On study leave)
M.E. Pakistan

Ms. Rabeea Jaffari
(On Study leave)
M.E. Pakistan

Ms. Mariam Jawaid
M.E. Pakistan

Ms. Rabia Iftikhar
M.E. Pakistan

Ms. Naz Memon
(Contract)
M.E. Pakistan

Mr. Naveen Kumar
(Contract)
M.E. Pakistan

Mr. Mansoor Samo
(Contract)
M.E. Pakistan

Ms. Maqsood Khatoom
(Contract)
M.E. Pakistan

Ms. Hina Ali
(Contract)
M.E. Pakistan

3.5.6 Laboratory Facilities

To meet the latest treads in software and hardware technology the department has 6 well – resources IT laboratories where students are skilled to meet the future needs of the technology.

1. Software Quality Assurance & Testing Laboratory.
2. Visual Informatics and Image Processing Laboratory.
3. Data Warehousing and Management Laboratory.
4. 3-DModeling and Visualization Laboratory.
5. Software Research and Development Laboratory.
6. Parallel Processing and Cluster Computing Laboratory.

The maximum class for laboratory practical is also constituted in accordance with the optimum standards set by PEC and HEC. The Department of Software Engineering has a total of 6 labs, all of which are equipped with 50 thick and thin clients altogether. All such systems are equipped with the latest engineering software such as MATLAB, ORACLE, NETBEANS and DREAMWEAVER etc. The laboratory rooms are spacious, equipped with air conditioners and safety/health standards to accommodate 50 students at a time with 1:1 student and PC ratio.

3.5.7 Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	MTH108	Applied Calculus	3	0
	SW112	Programming Fundamentals	3	1
	SW113	Introduction to Info. & Comm. Technologies	2	1
	ENG111	Functional English	3	0
	EL119	Applied Physics	3	0
		Total	**14**	**2**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	SW121	Object Oriented Programming	3	1
	SW123	Professional Practices	3	0
	MTH112	Linear Algebra & Analytical Geometry	3	0
	SW124	Introduction to Software Engineering	3	0
	PS106	Pakistan studies	2	0
	IS111/ SS104	Islamic Studies / Ethics	2	0
		Total	**16**	**1**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
3rd Semester	SW212	Data Structures & Algorithms	3	1
	SW215	Database Systems	3	1
	SW216	Software Requirements engineering	3	0
	SW211	Software Economics & Management	3	0
	SW217	Operations Research	3	0
		Total	**15**	**2**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
4th Semester	SW225	Operating Systems	3	1
	SW226	Computer Networks	3	1
	SW227	Software design & architecture	2	1
	SW228	Data Warehousing	3	0
	ENT121	Introduction to Entrepreneurship and creativity	3	0
		Total	**14**	**3**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
5th Semester	SW315	Software Construction and Development	2	1
	MTH317	Statistics & Probability	3	0
	SW316	Information Security	3	0
	SW317	Human computer Interaction	3	0
	SW318	Agent based Intelligent Systems	3	0
	ENG311	Communication and presentation Skills	3	0
		Total	**17**	**1**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
6th Semester	SW322	Software Project Management	3	0
	SW325	Discrete Structures	3	0
	ENG319	Technical & business Writing	3	0
	SW326	Data Science and Analytics	3	1
	SW327	Mobile Application Development	3	1
		Total	**15**	**2**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
7th Semester	SW415	Software re-engineering	3	0
	SW416	Multimedia Communication	3	1
	SW417	Web Engineering	3	1
	SW418	Formal Methods in Software Engineering	3	0
	SW498	Thesis/Project - I	0	3
		Total	**12**	**5**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
8th Semester	SW424	Simulation & Modeling	3	0
	SW425	Cloud Computing	3	1
	SW426	Software Quality Engineering	3	1
	SW499	Thesis/Project - II	0	3
		Total	**9**	**5**

Software engineering is at the core of Information Technology and the increasing need for computers in the daily life of people has made it imperative that new designs and new computer software systems be developed so that advancing technology can be applied in a growing range of applications. The work assigned to people who are called software engineers evolves very fast, which reflects the changes in technology as well as the increase of new specializations which keep cropping up in this field along with the preferences and practices of employers. The principles and knowledge of computer science, engineering, and mathematical analysis are employed by software engineers for designing, developing, testing, and evaluating the software and the systems that computers use to carry out various applications.

Our department works in strong collaboration with Directorate of Student Affairs along with the student societies of similar scope for career counselling of graduating students. The emphasis is on the effective placement of students and graduates in the industry along with counselling sessions which provide career advice to the students. Our graduates have very successful careers in industry and research. Our graduates work for software consultancy companies, specialized software development companies and the IT departments of large institutions (financial, telecommunications and public sector). Recent employers include *Software Houses, Banks, NADRA, PIA, PTCL, OGDCL, SSGC, WAPDA, and SPARCO.*

3.5.9 OBE Implementation Model

To ensure the essence of OBE based learning system, the departmental OBE committee monitors and analyze telos, PLOs and PEOs assessment. The CLOs are assessed through direct assessment, PLOs are assessed through direct as well as indirect way (i.e., Graduating Survey). Whilst, PEOs are indirectly assessed through surveys from Alumni and Employers. The DOBE committee suggests its recommendations after analyzing assessments for the next cycle of the teaching calendar. The recommendations are incorporated in accordance with university policies.

Departmental OBE Committee (DOBE): The Departmental OBE Committee is comprised of three faculty members. and is notified by the departmental HoD. This Committee usually conducts at least

one meeting in each semester. The key responsibility of the committee is to monitor implementation and assessment of OBE system in the department.

Industry Advisory Board (IAB): The Industry Advisory Board is headed by the Head of the department and includes at least three faculty members from the department and at maximum three externals from the industry to make sure the involvement of the industrial stakeholders. IAB meetings are held at least two (02) times in a year. The key responsibility of IAB is to review, recommend and suggest the necessary changes to the curriculum, assessment methods and improvements as per industrial needs.

Departmental Curriculum Review Committee (DCRC): The Departmental Curriculum Revision Committee (DCRC) is comprised of three faculty members and is notified by the departmental HoDs. DCRC usually conducts meetings whenever desired. The DCRC is responsible to propose revisions of the course contents as per Departmental OBE committee analysis.

Departmental Board of Studies (DBoS): The DBoS is headed by Head of the department and includes Chairman, Professors, Associate Professors and three experts to be appointed by the Vice-Chancellor. The responsibilities of DBoS are to advise all academic matters associated with instruction and examination in the concerned courses and to propose curricula and syllabi of the concerned degree program.

3.6 Department of Telecommunication Engineering

3.6.1 The Department

Keeping in view the demand of Telecommunication sector, MUET got the privilege to establish the Telecommunication Engineering Department for the first time in the history of all Public and Private sector universities of Pakistan in the year of 2001. The main objective of department is to augment its existing programs to produce high quality Telecom personnel in various specialized areas such as Wired Networks, Mobile/Wireless Communication, Multimedia and Broadband Communication etc. The department is under the establishment of Institute of Communication Technologies (ICT). In last 20 years, graduates of this Institute have established their footprint in leading telecom industries of Pakistan, and they are playing vital role in ICT development. The opportunities for Telecom engineers have been further extended with the emerging growth of 4G/5G mobile networks and Internet of Things.

Mission of Program

To produce quality Telecommunication engineers with in-depth knowledge and skills who can meet current and future needs of society by serving in professional domains and carrying out quality research through collaborative environment.

Program Educational Objectives (PEOs)

1. To produce telecommunication graduates who can work as academicians, researchers, system designers, analysts and managers to meet market requirements.
2. To inculcate self-learning and problem-solving skills in telecommunication students through modern scientific methods and tools.
3. To nurture telecommunication students who can effectively work both individually and in a team to meet sustainable environmental and societal needs while maintaining professional ethics.

3.6.2 The Faculty

Chairman of the Department:
Prof. Dr. Aftab Ahmed Memon
Phone: +92-22-2772277 /Ext.: 6000

Meritorious Professor:
Dr. Aftab Ahmed Memon
PhD, Japan.

Professors:
Dr. Abdul Waheed Umrani
PhD, Singapore.

Dr. Faisal Karim Shaikh
PhD, Germany.

Associate Professors:
Dr. Fahim Aziz Umrani
PhD, United Kingdom.

Dr. Abdul Latif Memon
PhD, China.

Dr. Sajjad Ali Memon
PhD, China.

Dr. Faheem Yar Khuhawar
PhD, Italy.

Dr. M. Zafi Sherhan Shah
PhD, United Kingdom.

Assistant Professors:
Engr. Nafeesa Bohra
M.E., Pakistan.

Engr. Zulfiqar Ali Arain
M.E., Pakistan.

Engr. Syed Mohsin Ali Shah
M.E., Pakistan.

Engr. Shanzah Mohsin
M.E., Pakistan.

Engr. Saima Hafeez Qureshi
M.E., Pakistan.

Engr. Naeem Aijaz Yousfani
M.E., Pakistan.

Engr. Riaz Ahmed Soomro
M.E., Pakistan.

Dr. Faisal Ahmed Memon
PhD, Italy.

Dr. Abi Waqas Memon
PhD, Italy.

Dr. Umair Ahmed Korai
PhD, United Kingdom.

Engr. Mehran M. Memon
M.E., Malaysia.
(On Study Leave Italy)

Engr. Saadullah Kalwar
M.E., Pakistan.
(On Study Leave Hongkong)

Lecturers:
Engr. Umair M. Qureshi
M.E., Pakistan.
(On Study Leave Australia)

Engr. Zuneera A. Memon
M.E., Pakistan (On Study Leave)

Dr. Imran Ali Qureshi
PhD, China.

Engr. Hyder Bux Mangrio
M.E., Pakistan.

Engr. Anum Talpur
M.E., Pakistan.
(On Study Leave Singapore)

Dr. Badar Munir
PhD, China.

Engr. Shakeel A. Laghari
M.E., Pakistan.

Dr. Nasrullah Pirzada
PhD, Malaysia.

Engr. Syed Rizwan Ali Shah
M.E., Pakistan.

3.6.3 Laboratory Facilities

Keeping in view the industry demands, the department of Telecommunication Engineering has established state of the art laboratories. These laboratories enable students with the latest technological advancements and make them able to meet with the market requirements.

Following laboratories are available at the Department of Telecommunication, MUET, Jamshoro:

1. Analog and Digital Communication Laboratory
2. Project Laboratory
3. Transmission and Switching Laboratory
4. Networking and Protocol Design Laboratory
5. Optical Communication and Photonics Laboratory
6. PC Laboratory I & II
7. Cellular Communications Laboratory
8. Advanced Computing Laboratory
9. Digital Signal Processing Laboratory
10. Radio Communication Laboratory
11. Internet of Things (IoT) Laboratory

3.6.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
First Semester	MTH108	Applied Calculus	03	00
	TL121	Applied Physics	03	01
	CS104	Introduction to Programming	03	01
	ENG101	Functional English	03	00
	SSS111	Islamic Studies / Ethics	02	00
	PS106	Pakistan Studies	02	00
		Total	**16**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Second Semester	ES112	Basic Electronics	03	01
	CS123	Object Oriented Programming	03	01
	TL112	Introduction to Simulation Tools	00	01
	EL102	Circuit Analysis	03	01
	MTH112	Linear Algebra and Analytical Geometry	03	00
		Total	**12**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Third Semester	ES205	Amplifiers and Oscillators	03	01
	ES215	Digital Logic Design	03	01
	MTH212	Differential Equations and Fourier Series	03	00
	IN202	Engineering Management	03	00
	ENG201	Communication Skills	02	00
		Total	**14**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Fourth Semester	ES256	Microprocessors and Microcontrollers	03	01
	TL231	Signals and Systems	03	01
	TL202	Electromagnetics	03	00
	MTH213	Complex Variables and Transforms	03	00
	SS221	Professional Ethics	02	00
		Total	**14**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Fifth Semester	TL323	Communication Systems	03	01
	TL304	Antennas and Wave Propagation	03	01
	TL354	Probability and Stochastic Processes	03	00
	TL345	Digital Signal Processing	03	01
	MTH336	Numerical Analysis and Computer Applications	02	01
		Total	**15**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Sixth Semester	TL371	Digital Communication	03	01
	TL334	Computer Communication and Networking	03	01
	TL391	Optoelectronics	02	01
	TL362	Microwave Engineering	03	01
	ENG320	Technical Report Writing Skills	02	00
		Total	**13**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Seventh Semester	TL474	Fiber Optic Communication Systems	03	01
	TL445	Transmission and Switching Systems	03	01
	TL431	Queueing Theory	02	01
	TL424	Wireless Communications	03	01
	TL498	Thesis/Project	00	03
		Total	**11**	**07**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
Eighth Semester	TL413	Satellite and Radar Communications	03	00
	TL484	Emerging Wireless Technologies and RF Planning	02	00
	TL455	Network Protocols and Architecture	02	01
	TL461	Telecom Policies and Standards	02	00
	STD951	Entrepreneurship	02	00
	TL499	Thesis/Project	00	03
		Total	**11**	**04**

3.6.5 Career Opportunities

Telecommunication engineers work within several industries based on Internet and computing technologies, telephone networks, radio wave transmission and reception, satellite communication, radar and navigation, etc. Some engineers concentrate on applying technical knowledge, whilst others focus on managerial activities. Many posts include elements of both managerial and technical responsibilities. The technical aspect of the role includes using specialist knowledge to design and deliver solutions, as well as providing technical guidance to others within the organization.

Telecom Industries in Pakistan

- Pakistan Telecommunication Corporation Limited (PTCL)
- Pakistan Telecommunication Authority
- Wateen Telecom
- Warid Telecom
- Jazz
- Telenor
- Zong
- Ufone
- Special Communication Organization

WLL Companies in Pakistan

- PTCL
- Telecard Limited
- Wi-Tribe Pakistan Limited
- DV Com Data (Pvt.) Limited
- World Call Telecom Ltd.
- Wateen WiMax (Pvt.) Ltd.
- Cyber Internet Services Limited
- LINKDotNET Telecom Ltd.
- Super Dialogue (Pvt.)
- MyTel (Pvt.) Ltd.
- Metrotel (Pvt.) Ltd.
- Sharp Communications (Pvt.) Ltd.

Telecom. Vendors in Pakistan

- Huawei
- Ericson
- ZTE
- Nortel
- Myson Telecom
- People's Logic Telecom

Satellite TV channels in Pakistan

- Numerous groups of channels such as Sindh TV, Geo Group, Dawn Group etc.

Pakistan Forces

- Pakistan Army (Communication Core)
- Pakistan Navy (Communication Sector)
- Pakistan Air Force (Communication Sector)
- Maritime Technologies Complex
- Pakistan Space and Upper Atmosphere Research Commission

Aeronautical Companies

- Civil Aviation Authority of Pakistan
- Civil Aviation Training Institute
- Pakistan International Airline
- Airblue
- Air Indus
- Air Sial

4. FACULTY OF MECHANICAL PROCESS AND EARTH ENGINEERING

4.1 Department of Chemical Engineering

4.1.1 The Department

Chemical Engineering is a discipline that focuses on the applications of engineering principles to plan, design, construct, operate and control the chemical processing plants dealing with petrochemicals, fertilizers, cement, sugar, polymers, pharmaceuticals, petroleum and gas, bio products, food products, materials and variety of other processes. Due to its versatility, Chemical Engineering is known as one of the prominent engineering disciplines that has a huge market both nationally and internationally. Upon the increasing demand of Chemical Engineers, the Department of Chemical Engineering at Mehran UET was established in 1970 with the vision to produce high quality industry-oriented chemical engineers having excellent innovative approach, problem solving attitude, professional and management skills.

The department offers undergraduate, masters and doctoral programs in the Chemical Engineering. The degree programs are chartered and certified by Higher Education Commission (HEC) Pakistan and accredited by Pakistan Engineering Council (PEC). The high qualified and experienced faculty members are involved in delivering high quality teaching and research according to the needs of industries. The Department has fourteen well-maintained laboratories with sophisticated equipment where the students are provided with hands-on experience related to Chemical Process Industries. Besides, the department provides excellent academic and social environment to its students to nurture their academic, professional and socializing skills.

The department also maintains a computer and software laboratory provided with latest software such as ASPEN PLUS, SIMULINK, ANSYS CFD Simulation Package and MATLAB for the students. The undergraduate students are offered internship trainings to get industrial experience as part of their academic activity. Moreover, the department organizes various professional seminars, short courses, workshops, conferences and exhibitions for grooming of students. Since the establishment of the Department, its graduates are actively contributing and fulfilling the needs of industries both at national and international level. It is worth mentioning that the graduates of this Department are working at various top-level positions in industries both locally and globally. The Department actively arranges various on-campus recruitment drives for job placement of fresh graduates. Apart from this, the Department maintains good relationship with its alumni and organizes various professional forums at different times for the betterment of students.

The Department of Chemical Engineering at MUET Jamshoro has active collaborations with national and international institutions such as Western Sydney University Australia, Exeter University UK, Arizona University USA, Winston University UK, Brunel University UK, Xi'an Jiaotong University, Xi'an, China, SUPARCO Karachi, PCSIR Karachi, Sui Southern Gas Company Ltd (SSGC) Karachi. The collaborations intend to provide international exposure to students and faculty in academic and research activities.

Funded Projects of Department of Chemical Engineering:

- HEC-BC Knowledge Economy Partnership Pakistan-UK (KEP) Program funded by Higher Education Commission, Pakistan & British Council, 2015-2017 in Collaboration with University of Manchester, UK ***"Effective Utilization and Up-Gradation of Nagar Parker Kaolin, a Natural Resource Mineral for Economic Development of Thar Desert"***
- HEC-BC Higher Education link with Brunel University, West London, UK funded by Higher Education Commission, Islamabad 2007-2009 ***"Waste Treatment & Management"***
- Pakistan – US Science and Technology Program, 2010-2013 in Collaboration with University of Arizona, USA. "***Removal of Arsenic from Drinking Water using Iron Ores as Low-Cost Reactive Adsorbent Media"***
- HEC-BC DelPHE project, 2008-2009 in Collaboration with Exeter University U.K. ***"Grey water characterization and treatment"***

- National Research Program for Universities funded by HEC, 2019-21, ***"Parametric Investigation of Arsenic Adsorption in Modified Polyornithine Packed Bed Column through Dynamic Simulations***";
- National Scientific Research and Development Board Islamabad 1991-1992, "***Environmental problems due to sugar mills of Sindh and its solution***",
- National Research Program for Universities funded by HEC, **"*Enhanced production of Biofuel*"**

It has been a prominent aim of Chemical Engineering Department to create the awareness among students and professionals about the currents trends of Chemical Engineering and allied fields by promoting research through series of conferences and seminars. Therefore, Department has been practicing to organize a number of international and national events including the conferences and workshops. Such platforms help to highlight the key issues in the field of Chemical Engineering and propose the emerging solutions. With this purpose, Department had organized a 3rd version of recurring international conference named "3rd International conference on Chemical Engineering (ICCE2021)" dated September 22-23, 2021 in collaboration with Higher Education Commission (HEC) Pakistan and Pakistan Science Foundation (PSF). Last year, Department also organized 4th Two Days Training Workshop on "BIO & FOOD PROCESSING 23-24 November 2021".

The Department strongly believes in academic collaboration with other institutions (Dawood College of Engineering and Technology Karachi, Quaid-e-Awam University of Engineering, Sciences and Technology Nawabshah and Baluchistan University of Information and Technology, Quetta) to facilitate their students in conduct of Laboratory Practical also to uplift the academic standards. Such collaboration is not limited to academic institutes, rather department has extended mutual cooperation with industrial sectors such as Rafhan Maize Products Kotri; a unit of *Ingredion* Incorporated, *USA* and Shah Murad Sugar Mills Jhoke Sharif, Thatta, Gul Paper Industry, Kotri. Faculty members are serving in many professional bodies such as Pakistan Engineering Council, Pakistan Institute of Chemical Engineers, Institute of Engineers Pakistan, Society of Women Engineers, USA are the sole examples.

Considering the current need and academic standards of all over the world, the Department also aims to organize Professional training courses for students and young professional engineers from industry. The courses include Maintenance Management System (MMS), Aspen HYSYS, Computational Fluid Dynamics (CFD), ANSYS FLUENT, High Performance Liquid Chromatography HPLC, Food and Bio Processing, Health. Safety and Environment, Fuel cell, Process Safety, Human Resources Management, Publication Skills and Analytical Techniques. Also, the department serves as moderator in organizing the professional seminars for the engineers and managers from different organizations by inviting the internationally recognized resource persons. For example, recently two seminars have been organized by the department at SSGC Hyderabad Region and Archroma Pakistan, Jamshoro. A close linkage has been developed with the industry which resulted in financial grant for 04 energy related research projects at Masters and PhD research level through formal agreement by SSGC. The Department has founded an alumni society known as Mehran University Chemical Engineers' Society (MUCES) in 2010 to bridge the gap between industry and academia. Graduates from all over the world are members of this MUCES. For the global representation and partnership of our Chemical Engineering students of MUET, the Department has initiated the student chapters of two international bodies *i.e.,* American Institute of Chemical Engineers (AIChE) and American Chemical Society (ACS).

Vision of the Department

To provide excellent education in the field of Chemical Engineering as per International Standards, and develop Research Based Solutions to Process Industry, for National Development.

Mission of the Program

To produce Quality Professional Engineers with Problem Solving Expertise, Integrity and Strive to enhance their Skills and Ideas related to Chemical industry.

Program Education Objectives (PEOs)

PEO1. Demonstrate proficiency in applying the acquired knowledge & skills to solve engineering problem related to the chemical industry.
PEO2. Contribute to the development of the society by partaking in chemical engineering projects utilizing their high-level of competence.
PEO3. Exhibit effective skill-set comprising of skills such as communication, interpersonal, leadership and being a team player.
PEO4. Excel and grow professionally with value-added skills of integrity and creativity.

4.1.2 The Faculty

Chairperson of the Department
Prof. Dr. Khadija Qureshi
Phone: 022-2771262, 022-772255-3 /**Ext.:** 4400

Professors:

Dr. Khadija Qureshi
PhD, Pakistan.
Post Doctorate USA

Dr. Suhail Ahmed Soomro
PhD, Pakistan.

Dr. Shaheen Aziz
PhD, Pakistan.

Dr. Inamullah Bhatti
PhD, Malaysia.
Post Doctorate USA

Dr. Abdul Rehman Memon
PhD, United Kingdom.

Dr. Zeenat Muhammad Ali
PhD, Pakistan.

Dr. Aziza Aftab
PhD, Pakistan.

Associate Professors:

Dr. M. Shuaib Shaikh
PhD, Malaysia.

Dr. Imran Nazir Unar
PhD, Pakistan.

Dr. Zulfiqar Ali Bhatti
PhD, Pakistan.

Dr. Masroor Ahmed Abro
PhD, China.

Assistant Professors:

Dr. Khan M. Qureshi
M.E., Pakistan.

Engr. Aisha Kousar Effendi
M.E., Pakistan.

Dr. Sikander Mustafah Almani
PhD, France

Lecturers:

Engr. Zulfiqar Ali Solangi
M.E., Pakistan.
PhD in progress

4.1.3 Laboratory Facilities

- Water Quality Research Laboratory
- Computer Laboratory
- Polymer Research Laboratory
- Biochemical and Food Processing Laboratory
- Particulate Technology Laboratory
- Mass Transfer Laboratory
- Chemical Reaction Laboratory
- Analytical Research Laboratory
- Chemistry Laboratory
- Fluid Mechanics Laboratory
- Heat Transfer Laboratory
- Fuel and Energy Laboratory
- Coal Research Laboratory
- Instrumentation and Process Control Lab.

4.1.4 The Courses

	Course code	Name of Subject	Credit Hours	
			Theory	Practical
1st Semester	CH101	Inorganic & Organic Chemistry	2	1
	CH102	Chemical Process Calculations-I	2	0
	PS106	Pakistan Studies	2	0
	IS111/SS10	Islamic Studies/ Ethics	2	0
	MTH108	Applied Calculus	3	0
	ME102	Engineering Drawing &Computer Graphics	2	2
	ME142	Workshop Practice	0	2
		Total	**13**	**5**

	Course code	Name of Subject	Credit Hours	
			Theory	Practical
2nd Semester	CH111	Engineering Materials	2	0
	CH112	Chemical Process Technology	3	0
	MTH112	Linear Algebra and Analytical Geometry	3	0
	ENG101	Functional English	3	0
	CE115	Engineering Mechanics	2	0
	EL102	Basic Electrical Technology	2	1
		Total	**15**	**1**

	Course code	Name of Subject	Credit Hours	
			Theory	Practical
3rd Semester	CH201	Physical and Analytical Chemistry	2	1
	CH205	Engineering Economics	2	0
	CH203	Heat Transfer Operations	3	1
	CH204	Engineering Thermodynamics	3	1
	MTH212	Differential Equations and Fourier Series	3	0
		Total	**13**	**3**

	Course code	Name of Subject	Credit Hours	
			Theory	Practical
4th Semester	CH211	Chemical Process Calculations-II	3	0
	CH212	Chemical Engineering Fluid Mechanics-I	3	1
	CH213	Particulate Technology	3	1
	CS228	Introduction to Computer and Programming Concepts	3	1
	MTH216	Complex Variables and Laplace Transforms	3	0
		Total	**15**	**3**

	Course code	Name of Subject	Credit Hours	
			Theory	Practical
5th Semester	CH301	Chemical Engineering Fluid Mechanics-II	3	1
	CH302	Mass Transfer	3	1
	CH303	Chemical Engineering Thermodynamics	3	0
	CH304	Food Technology	2	1
	MTH336	Numerical Analysis and Computer Applications	3	1
		Total	**14**	**4**

	Course code	Name of Subject	Credit Hours	
			Theory	Practical
6th Semester	CH311	Fuels and Energy	3	1
	CH312	Chemical Engineering Plant Design	2	0
	CH313	Simultaneous Heat and Mass Transfer	3	1
	CH314	Chemical Reaction Engineering	3	1
	MTH311	Statistics and Probability	3	0
		Total	**14**	**3**

	Course code	Name of Subject	Credit Hours	
			Theory	Practical
7th Semester	CH401	Transport Phenomena	3	0
	CH402	Instrumentation & Process Control	3	1
	CH403	Biochemical Engineering	2	1
	CH404	Pollution Control Engineering	2	1
	ENG102	Technical Report Writing &Presentation Skills	2	0
	CH409	Final Year Project-1	0	3
		Total	**12**	**6**

	Course code	Name of Subject	Credit Hours	
			Theory	Practical
8th Semester	CH411	Industrial Management	2	0
	CH412	Chemical Process Design and Simulation	2	1
	CH420	Entrepreneurship	2	0
	CH414	Petroleum Refinery Engineering	3	0
	CH415	Maintenance Engineering and Risk Management	2	0
	CH419	Final Year Project-II	0	3
		Total	**11**	**4**

4.1.5 Career Opportunities

A chemical engineer may find the broad career opportunities in the industry as well educational/ research institutesto perform various tasks such as,

- Conduct research to develop new and improved manufacturing processes
- Establish safety procedures for those working with dangerous chemicals
- Design and plan the layout of equipment
- Conduct tests and monitor the performance of processes throughout production
- Troubleshoot problems with manufacturing processes
- Evaluate equipment and processes to ensure compliance with safety and environmental regulations
- Estimate production costs for management
- Sorting out the alternative options of getting maximum output out of minimum resources.

Alternatively, they may offer their expertise as consultant to troubleshoot problems and design the new solutions and techniques. A greater number of our graduates are found serving in leading public as well as private sector organizations within Pakistan such, Engro Chemicals, Engro Polymers, FFBL, FFC, SUPARCO, Pakistan Atomic Energy Commission, NRL, PRL, BYCO Refinery, PCSIR, OGDCL, SSGC, SNGPL, BHP Oil and gas, OMV Oil and gas, PPL, Novatex, Novartis, Archroma, ICI Chemicals, Lotte Chemicals, *etc.*, and abroad too.

4.2 Department of Industrial Engineering & Management

4.2.1 The Department

The Department of Industrial Engineering and Management was established in the year 1987. Industrial Engineering is a rapidly developing and broad professional discipline. It deals with the design, installation, operations, and management of integrated systems of men, materials, and machines drawing upon specialized knowledge of physical and social sciences and technology. It mainly deals with managerial problems requiring knowledge of fundamental science and engineering practice for their solutions. While the manufacturing industry has a broad scope and demand for Industrial Engineering, increasing numbers are finding satisfying employment in other kinds of business, hospitals, Hotels, Banks, and Air Lines are availing the services of Industrial Engineers.

Our graduates are already serving the reputed organizations both in Pakistan and abroad. The department offers Bachelor of Engineering (B.E) undergraduate and postgraduate (M.E. / PhD) programs exclusively in Industrial Engineering and Management.

Vision of the Department

This program intends to be globally recognized as a leader in Industrial Engineering and Management.

Mission of the Program

The program mission is to produce quality engineers, professionals, and leaders having sound managerial and technical skills in the core areas of Industrial Engineering and Management and can play their leading role in academia and industry for socio-economic development of society.

Program Education Objectives (PEOs)

The Graduates of B.E Industrial Engineering and Management will have:

PEO-1: The ability to competently make a use of managerial and technical knowledge in decision making pertaining to the designing and complexity of systems, both in the manufacturing and service industry.

PEO-2: The ability to conduct research and apply their analytical and IT related skills for continuous learning and developing innovative ideas for professional and career growth.

PEO 3: The capability to act as ethical and responsible professionals in fostering innovative activities considering economic, environmental and societal aspects.

PEO-4: Ability to effectively lead, work and communicate in cross functional teams or be able to develop the entrepreneurial skill to operate their own business.

4.2.2 The Faculty

Chairman of the Department:
Prof. Dr. Abdul Salam Soomro
Phone: +92 22 2771247

Professors:

Dr. Abdul Salam Soomro
PhD, Pakistan / Malaysia.

Dr. Ghulam Yasin Shaikh
PhD, Pakistan.

Dr. Muhammad Saleh Jumani
PhD, United Kingdom.

Associate Professors:

Dr. Shakeel Ahmed Shaikh
PhD, United Kingdom.

Dr. Sonia Irshad Mari
PhD, South Korea.

Dr. Muhammad Saad Memon
PhD, South Korea.

Assistant Professors:

Mr. Abdul Qayoom Lakhair
PgD, Pakistan.

Mr. Hafiz Karim Bux Indhar
M.E., Pakistan.

Mr. Ali Arsalan Siddiqui
M.E., Pakistan.

Mr. Muhammad Ali Khan
M.E., Pakistan.

Lecturers:

Mr. Miskeen Ali Gopang
M.E., Pakistan.

4.2.3 Laboratory Facilities

- Workshop
- Operations Research Lab
- Computer-Aided Design and Simulation Modeling Lab
- Vicon Motion Capture System Lab
- Additive Manufacturing Lab
- Condition Monitoring Lab
- Human Factors and Time & Motion Study Lab
- Computer Integrated Manufacturing Lab

4.2.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	MTH108	Applied Calculus	03	00
	SS111	Islamic Studies	02	00
	SS104	Ethics (Elective)	02	00
	PS106	Pakistan Studies	02	00
	INM101	Industrial Economics and Management	03	00
	INM111	Engineering Drawing & CAD	03	01
	EL102	Electrical Technology	03	01
		Total	**16**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	MTH103	Linear Algebra Differential Equations & Analytical Geometry	03	00
	INM121	Basic Business Management	02	00
	ENG101	Functional English	03	00
	CE145	Mechanics of Materials	03	01
	INM131	Manufacturing Processes	02	02
		Total	**13**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
3rdSemester	MT220	Materials & Processes	03	01
	INM201	Management Information Systems	02	00
	ME281	Mechanics of Machines	02	01
	INM221	Applied Thermodynamics	02	01
	CS218	Introduction to Computer& C++ Programming	03	01
		Total	**12**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
4thSemester	INM231	Production Planning and Control	03	00
	INM241	Industrial Probability and Estimations	03	01
	INM251	Managerial Accounting	03	00
	INM261	Machine Design	03	00
	CE261	Fluid Mechanics	03	01
		Total	**15**	**03**

5th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	INM301	Quality Control and Reliability	03	00
	MTH336	Numerical Analysis & Com. Application (N.A.C.A)	03	01
	INM311	Operations Research I	03	01
	INM321	Production Management	02	00
	ES361	Instrumentation & Control	03	01
		Total	**14**	**03**

6thSemester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	INM331	Organizational Behavior	02	00
	INM341	Work Study & Methods Engineering	03	01
	INM351	Marketing Principles and Practices	03	00
	INM361	Project Management	03	01
	INM371	Environmental Management	02	00
	INM381	Principles of Decision Making	03	00
		Total	**16**	**02**

7thSemester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	INM401	Human Resources Management	03	00
	INM411	Human Factors Engineering	03	01
	INM421	Operations Research II	03	01
	INM431	Industrial Maintenance and Safety	03	00
	INM498	Thesis/Project I	00	03
		Total	**12**	**05**

8thSemester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	INM451	Entrepreneurship	03	00
	INM461	Production Systems Design	03	00
	INM471	Supply Chain and Logistics	03	00
	INM481	Advanced Manufacturing Technologies	03	01
	INM499	Thesis/Project II	00	03
		Total	**12**	**04**

4.2.5 Career Opportunities

Graduates in the industrial engineering program take courses in areas of production planning, engineering economics, computer integrated manufacturing, human factors and ergonomics, operations research, statistics, principles of decision making, supply chain management and quality management.

Employment of industrial engineers is projected to grow 10 percent from 2016 to 2026, faster than the average for all occupations. This occupation is versatile both in the nature of the work it does and in the industries in which its expertise can be put to use. Industrial engineers are employed in a wide range of industries, including major manufacturing industries, consulting and engineering services, research and development firms, and wholesale trade. This versatility arises from the fact that these engineers focus on reducing internal costs, making their work valuable for many industries. For example, their work is important for manufacturing industries that are considering relocating from overseas to domestic sites. In addition, growth in healthcare and changes in how healthcare is delivered will create demand for industrial engineers in firms in professional, scientific, and consulting services.

Industrial Engineers solve a variety of problems:

- Determining the best location of machines in a factory based on economic and operation considerations; designing computer-aided process planning systems that flexibly vary the sequence of operations to produce a product.
- Developing a system for controlling the inventory levels of a product in a warehouse.
- Designing automated material handling systems for the movement of parts in a factory.
- Designing computer-integrated manufacturing systems and decision support systems for integrating information and control between manufacturing systems, automated guided vehicles, automated warehouse facilities, and management personnel.
- Designing a new plan for scheduling of production orders in a factory.
- Developing reliability and quality management systems to ensure that a manufactured product is free from defects.
- Developing programs for analyzing human reliability to assess workplace safety.
- Designing computer graphics systems to assist operators in the monitoring and control of industrial processes.

4.3 Department of Mechanical Engineering

4.3.1 The Department

Department of Mechanical Engineering was established in 1963. It is one of the main departments of the University with student's strength of about 550. The Department of Mechanical Engineering offers a full-time four years B.E degree program, with dedicated & well qualified faculty and staff who are strive to produce the engineers having the capabilities to contribute in exploration of affordable and sustainable development of the country.

Mechanical engineering department endeavors to produce engineers and researchers with sound knowledge of traditional and emerging areas of engineering together with innovative design abilities to achieve sustainable national development. Moreover, it attempts to develop the skill of the students to make them globally competitive engineers and researchers by providing quality education and research facilities.

The Department of Mechanical Engineering has successfully adopted Outcome Based Education (OBE) system to meet the criteria of Pakistan Engineering Council (PEC) as per the Washington Accord and is duly accredited by Pakistan Engineering Council (PEC) in level II. All the exams are being conducted and assessed through the course learning objectives associated with each course according to Outcome Based Education system. The department also offers the PhD programs in Manufacturing & Mechanical Engineering, and Masters programs in Manufacturing & Energy System Engineering.

The Department of Mechanical Engineering is also actively engaged in the various curriculum & extra curriculum activities at the department level as well as University level such as seminars, workshops, training, industrial visits, short courses, sports events, debates, competitions etc.

The goal of the Mechanical Engineering undergraduate programs is to produce the engineers who are globally competitive for the requirements of industries. The graduate engineers become capable of taking leading positions in industry, academia nationally and internationally.

Vision of the Department
Mechanical Engineering Department intends to become a hub of high-quality engineering education and research so as to produce skilled, innovative, entrepreneurial mechanical engineers who meet the ever-changing engineering demands.

Mission of the Program
Mechanical Engineering Department is to produce engineers and researchers with sound knowledge of traditional and emerging are as of engineering to get her with innovative design abilities to achieve sustainable having critical and innovative thinking and make them globally competitive.

Program Education Objectives (PEOs):

PEO-1: To produce engineers with clear concepts about fundamentals of Mechanical Engineering discipline and allied subjects.
PEO-2: To produce engineers with analytical and problem-solving abilities.
PEO-3: To produce engineers with high level of professionalism and integrity.
PEO-4: To produce engineers with sound communication and leadership abilities along with the desire of continuously improving their knowledge and skills.

4.3.2 The Faculty:

Chairman of the Department:
Prof. Dr. Abdul Fatah Abbasi
Phone: +92-022- 2771275, 022-22772250-70 / **Ext.:** 2300

Professors:

Dr. Abdul Fatah Abbasi
PhD, Pakistan.

Dr. Khanji Harijan
PhD, Pakistan.

Dr. Rizwan Ahmed Memon
PhD, Hong Kong.

Dr. Dur Muhammad Pathan
PhD, Pakistan.

Dr. Tanweer Hussain Phulpoto
PhD, United Kingdom.

Dr. Abdul Ghafoor Memon
PhD, Pakistan.

Assistant Professors:

Engr. Shoukat Ali Memon
B.E, Pakistan.

Engr. Muhammad Jurial Sangi
M.E., Pakistan.

Engr. Muhammad Sharif Jamali
M.E., Pakistan.

Engr. M. Atif Qaimkhani
M.E., Pakistan.

Engr. Imtiaz Ali Memon
M.E., Pakistan.

Lecturers:

Engr. Javed Rehman Larik
M.E., Pakistan.

Engr. Zain-ul-Abdin Qureshi
(ME in Progress)

Dr. Laveet Kumar
PhD, Malaysia.

Engr. Roshan Kumar
M.E., Pakistan. (On Study Leave)

Engr. Abdul Hafeez Khoharo
M.E., Pakistan. (On Study Leave)

Engr. Samiullah Qureshi
M.E., Pakistan. (On Study Leave)

Engr. Farhan Haider Joyo
M.E., Pakistan.

Engr. Muhammad Waqas Chandio
M.E., Pakistan.

Engr. Intizar Ali Tunio
M.E., Pakistan.

Engr. Ans Memon
M.E., Pakistan.

Workshop Instructors

Engr. Ameer Ali Memon
B.E, Pakistan.
(Workshop Superintendent)

Engr. Afaque Rafique Memon
M.E., China (PhD in Progress).

Engr. Pir Jawaid Ahmed Sarhandi
B.E, Pakistan.

Mr. Jameel Ahmed Mangi
B.Tech. (Hons), Pakistan.

Engr. Aurangzeb Halepoto
B.E., Pakistan.

Mr. Abdul Qadir Jamali
B.Tech. (Hons), Pakistan.

Mr. Saddarunddin Chandio
B.Tech. (Hons), Pakistan.

Engr. Jamaluddin Veenjher
B.E., Pakistan.

4.3.3 Laboratory& Library Facilities

The Department of Mechanical Engineering has following laboratories. All the laboratories are well equipped with latest and conventional Equipment.

- Energy Technology Laboratory
- Heat Transfer Laboratory
- Refrigeration & Air Conditioning (HVAC)
- Aerodynamics Laboratory
- Engineering Mechanics Laboratory

- Mechanics of Machines Laboratory
- Thermal Power Plant Laboratory
- Fluid Mechanics Laboratory
- Instrumentation Laboratory
- Control Engineering Laboratory
- Thermodynamics Laboratory
- Mechanical Vibrations Laboratory
- Material Testing Laboratory
- Automobile Laboratory
- Mechanical Engineering Workshop
- Computer & Modelling Simulation Laboratory
- Drawing Hall
- Seminar Library

4.3.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	(SS 111) / (SS104)	Islamic Studies/Ethics	2	0
	(PS 106)	Pakistan Studies	2	0
	(MTH 108)	Applied Calculus	3	0
	(ME 102)	Engineering Drawing &Computer Graphics	2	2
	(ME 112)	Engineering Statics	2	1
	(ME 122)	Engineering Materials	3	0
		Total	**14**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	(EN 101)	Functional English	2	0
	(MTH 103)	Linear Algebra, Differential Equations & Analytical Geometry	3	0
	(ME 132)	Engineering Dynamics	2	0
	(EL 102)	Electrical Technology	2	1
	(ME 142)	Workshop Practice	0	2
	(ES 181)	Basic Electronics	2	1
	(ME 151)	Applied Physics	2	0
		Total	**13**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
3rd Semester	(MTH 213)	Complex Variables & Transforms	3	0
	(ME 202)	Strength of Materials-I	2	0
	(CH 202)	Applied Chemistry	2	0
	(ME 222)	Thermodynamics-I	3	0
	(ME 252)	Fluid Mechanics-I	3	1
	(CS 232)	Computer programming	2	1
		Total	**15**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
4th Semester	(MTH 336)	Numerical Analysis & Computer Applications	3	1
	(ME 232)	Strength of Materials-II	3	1
	(ME 242)	Thermodynamics-II	3	1
	(ME 226)	Fluid Mechanics-II	3	1
	(ME 212)	Mechanics of Machines-I	2	0
		Total	**14**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
5th Semester	(ME 302)	Heat & Mass Transfer	3	1
	(ME 312)	Applied Aerodynamics	3	1
	(EE 325)	Safety, Health & Environment	2	0
	(ME 332)	Machine Design -I	3	0
	(EN 306)	Communication Skills and Technical Writing	3	0
	(ME 366)	Mechanics of Machine-II	2	1
		Total	**16**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
6th Semester	(ME 342)	Instrumentation & Measurement	2	1
	(MTH 317)	Statistics & Probability	3	0
	(ME 352)	Machine Design-II	3	0
	(ME 372)	Refrigeration & Air Conditioning	3	1
	(ME 382)	Mechanical Vibrations	3	1
	(ME 356)	Computer Aided Machine Design (CAMD)	0	1
		Total	**14**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
7th Semester	(ME 402)	Entrepreneurship & Engineering Management	3	0
	(ME 491)	Control Engineering	2	1
	(ME 462)	Manufacturing Processes	3	1
	(ME 442)	Thermal Power Plants	3	1
	(ME 498)	Project/Thesis –I	0	3
		Total	**11**	**06**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
8th Semester	(ME 452)	Renewable and Emerging Energy Technologies	3	1
	(ME 472)	Maintenance Engineering	2	0
	(ME 412)	Automobile Engineering	3	1
	(ME 482)	Project Management & Optimization	3	0
	(ME 499)	Project/Thesis-II	0	3
		Total	**11**	**05**

4.3.6 Laboratory Facilities

- Instrumentation Laboratory
- Control Engineering Laboratory
- Computer Laboratory
- Modeling & Simulation Laboratory
- Engineering Drawing Laboratory
- Engineering Mechanics Laboratory
- Fluid Mechanics Laboratory
- Material Testing Laboratory
- Thermodynamics Laboratory
- Mechanics of Machines Laboratory
- Mechanical Vibrations Laboratory
- Power Plant Laboratory
- Mechanical Engineering Workshop

4.4 Department of Mechatronic Engineering

4.4.1 The Department

Mechatronic Engineering is the newest department (established in the year 2021) by the University. Initially, the Master in Mechatronic Engineering degree program was offered from the year 2014. Subsequently, PhD in Mechatronic Engineering was also offered. Both of these postgraduate programs are Higher Education Commission (HEC) approved. The four-year undergraduate degree program in Mechatronic Engineering was launched in the year 2016 under the administration of the Mechanical Engineering Department. After the establishment of the separate Department of Mechatronic Engineering, this program is being managed by the same. Mehran UET is the first and the only public sector university in the province of Sindh offering the four-year B.E. in Mechatronic Engineering program. The first batch of this program has already graduated. The program has been adapted to Outcome-Based Education (OBE) and is duly accredited by Pakistan Engineering Council (PEC) in level II (highest possible level).

A mechatronic engineer pursues an inter-disciplinary approach, which enables him/her to design and develop devices and systems that encompass multiple conventional engineering disciplines. With the advent of the Fourth industrial revolution (Industry 4.0), modern smart technology is taking automation to the next higher level thus bringing fundamental changes to our lives. The undergraduate program in mechatronic engineering provides a right mix of subjects from mechanical, electronic and computer engineering domains that is aimed to design and develop innovative technological interventions into the modern-day challenges of industrial, medical and agricultural sectors. In addition to faculty of the Mechatronic Engineering Department, the subjects are also taught by faculty members from Mechanical Electronic and Computer System Engineering departments. In addition to the Department's dedicated laboratories, practical work is also carried out in the labs of other departments of the University.

Mechatronic Engineers have opportunities to work in emerging fields in public and private sectors. A Mechatronic system is composed of integration of mechanical and electronic components, sensors, actuators, and controllers. Modern industry has transformed from electromechanical type to fully automated type; thus, Mechatronic engineering skills are in demand by both national and international companies. They require personnel with multi-disciplinary expertise having knowledge of all the related systems to run industries and improve automated systems. Plenty of opportunities exist for postgraduate studies/scholarships nationally and internationally. Mechatronic Engineers are in demand in the following sectors:

- Automation and Control
- Robotics
- Automobile
- Renewable energy
- Power Plants
- Oil refineries
- Manufacturing process plants
- Marine engineering
- Biomedical
- Food processing
- Petrochemical
- Research and Development, etc.

Vision of the Department

The Department's vision is to be a leader in mechatronic engineering education and research by building capabilities for technological solutions to achieve sustainable development.

Mission of the Program

The missions of the B.E in Mechanical Engineering Programs is to provide a high-quality education by dissemination knowledge and developing problem-solving abilities. The program also strives to nurture integrity, professionalism and leadership skills.

Program Education Objectives (PEOs):

PEO-1: To produce Mechatronic Engineers with core knowledge of related multiple disciplines.
PEO-2: To inculcate analytical and problem-solving abilities in graduating students.
PEO-3: To produce professionals with integrity and demonstrable communication and leadership skills.

4.4.2 The Faculty

Chairman of the Department:
Prof. Dr. Jawaid Daudpoto
Phone: +92-22772250-70 / **Ext.:** 2331

a. Dedicated Faculty:

Professor:
Dr. Jawaid Daudpoto
PhD, United Kingdom.

Assistant Professors:
Dr. Saifullah Samo
PhD, China.

Dr. Shadi Khan Baloch
PhD, Turkey.

Engr. Raheel Ahmed Nizamani
M.E., Pakistan.

Lecturer:
Engr. Adrash Ali
M.E., Pakistan.

Engr. Aeeman Soomro
M.E., Pakistan.

Engr. Memona Memon
M.E., Pakistan.

b. Shared Faculty:

Assistant Professors:
Engr. M. Atif Qaimkhani
M.E., Pakistan.

Engr. Imtiaz Ali Memon
M.E., Pakistan.

Mr. Arbab Ali Samejo
M.E., Pakistan.

Engr. Abdul Jabbar Memon
M.E., Pakistan.

Dr. Wahid Bux Mangrio
PhD, Pakistan.

Mr. Abdul Saleem Memon
M.Phil., Pakistan.

Lecturers:
Dr. Mahesh Kumar Rathi
PhD, Malaysia.

Engr. Shoaib Shaikh
M.E., Pakistan.

Engr. Faheem Shafeeque Channar
M.E., Pakistan.

Mr. Shafqat Shahzoor Chandio
M.Phil., Pakistan.

4.4.3 Laboratory Facilities

Following lab facilities are available to students of Mechatronic Engineering.

1. Instrumentation Lab.
2. Robotics & Control Lab.
3. Computer Lab.
4. Modeling & Simulation Lab.
5. Mechatronic System Design Lab.
6. Circuit Design & Project Lab.
7. Computer Lab
8. Engineering Drawing Lab.
9. Engineering Mechanics Lab.
10. Fluid Mechanics Lab.
11. Workshop
12. Material Testing Lab
13. Thermodynamics Lab.

14. Mechanics of Machines Lab.
15. Mechanical Vibration Lab.
16. Equipment and Training Lab.
17. Electrical Circuit and Measurement Lab.
18. Power Electronics and Control Lab.
19. Digital System Design Lab.
20. Analog Electronics Lab.
21. Embedded Systems Lab.
22. Computer Integrated Manufacturing (CIM) Lab

4.4.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	MTH108	Applied Calculus	3	0
	EN101	Functional English	3	0
	EL117	Applied Physics	2	1
	CS191	Computer Programming	2	1
	ME106	Engineering Statics	3	1
	ME116	Engineering Materials	2	0
		Total	**15**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	ME126	Engineering Drawing and Computer Graphics	2	2
	IS111 / SS104	Islamic Studies / Ethics	2	0
	PS106	Pakistan Studies	2	0
	MTH112	Linear Algebra and Analytical Geometry	3	0
	EL125	Linear Circuit Analysis	2	1
	ME136	Fluid Mechanics	2	1
	ME146	Workshop Practice	0	1
		Total	**13**	**05**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
3rd Semester	ME206	Mechanics of Materials	2	1
	MTE201	Actuating Systems	3	1
	ME216	Engineering Dynamics	3	0
	CS291	Data Structures and Object-Oriented Programming	2	1
	ES216	Digital Logic Design	2	1
	MTH227	Ordinary and Partial Differential Equations	3	0
		Total	**15**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
4th Semester	MTH217	Laplace Transforms and Discrete Mathematics	3	0
	ME226	Fundamentals of Thermal Sciences	3	1
	ES246	Electronic Devices and Circuits	3	1
	ME236	Mechanics of Machines	3	1
	MTE211	Instrumentation and Measurements	3	1
		Total	**15**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
5th Semester	MTH336	Numerical Analysis and Computer Applications	3	1
	ES316	Microcontroller and Embedded Systems	3	1
	TL301	Signals and Systems	2	1
	ME306	Mechanical Vibrations	3	1
		Total	**11**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
6th Semester	MTH317	Statistics and Probability	3	0
	MTE301	Control Systems	3	1
	ME316	Machine Design and CAD / CAM	3	1
	EN113	Communication Skills	2	0
	EL329	Power Electronics	3	1
		Total	**14**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
7th Semester	ME406	Engineering Economics and Project Management	3	1
	MTE401	Robotics	3	0
	CS492	Digital Signal & Image Processing	3	1
	ME416	Manufacturing Processes	3	1
	MTE499	Project / Thesis –I	0	3
		Total	**12**	**06**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
8th Semester	CS491	Machine Intelligence	3	1
	MTE411	Mechatronic System Design	2	1
	MTE421	Industrial Automation	2	1
	EE425	Safety, Health and Environment	3	0
	STD951	Entrepreneurship	2	0
	MTE499	Project / Thesis -II	0	3
		Total	**12**	**06**

4.5 Department of Metallurgy and Materials Engineering

4.5.1 The Department

The Department of Metallurgy & Materials Engineering is one of the leading departments in the engineering disciplines at Mehran UET. Metallurgy & Materials Engineering is an inter-disciplinary field, that spanning the physics and chemistry of matters, industrial manufacturing processes and engineering applications. The scope of Metallurgy and Materials Engineering is to produce the metallic and nonmetallic materials of desired shapes and properties. The advancement in technology is escalating with time therefore department aims to incorporate and accommodate the new trends in materials.

The mission of Metallurgy and Materials Engineering program is to produce material engineers and scientists with adequate understanding of structure-property-processing-performance relationships for engineering materials. Metallurgy and Materials Engineering is the only discipline in Mehran UET which is equipped with advanced research equipment and highly qualified academics staff, including research fellows. Henceforth, research activity traverse around all the important area of Metallurgy & Materials Engineering, which includes energy, bio-medical and synthesis of advanced materials. The department has promoted the research environment due to which the students feel comfortable to work in research projects without the time restrictions. Moreover, department is playing dominate role in promoting the adequate research environment through facilitating research activities to students of rest academic disciplines of MUET and other institutions of Pakistan.

The Bachelor of Engineering program covers the subject from its foundations in physics and chemistry to the design, manufacture and applications of metals and their alloys, composites, nanomaterials and advanced materials. In order impart practical knowledge among' individual labs have been introduced. The Department also offers Master of Engineering (M.E.) and Doctor of Philosophy (Ph.D.) in Metallurgy and Materials Engineering, which at present is a part time evening program. The Department is continuing to grow and will be a nationally recognized leader in the education of students in the field of metallurgy and materials engineering. MME department has adopted the **out-come based education (OBE)** system on 2017 batch and onwards.

The scope of Metallurgy &Materials Engineering is truly vast. It is an inter-disciplinary field, which is covering almost all areas of engineering. If you are enthusiastic and do not yet wish to be limited to a single engineering discipline and are looking for a fascinating degree subject and career then our Bachelor of Metallurgy & Materials Engineering program could be for you.

Vision of the Department

The department intends to provide quality education in order to produce global leaders in the field of Metallurgy and Materials Engineering.

Mission of the Program

The program mission is to produce engineering graduates of metallurgy and materials, who become pillars and market leaders of the related industries through their expert knowledge and problem-solving attributes with sustainability approach and professional attitude.

Program Educational Objectives (PEOs):

Graduates in Metallurgy & Materials Engineering will have following key attributes:

PEO-1: Excel in the field of Metallurgy and Materials Engineering with adequate knowledge and technical skills considering sustainability aspects.

PEO-2: Contribute in solving the complex engineering problems and be in a leading position due to their acquired professional attributes.

PEO-3: Partake effectively for the development of society utilizing strong ethical values, communication and interpersonal skills.

4.5.3 The Faculty:

Chairman of the Department:
Prof. Dr. Muhammad Ishaque Abro
Phone:022-272250-73/ **Ext.:** 4500 - 4501

Professors:

Dr. Muhammad Ishaque Abro	**(**PhD, Pakistan)

Assistant Professors:

Mr. Ashfaque Ahmed Issani	**(**M.E., Pakistan)
Dr. Muhammad Wasim Akhtar	**(**PhD, Korea)
Dr. Umair Aftab	**(**PhD, Pakistan)
Mr. Shafique Ahmed	**(**M.E., Pakistan; on study leave)

Lecturers:

Dr. Imtiaz Ali Soomro	(PhD, Malaysia)
Mr. Muddassir Ali Memon	**(**M.E., Pakistan; on study leave)
Mr. Ayatullah Qureshi	**(**M.E., Pakistan)
Mr. Mukesh Kumar	**(**M.Phil., Pakistan; on study leave)

4.5.4 Laboratory Facilities

The department is also equipped with following laboratories, having latest equipment:

- Material Testing Lab-1
- Material Testing Lab-2
- Non-Destructive Testing Lab
- Sand Testing Lab
- Heat Treatment Lab
- Fabrication Lab
- Advanced Characterization Lab
- Materials Synthesis Lab
- Metallography Lab
- Electrochemical and Corrosion Lab
- Computer and Simulation Lab

4.5.5 The Courses

	Course Code	Subject Name	Credit Hour	
			Theory	**Practical**
1st Semester	MT131	Introduction to Engineering Materials	3	0
	MT132	Applied Chemistry	2	1
	MT133	Applied Physics	2	1
	MTH108	Applied Calculus	3	0
	IS111	Islamic studies	2	0
	SS104	Ethics (For Non-Muslims)		
	PS106	Pakistan studies	2	0
		Total	**14**	**2**

	Course Code	Subject Name	Credit Hour	
			Theory	Practical
2nd Semester	MT135	Mineral Processing	2	1
	MT136	Engineering Drawing and CAD	2	1
	MTH125	Linear Algebra and Differential Equation	3	0
	ENG101	Functional English	3	0
	CS115	Introduction to Computing and Programming	2	1
	ME176	Workshop Practice	0	2
		Total	**12**	**5**

	Course Code	Subject Name	Credit Hour	
			Theory	Practical
3rd Semester	MT231	Materials Thermodynamics	3	0
	MT232	Physical Metallurgy-I	3	0
	EE214	Industrial Safety & Environmental Engineering	3	0
	ENG201	Communication Skills	3	0
	ES292	Instrumentation & Control	2	1
		Total	**14**	**1**

	Course Code	Subject Name	Credit Hour	
			Theory	Practical
4th Semester	MT234	Iron and Steel Making Technology	3	0
	MT235	Non-Ferrous Metallurgy	3	0
	MT236	Mechanical Behavior of Materials	3	1
	MT237	Engineering Ceramics & Glasses	3	0
	MTH215	Numerical Methods & Computation	3	1
		Total	**15**	**2**

	Course Code	Subject Name	Credit Hour	
			Theory	Practical
5th Semester	MT331	Inspection and Testing of Materials	3	1
	MT332	Polymeric Materials	3	0
	MT333	Physical Metallurgy-II	3	1
	MT334	Advanced Steels	2	0
	ENG301	Technical and Scientific Writing	2	0
	MTH317	Statistics & Probability	3	0
		Total	**16**	**2**

	Course Code	Subject Name	Credit Hour	
			Theory	Practical
6th Semester	MT336	Foundry Engineering	3	1
	MT337	Powder Metallurgy	2	0
	MT338	Manufacturing Processes	3	1
	MT339	Welding & other Joining Processes	3	1
	MT340	Corrosion & Protection	3	1
	MT341	Composite Materials	2	0
		Total	**16**	**4**

	Course Code	Subject Name	Credit Hour	
			Theory	Practical
7thSemester	MT431	Heat Treatment Processes	3	1
	MT432	Advanced Materials & Nanotechnology	3	0
	MT433	Nuclear Metallurgy & Materials	2	0
	MT434	Research Methodology	2	0
	MT435	Metallurgical Plants and Quality Control	2	0
	MT499	Project	0	3
		Total	**12**	**4**

	Course Code	Subject Name	Credit Hour	
			Theory	Practical
8thSemester	MT437	Fracture Mechanics and Failure Analysis	3	1
	MT438	Design of Materials	2	0
	MT439	Computational Materials Science	2	1
	MT440	Tribology and Surface Engineering	2	0
	INM491	Entrepreneurship and Marketing	3	0
	MT499	Project	0	3
		Total	**12**	**5**

4.5.2 Career Opportunities

The graduates of this program earn the title of "Metallurgy and Materials Engineer", and can hunt their jobs in any public and private metal/materials working industries in inland and abroad. In Pakistan graduate can seek job opportunities in Peoples Steel Mill, Bolan Casting limited, Agha Steel Mill, Pakistan Machine tool factory, Heavy Mechanical Complex, Pakistan Ordinance Factory, Sui Southern Gas Company Pak Suzuki etc. Other interesting areas may be automotive industry, high tech ceramic industry. Graduates can work in many different areas and industries such as facilities that produce iron, steel, and non-ferrous metals (aluminum, copper, etc.), the metal casting industry, the automotive industry, traditional and high-tech ceramic manufacturing facilities, heat treatment companies, materials research and development centers, the defense industry, quality control firms, surveillance companies, oil and gas sector and biomedical applications.

4.6 Department of Mining Engineering

4.6.1 The Department

Pakistan is blessed with variety of mineral resources such as Iron, Copper, Gold, Bauxite, Granite, Marble, Lime Stone, Dolomite, China Clay (Kaolin), Bentonite, Chalk, Coal, Gravel, Calcite, Gypsum, Laterite, Silica sand, sand stone, phosphate rock, rare earth minerals etc.

Mineral resources play an important role in era of modern industries to produce variety of products iron, steel, copper and gold, nickel, aluminum, coal, coke, cement, ceramic, glass, salt, chalk, precious stones, marble, granite etc. Mineral sector often plays an important role in the development of economic growth in the developing and developed countries. Coal is used to produce electricity using clean coal technology. The brick kiln industry also relies on the lignite coal. Iron ore is the main ingredient used in iron and steel industries. Lime stone is used in the cement industry. Copper is use to produce electric wires, electronics and pipes for refrigeration. Gold and precious stones are used in the jewelry. Rare earth minerals are used as catalysts and alloys. Phosphate rock is used in the fertilizers. Kaolin is used extensively in the ceramic industry. Silica sand is melted to produce variety of glasses.

Mining Engineering deals with extraction of coal, metallic (ores) and non-metallic minerals from the earth. Mining Engineers learn how to assess the commercial aspect of mining project, to excavate minerals and ores from mining areas, apply process processing for enrichment of mineral products and sell the products to various modern industries.

The Department of Mining Engineering offers degrees in B.E. in Mining Engineering, M.E. in Mining Engineering and Ph.D. in Mining Engineering. The designed curriculum for “Mining Engineering” offers a complete package of the theoretical knowledge, practical experience, internships, health and safety courses, development of the academic, technical and professional skills to compete with national and international graduates.

The Department of Mining Engineering is actively engaged in various projects of national and strategic importance in the fields of coal mining, coal gasification and mineral processing, environmental aspects of mining activities. The department has developed a strong academic and research collaboration with University of Nottingham UK, Montan University, Leoben Austria, Hacettepe University, Turkey and China University of Mining and Technology, Xuzhou, China.

Vision of the Department

To provide excellent education in the field of Mining Engineering as per International Standards, and develop Research Based Solutions to Mining Industry, for National Development.

Mission of the Program

To produce Quality Professional Engineers with Problem Solving Expertise, Integrity and Strive to enhance their Skills and Ideas related to Mining industry.

Program Educational Objectives (PEOs)

To produce Mining Graduates who will be able to:

1. Demonstrate proficiency of applying the acquired knowledge & skills to solve engineering problem related to the exploitation of mineral resources.
2. Consider economic and environmental impacts on mining engineering projects and contribute to the society through their problem-solving attitude.
3. Exhibit effective communication, teamwork, leadership skills.
4. Pursue professional growth through moral and continuous learning attitude.

4.6.2 The Faculty

Chairman of the Department:
Dr. Fahad Irfan Siddiqui
Phone: 022-2771391, 022-2772260-73 **Ext.** 4600

Professor:
Dr. Abdul Ghani Pathan
PhD, United Kingdom.

Associate Professors:
Dr. Fahad Irfan Siddiqui
PhD. Pakistan

Mr. Parvez Ahmed Shakeel
Honorary, MSc., Pakistan.

Assistant Professors:
Mr. Saeed Ahmed Memon
B.E, Pakistan.

Mr. Sikandar Ali Channa
M.E. Pakistan

Mr. Safiullah Memon
M.E., Pakistan.

Dr. Munawar Ali Pinjaro
PhD, China.

Dr. Sultan Ahmed Khoso
PhD, China.

Lecturers:
Mr. Agha Shafi Muhammad Pathan
M.E., Pakistan.

Dr. Muhammad Raheel Memon
PhD, Turkey.

Mr. Mairaj Hyder Soomro
M.E., Pakistan (On Study Leave)

Mr. Muhammad Burhan Memon
M.E., Malaysia.

Mr. Saleem Raza Baloch
M.E., Pakistan.

4.6.3 Laboratory Facilities

The department has following well-equipped laboratories, which meets the academic needs of the students and faculty. These laboratories hold promise in providing superior consultancy services and supporting several research programs.

1. Rock Mechanics Laboratory
2. Mineral Processing Laboratory
3. Software Laboratory
4. Surveying and Mine Planning Laboratory
5. Mine Ventilation Laboratory
6. Advanced Research Laboratory

4.6.4 The Courses

	Course Code	Name of Subject	Credit Hours	
			Theory	Practical
1st Semester	MTH102	Applied Calculus	3	0
	PS106	Pakistan Studies	2	0
	IS111/SS104	Islamic Studies / Ethics	2	0
	MN121	Engineering Drawing	0	2
	ME181	Workshop Practice	0	2
	MN102	Mining Engineering Fundamentals	3	0
		Total	**10**	**4**

	Course Code	Name of Subject	Credit Hours	
			Theory	Practical
2nd Semester	EN101	Functional English	3	0
	MTH111	Linear Algebra and Analytical Geometry	3	0
	MN111	Applied Chemistry	3	1
	EL102	Electrical Technology	3	1
	CE115	Engineering Mechanics	3	1
		Total	**15**	**3**

	Course Code	Name of Subject	Credit Hours	
			Theory	Practical
3rd Semester	MTH201	Differential Equation & Fourier Series	3	0
	ENG201	Communication Skills	2	0
	MN201	General Geology	3	1
	ME292	Applied Thermodynamics	3	1
	CE265	Strength of Material	3	1
		Total	**14**	**3**

	Course Code	Name of Subject	Credit Hours	
			Theory	Practical
4th Semester	MN261	Mine Surveying	3	1
	CE285	Fluid Mechanics	3	1
	MN222	Mineralogy and Petrology	2	1
	MN232	Mineral Processing – I	2	1
	MN252	Coal Technology	2	1
		Total	**12**	**5**

	Course Code	Name of Subject	Credit Hours	
			Theory	Practical
5th Semester	MTH301	Numerical Analysis and Computer Programming	3	1
	MN312	Mineral Processing - II	2	1
	MN301	Structural Geology	3	0
	MN321	Rock Mechanics	3	1
	MN332	Mining Laws	2	0
	MN362	Mine Management	2	0
		Total	**15**	**3**

	Course Code	Name of Subject	Credit Hours	
			Theory	Practical
6th Semester	MTH317	Statistics and Probability	3	0
	MN381	Drilling and Blasting Engineering	3	1
	EN301	Technical and Scientific Writing	3	0
	MN351	Mine Ventilation	3	1
	MN391	Mineral and Ore Deposits	3	0
		Total	**15**	**2**

	Course Code	Name of Subject	Credit Hours	
			Theory	Practical
7th Semester	MN401	Strata Control	3	0
	MN442	Mineral Resource Estimations	2	1
	MN411	Mine Water and Dewatering Design	3	1
	MN422	Planning and Design of Underground Mines	3	0
	MN443	Mine Economics	2	0
	MN491	Project/Thesis-I	0	3
		Total	**13**	**5**

	Course Code	Name of Subject	Credit Hours	
			Theory	Practical
8th Semester	MN452	Computer Application to Mining Industry	0	2
	MN471	Mine Rescue and Safety	3	1
	MN462	Surface Mine Design and Practice	3	0
	MN482	Cement Technology	2	0
	MN491	Project / Thesis-II	0	3
		Total	**8**	**6**

4.6.5 Career Opportunities

A degree in Mining Engineering offers attractive careers in both private and public sectors. The graduates of the Mining engineering department are employed in various organization/industries including Directorate of Mineral Development, Government of Sindh, Sindh Coal Authority (SCA), Sindh Engro Coal Mining Company (SECMC), Sino-Sindh Resource Limited (SSRL), Sindh-Lakhra Coal Mining Company (SLCMC), Pakistan Atomic Energy Commission (PAEC), Pakistan Mineral Development Corporation (PMDC), and various other mineral related projects like; coal mines, cement Industries, mineral processing units, tunneling and underground excavations.

4.7 Institute of Petroleum and Natural Gas Engineering

4.7.1 The Institute

In view of facts and figures regarding the explored resources of petroleum reveal that the province of Sindh is the leading producer of oil and gas in Pakistan. This plays an important role in the economic growth and the maintaining lifeline of country's development. The exploration and production of these reserves offer broad spectrum of challenges and opportunities for the graduates and postgraduates to utilize their expertise and skills for the betterment and progress of the country.

At the very outset the Fuel Engineering department was established in Mehran UET in the province of Sindh in 1983 to provide the graduates an opportunity to serve in the oil & gas industry as Petroleum Engineers. Later on, as per recommendation of University Grants Commission (UGC), it was renamed as department of Petroleum & Gas Engineering.

Petroleum and Gas Engineering department has great history of Excellence through Innovation, pioneering and producing qualified graduates. In this regard, the tradition continued as the research and talent produced shapes the future of Institute of Petroleum & Natural Gas (IPNGE) in 1996. The Institute is offering BE, ME & PhD in Petroleum and Natural Gas Engineering. We are leading center of Excellence in Petroleum & Natural Gas Engineering recognized internationally for the quality of our teaching, training, and research.

The aim of higher studies in Petroleum Engineering is designed to equip students with the knowledge and skills to tackle the oil & gas industry challenges. Upon graduating students will be able to understand, frame and solve the most complex upstream problems in today's industry.

Students in the Institute come from a wide variety of urban and rural background of Sindh, Pakistan. Most of the graduates have been employed by oil and gas operating companies, services companies, refineries and marketing companies in country and abroad.

Technical and experimental studies carried out under the pioneer ship of the institute include standards and basic methods of research and exploration. These also include drilling simulation, reservoir simulation and natural gas measuring techniques which equally meet international standards.

The Institute has seminar hall with a capacity of 70 persons with latest audio-visual facilities. The Institute of Petroleum and Natural Gas Engineering and Society of Petroleum Engineers (SPE) is regularly arranging and conducting technical lectures / Short courses / initial and Final Seminars of research projects / thesis of undergraduate and postgraduate students and technical sessions in the facility. The Institute has air-conditioned Seminar Library with the original and latest books, research Journals, annual technical reports of Director General Petroleum and Concession Department (DGPC) and Hydrocarbon Development Institute of Pakistan (HDICP), Newsletters, thesis/projects of undergraduate and postgraduates in addition to e-resources of HEC.

Vision of the Institute

The visionary approach of our Institute is concentrated in Petroleum & Natural Gas Engineering towards international standards, technical achievements through research and producing competent Engineers to serve Petroleum Industry.

Mission of the Program

The mission of Institute of Petroleum & Natural Gas Engineering is to provide student focused excellent teaching and educational environment that nurtures the intellectual and professional growth of students, who will become leading human resources in upstream petroleum industry.

Program Educational Objectives (PEOs)

The program educational objectives (PEOs) of the curriculum are prepared on the basis of stakeholders' need and linked with different program learning outcomes. The PEOs of Bachelor of Petroleum& Natural Gas Engineering are:

1. To produce graduates who will demonstrate the application of the acquired skill set along with advanced knowledge of petroleum and natural gas industry to solve the complex engineering problems.
2. To produce graduates who can exhibit good communication, interpersonal and leadership skills, strong ethical values and commitment towards safety, health, environment, and society.
3. To produce graduates who will practice the acquired attributes of life-long learning, sustainability criteria and project management skills to tackle the modern challenges.

4.7.2 The Faculty

Director of the Institute
Prof. Dr. Abdul Haque Tunio
Phone: 022-2771241, 2772250-73 / **Ext.:** 4300

Professors:
Dr. Abdul Haque Tunio
PhD, Pakistan.

Associate Professors:
Dr. Muhammad Khan Memon
PhD, Malaysia.

Dr. Aftab Ahmed Mahesar
PhD, Pakistan

Dr. Khalil Rehman Memon
PhD, Pakistan

Assistant Professors:
Engr. Allah Dino Samoon
B.E, Pakistan

Engr. Naveed Ahmed Ghirano
M.E., Pakistan.

Engr. Muhammad Zubair
M.E., Pakistan.

Lecturers:
Engr. Abdul Qadir Shaikh
M.E., Pakistan.

Engr. Mukhtiar Ali Talpur
M.E., Pakistan

Dr. Ubedullah Ansari
PhD, China.

Engr. Irshad Ali Gopang
M.E., Pakistan.

Engr. Faisal Najam Abro
M.E., Pakistan.

Engr. Muhammad Ali Memon
M.E., Pakistan

Engr. Sohail Nawab
M.E., Pakistan.

Engr. Imran Ahmed HulioM.E., Pakistan.

Lab Engineer:
Engr. Ghulam Mustafa Kamboh
B.E., Pakistan.

Lab Supervisors:
Engr. Sheeraz Ahmed Soomro
M.E., Pakistan.

Engr. Habibullah Sargani
M.E., Pakistan

4.7.3 Laboratory Facilities

The following laboratories are available in the Institute with modern equipment and named as:

a) Petroleum Refinery Engineering
b) Gas Engineering
c) Drilling &Drilling Fluids
d) Production Engineering
e) Petrophysics
f) Reservoir Simulation
g) General / Oil Testing
h) PVT laboratory
i) Computer

These laboratories serve not only undergraduate and postgraduate students, but they also provide services to the researchers. Besides normal academic activities, the Institute, faculty and students are involved in research and development activities in collaboration with industries.

4.7.4 The Courses

The curriculum includes courses in reservoir analysis, drilling techniques, production techniques, processing, transmission, distribution, storage and economics of oil and natural gas. Additional subject such as geology, computer applications and programming, mathematics are also included in the courses. Regular visits of oil and gas field for up-to-date practical knowledge is the key feature of

the program. Well-equipped laboratories have been established to cover the practical aspect of the reservoir analysis, gas engineering, refinery process and drilling fluid properties. Students are facilitated with a computer laboratory with latest computers, where they can work on their projects, assignments and have access to the Internet facilities.

	Course Code	Name of subject	Credit Hours	
			Theory	Practical
1st Semester	PG-101	Fundamentals of Petroleum Engineering	3	0
	HU-101	Functional English	3	0
	PS-106	Pakistan Studies	2	0
	IS-111/SS-104	Islamic Studies / Ethics	2	0
	MTH-108	Applied Calculus	3	0
	EL-112	Applied Physics	3	1
		Total	**16**	**1**

	Course Code	Name of subject	Credit Hours	
			Theory	Practical
2nd Semester	WS-105	Workshop Practice	0	2
	ME-110	Engineering Drawing & Graphics	2	1
	ENG-111	Communication Skills	2	0
	PG-111	Applied Chemistry	2	1
	MTH-112	Linear Algebra &Analytical Geometry	3	0
	PG-121	Applied Geology	2	1
	PG-131	Applied Thermodynamics	2	0
		Total	**13**	**5**

	Course Code	Name of subject	Credit Hours	
			Theory	Practical
3rd Semester	ENG-215	Technical Report Writing & Presentation Skills	2	0
	EL-215	Introduction to Electrical Engineering	2	1
	PG-221	Petroleum Geology & Geo-Physical Prospecting	3	0
	MTH-223	Differential Equation & Complex Variable	3	0
	CS-231	Computer Programming & Software Applications	2	1
	CE-261	Fluid Mechanics	2	1
		Total	**14**	**3**

	Course Code	Name of subject	Credit Hours	
			Theory	Practical
4th Semester	PG-201	Petro physics	3	1
	PG-211	Drilling Engineering-I	3	1
	PG-222	Organizational Behavior	3	0
	PG-231	Properties of Reservoir Fluids	3	1
	CE-281	Mechanics of Materials	3	0
		Total	**15**	**3**

	Course Code	Name of subject	Credit Hours	
			Theory	Practical
5th Semester	PG-321	Reservoir Geo Mechanics	2	0
	PG-341	Drilling Engineering-II	3	1
	PG-361	Reservoir Engineering	3	1
	PG-371	Petroleum Refinery Engineering	3	1
	PG-381	Environment & Safety Management	3	0
		Total	**14**	**3**

	Course Code	Name of subject	Credit Hours	
			Theory	Practical
6th Semester	PG-301	Instrumentation & Process Control	2	1
	PG-311	Natural Gas Engineering	2	1
	MTH-321	Applied Numerical Methods	2	1
	PG-331	Gas Reservoir Engineering	3	1
	PG-351	Well Logging	2	1
		Total	**11**	**5**

	Course Code	Name of subject	Credit Hours	
			Theory	Practical
7th Semester	PG-401	Well Testing	3	1
	PG-411	Petroleum Production Engineering-I	3	1
	PG-421	Reservoir Simulation	3	1
	PG-441	Project Planning & Management	2	0
	PG-491	Final Year Project	0	3
		Total	**11**	**6**

	Course Code	Name of subject	Credit Hours	
			Theory	Practical
8th Semester	PG-451	Principles of Enhanced Oil Recovery	3	1
	PG-461	Petroleum Production Engineering-II	3	1
	PG-471	Unconventional Reservoirs	3	0
	PG-481	Petroleum Economics	2	0
	PG-491	Final Year Project	0	3
		Total	**11**	**5**

4.7.5 Carrier Opportunities:

Internship / Graduate Training Program:
The Institute also arranges summer internship to third/final year students with the coordination of oil and gas exploration and production companies operating in Pakistan. The internships enhance the knowledge of students and provide hands on experience. In the final year the students are assigned to work on a project related to the field operations. The project is usually designed and completed in collaboration with the petroleum industry. After completing graduation, the reputed oil/gas sectors are usually requiring top ten students for their graduate training program.

4.7.6 Linkage with National / International Organizations:

A Student Chapter of *Society of Petroleum Engineers (SPE) International "Mehran Student Chapter"* was also established at this Institute in 1998. The purpose to establish the chapter was to help the students in updating their relevant knowledge by organizing technical short courses, seminars, sessions and field trips. The chapter also helps the Institute to liaison with all the major national and multinational companies in the oil and gas sector in Pakistan.

The University signed an agreement with Pakistan Petroleum Ltd to establish a PPL Chair in the Institute. PPL Chair was populated on November 1, 2017 with main objective to strengthen academia-industry partnership for nurturing young talent informed with latest research and technology. The purpose of establishing PPL chair is to promote scientific research activities, strengthen the quality of academic programs offered by the institute, and high learning in the field of Petroleum engineering.

4.8 Department of Textile Engineering

4.8.1 The Department

The Department of Textile Engineering was established in 1993 for undergraduate program (i.e., Bachelor of Engineering (B.E) in Textile Engineering) with the aim of imparting the knowledge and skills in the field of textile materials, manufacturing and processing to the students as per international standards. Consequently, after graduation, students could contribute towards the development and modernization of Pakistan's Textile Industry and Services. This department is the first Textile Engineering Institute in Sindh province and Pakistan's first recognized institute by Pakistan Engineering Council. The department also offers masters and PhD programs in the field of Textile Engineering since 2005. Further, since 2016, the Outcome Based Education (OBE) system has been implemented in the department as per revised PEC accreditation manual 2014 and in pursuance of Washington Accord.

In addition of B.E, ME and PhD in Textile Engineering, the Department has started BS program in Garment Manufacturing since 2019.

Vision of the Department

Attending university is mainly considered a way to leverage promising career prospects, but university is also a unique opportunity where you can look at yourself and think about how you can benefit and grow personally from the experience. Our vision is to be an educational institution that provides an education at the international level and research-based solution providers to the industry.

Mission of the Program

B.E. Textile Engineering program aims to provide a quality education to produce professionals with adequate knowledge, skills and attitude for successful career. Most courses combine theory and practice. The theory elements draw from a range of areas including Spinning, Weaving, Wet Processing, and Textile Testing & Quality Control etc. The Practical element of the program involves looking at academic development, as well as educational strategies which involves developing communication skills, looking at future career aspirations, leadership and teamwork.

Program Educational Objectives (PEOs)

The PEOs are prepared on the basis of stakeholders' needs and linked with twelve program-learning outcomes. The PEOs of Bachelor of Textile Engineering describe that our graduates, 5 years after graduation, should be able to:

1 Participate in professional engineering practices with appropriate consideration for health and safety, environmental, legal, social and cultural aspects.
2 Conduct themselves as responsible professionals to complete their tasks/projects.
3 Pursue professional growth through moral and continuous learning attitude.

4.8.2 The Faculty

Chairman of the Department:
Prof. Dr. Zeeshan Khatri
Phone: 022-2771565

Professors:

Dr. Zeeshan Khatri
PhD, Japan.

Dr. Farooq Ahmed
PhD, Pakistan.

Associate Professors:

Dr. Mazhar Hussain Peerzada
PhD, England. (Lesion)

Dr. Alvira Ayoub Arbab
PhD, South Korea.

Dr. Anam Ali Memon
PhD, South Korea.

Dr. Abdul Wahab Jatoi
PhD, Japan.

Engr. Nadir Ali Rind
M.E., Pakistan.

Dr. Umaima Saleem Memon
PhD, Turkey.

Engr. Abdul Khalique Jhatial
M.E., Pakistan.

Dr. Awais Khatri
PhD, Australia.

Dr. Iftikhar Ali
PhD, South Korea.

Dr. Samander Ali Malik
D.Eng., Germany.

Mr. Abdul Wahab Memon
M.E., Pakistan.
(On Study Leave)

Dr. Naveed Mengal
PhD, South Korea.

Dr. Noor Ahmed Sanbhal
PhD, China.

Dr. Raja Fahad Qureshi
PhD, Pakistan.

Assistant Professors:

Dr. Sanam Irum Memon
PhD, Pakistan.

Dr. Rabia Almas Arain
PhD, Pakistan.

Lecturers:

Dr. Sadaf Aftab Abbasi
PhD, Australia.

Lab Engineer:

Dr. Pardeep Kumar Gianchandani
PhD, Italy.

Lab Supervisors:

Dr. Aijaz Ahmed Babar
PhD, China.

Engr. Aftab Ahmed Kumbhar
M.Phil., Pakistan.

Engr. Abdul Rahim Narejo
B.E, Pakistan.

Engr. Rashid Hussain Memon
M.E., Pakistan.

4.8.3 Laboratory Facilities

1. Yarn Manufacturing Lab
2. Weaving Lab
3. Knitting Lab
4. Textile Chemical Processing Lab
5. Color Research Lab
6. Garment Manufacturing Lab
7. Textile Testing and Quality Control Lab
8. Textile Composite lab
9. Nano-materials Research Lab
10. Functional Materials and Polymer Engineering Lab
11. Smart Organic Materials Research Lab

4.8.4 The Courses

	Course Code	Subject	Credit Hours	
			Theory	Practical
First Semester	TE111	Introduction to Textile Engineering	03	00
	TE112	Applied Chemistry	03	01
	TE113	Engineering Drawing and CAD	02	01
	MTH108	Applied Calculus	03	00
	IS111/SS104	Islamic Studies/Ethics	02	00
	PS106	Pakistan Studies	02	00
		Total	**15**	**02**

	Course Code	Subject	Credit Hours	
			Theory	Practical
Second Semester	TE121	Textile Raw Materials	02	00
	TE122	Applied Physics	03	01
	EL118	Basic Electrical and Electronics	03	01
	MTH115	Differential Equations and Laplace Transform	02	00
	TE123	Thermodynamics and Fluid Mechanics	03	01
	ME146	Workshop Practice	00	01
		Total	**13**	**04**

Third Semester	Course Code	Subject	Credit Hours	
			Theory	Practical
	TE211	Fiber Science	02	01
	TE212	Pre-Spinning Processes-I	02	01
	TE213	Fabric Preparatory Processes	02	01
	TE214	Textile Industry Utilities and Services	02	00
	ENG-101	Functional English	02	00
	CS115	Introduction to Computing	02	01
		Total	**12**	**04**

Fourth Semester	Course Code	Subject	Credit Hours	
			Theory	Practical
	TE221	Manufactured and High-Performance Fibers	03	00
	TE222	Pre-spinning Processes-II	02	01
	TE223	Textile Pretreatment	03	01
	TE224	Entrepreneurship	02	00
	MTH220	Numerical Analysis and Computer Applications	03	01
		Total	**13**	**03**

Fifth Semester	Course Code	Subject	Credit Hours	
			Theory	Practical
	TE311	Yarn Production Engineering	03	01
	TE312	Weaving Machines and Mechanisms	03	01
	TE313	Textile Colorants and Coloration	03	01
	TE314	Automation and Control Engineering	02	01
	ENG-402	Technical and Scientific Writing	03	00
		Total	**14**	**04**

Sixth Semester	Course Code	Subject	Credit Hours	
			Theory	Practical
	TE321	Advanced Spinning Techniques	02	01
	TE322	Fabric Design and Structure	02	01
	TE323	Color Physics	03	01
	TE324	Textile Testing and Quality Control	02	01
	ENG-301	Communication Skills	02	00
	MTH311	Statistics and Probability	03	00
		Total	**14**	**04**

Seventh Semester	Course Code	Subject	Credit Hours	
			Theory	Practical
	TE411	Knitted Fabric Manufacturing	03	01
	TE412	Textile Finishing and Coating	03	01
	TE413	Garment Manufacturing	03	01
	TE414	Engineering Economics	03	00
	TE498	Final Year Project-I	0	03
		Total	**12**	**06**

	Course Code	Subject	Credit Hours	
			Theory	Practical
Eight Semester	TE421	Nonwoven and Specialty Fabrics	02	00
	TE422	Denim Manufacturing and Processing	03	01
	TE423	Textile Sales and Marketing	02	00
	TE424	Environment, Health and Safety	03	00
	TE425	Engineering Project Management	02	00
	TE499	Final Year Project-II	00	03
		Total	**12**	**04**

4.8.5 Seminar Library

The department has a Seminar Library in addition to the Central Library of the University. The seminar library is well equipped with thousands of books and journals on Textile & Garments. The students are provided with a clam and serene environment to enhance their subject knowledge within the building.

4.8.6 Career Opportunities

After graduation, the candidate will be:

- able to secure academic position in Pakistan and abroad.
- able to join various textile industry sectors including manufacturing, processing, testing, merchandising, and auditing etc. in Pakistan and abroad.
- eligible for admission in Masters Degree Program (also PhD degree in some cases) in any reputed university in the country and around the globe. The areas of further study may be expanded to other Science, Engineering, Management and Applied Sectors such as Technical and Smart Textiles, Material Science & Nanotechnology, Environment, Medical, Automobile and Aerospace, Defense, and so on.

5. FACULTY OF SCIENCE, TECHNOLOGY & HUMANITIES

5.1 Bachelor of Science in Mathematics (BSM)

5.1.1 The Department (Department of Basic Sciences & Related Studies)

The faculty of this department teaches / offers various fundamental compulsory courses including Mathematics, Statistics, Computer Science, Pakistan Studies and Islamic Studies/ Ethics. Students are also assisted to understand theoretical work of Mathematics with the help of programming languages such as C++ and MATLAB in well-equipped computer laboratory of the department. The courses of Mathematics and Computer Sciences are also being taught to the Postgraduate students of the University by the faculty of Basic Sciences and Related Studies. In this way, this department is helping students to equip with necessary mathematical expertise to deal with problems being occurred in current technological era. The department also participates in offering short courses on various aspects of computer-oriented courses. The department currently comprises of 23 teachers of Mathematics, 03 teachers of Islamic Studies/Ethics, 03 teachers of Pakistan Studies,03 Visiting Faculty, 03 Teaching Assistants and 07 non-academic staff.

The extensive research work is also being carried out by the qualified faculty members of this department and produced PhD and M.Phil. students in the field of Mathematics.

The department commenced a 2-year M.Phil. and 4-year PhD program in Applied Mathematics from the year 2014. Presently, Department running two batches of M.Phil. in Applied Mathematics, which comprises of about 40 students. Whilst in 2019, BS (Mathematics) program has been launched and successively running with the satisfaction of the students.

This will help the students of Mathematics, Statistics, Physics and Engineering to further improve their qualifications and knowledge in Applied Mathematics and relevant fields.

Role of the Department

The department has main focus to provide overall knowledge of Mathematics and other subjects to not only students of this University but also other interested public across country and outside. Several faculty members of this department are maintaining their blogs and share academic notes and other things online for interested audience. This way the Department is providing global knowledge sharing and tries to continuously improve it. In addition, some of books in Mathematics on various courses are also written by our faculty members as author/co-author.

Achievements of the Department

- The success and the achievement of any academic institution and its departments can be gauged by the success and reputation enjoyed by its faculty members. In this context, department tries to hire position holders in subjects of Mathematics, Islamic studies and Pakistan studies from other universities. All faculty members hired here have strong academic record and mostly departmental and faculty positions to their credit and most of the faculty members are highly qualified with M.Phil. and PhD degrees and engaged in research with various disciplines of mathematics and their research work is published in National as well as international journals with high impact factors.
- Department produced 65 M.Phil. students and 02 PhD student in applied Mathematics and 20 PhD students are enrolled.
- Department regularly fulfills ISO objectives every year.
- Many of the consultancy projects have been successfully completed by the department.
- Established computational fluid dynamics laboratory from the project of "strengthen the laboratories" by Higher Education Commission

Future objectives of the Department

The (BSRS) department at MUET, will offer various specializations and a strong post-graduate program leading to PhD in Applied Mathematics including collaboration with the industries.

Vision of the Department:
The department of Basic Sciences and Related Studies aspires to the highest standards of excellence in teaching and service.

Program Educational Objectives (PEOs):
To skill students with the instinctive knowledge of Mathematics and its uses in all fields in general and engineering in particular and further to equip them for higher studies and research in different disciplines.

5.1.2 Laboratory Facilities

The department of Basic Sciences and Related Studies comprises of following two computer laboratories:

i. Computer Lab for Undergraduate Students
ii. Computer Lab for Postgraduate Students

Both of the labs have latest Corei-7 PCs with high-speed internet connection. Forty PCs for undergraduate lab are used for conducting C++ programming practical of students in addition to that same are being used for conducting various short courses related to C++, MATLAB, LaTeX and many others. The lab is extensively used by undergraduate student in order to complete their assignments and projects with the help of various software such as Microsoft Office etc.

Postgraduate lab consists of about ten PCs and mostly remained occupied by students of M.Phil., PhD and sometimes faculty members of the department. This lab plays a substantial role in order to meet research needs of Postgraduate students. Printers installed in both labs are accessed by postgraduate students and teachers to get hard copy of most needed research papers, proceedings and other official documents.

5.1.3 The faculty

Chairman of the department:
Prof. Dr. Asif Ali Shaikh
Phone: +92-22772250-70 / **Ext.:**2200

Professor:

Dr. Asif Ali Shaikh
PhD-Maths, Pakistan.

Dr. Syed Feroz Shah
PhD-Maths, China.

Dr. Muhammad Anwar Solangi
PhD-Maths, Pakistan.

Associate Professors:

Dr. Sania Qureshi
PhD-Maths, Pakistan.

Dr. M. Mujtaba Shaikh
PhD-Maths, Pakistan.

Assistant Professors:

Mr. Ghulam Abbas Mehar
M.A-Pakistan Studies, Pakistan.

Mr. Abdul Saleem Memon
M.Phil.-Maths, Pakistan.

Mr. Muhammad Urs Jhatial
M.Phil.-Maths, Pakistan.
(On Study leave)

Ms. Saima Bhatti
M.Phil.-Maths, Pakistan.
(On Study leave)

Ms. Fozia Shaikh
M.Phil.-Maths, Pakistan.
(On Study leave)

Mr. Imran Qasim Memon
M.Phil.-Maths, Pakistan.
(On Study leave)

Dr. Kashif Ali Abro
PhD-Maths, Pakistan.

Mr. Hammeer Abro
M.Phil.-Maths, Pakistan.

Mr. Ayaz Ali Siyal
M.Phil.-Maths, Pakistan.

Lectures:

Ms. Naseem Khalid Memon
M.Sc.-Maths, Pakistan.

Hafiz Abdul Aziz Memon
M.Phil.-Islamic Studies, Pakistan.

Mr. Shafqat Chandio
M.Phil.-Maths, Pakistan.

Hafiz Shoaib Ahmed Kalhoro
M.Phil.-Islamic Studies, Pakistan.

Mr. Mansoor Ali Bhagat
M.Phil.-Maths, Pakistan.

Mr. Javed Iqbal Larik
M.Phil.-Pakistan Studies, Pakistan.

Mr. Sarfraz Ali Banbhan
M.Sc.-Pakistan Studies, Pakistan.

Mr. Sher Khan Awan
M.Phil.-Maths, Pakistan.

Ms. Zaib-un-Nisa Memon
M.Phil.-Maths, Pakistan.
(On Study leave)

Mr. Ali Asghar Sangah
M.Phil.-Maths, Pakistan.

Hafiz Abdul Waheed Channa
M.Phil.-Islamic Culture, Pakistan.

Ms. Sara Mahesar
M.Phil.-Maths, Pakistan.

Mr. Prem Kumar
M.Phil.-Maths, Pakistan.

5.1.4 The Courses

Total Credit hours for four years 129

First year				
First Semester				
Sr. No.	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Calculus-I	MATH 105	3	100
2	Set Theory	MATH 110	3	100
3	Functional English	ENG 101	3	100
4	Islamic Studies/Ethics	IS 111/ SS 104	2	50
5	G-I* (Physics-I)	MEBP 101	3	100
6	Pakistan Studies	PS106	2	50
	Total		**16**	

First year				
Second Semester				
Sr. No.	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Calculus II	MATH 150	3	100
2	Discrete Mathematics& Graph Theory	MATH 155	3	100
3	Statistics & Probability	MATH 160	3	100
4	Communication Skills	ENG 102	3	100
5	Introduction to Computers	CS 130	3	100
6	G-II* (Physics-II)	EL 127	3	100
	Total		**18**	

Second year				
First Semester				
Sr. No.	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Differential Equations & Fourier Series	MATH 205	3	100
2	Linear Algebra	MATH 210	3	100
3	G-III* (Economics)	ECO 230	3	100
4	Technical Report Writing & Presentation Skills	ENG 215	3	100
5	Statics &Vector Analysis	MATH 250	3	100
	Total		**15**	

Second year				
Second Semester				
Sr. No.	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Dynamics	MATH 255	3	100
2	Number Theory	MATH 270	3	100
3	Computer Programming C++, Matlab	MATH 260	3	100
4	Group Theory	MATH 265	3	100
5	Topology	MATH 275	3	100
	Total		**15**	

Third year				
First Semester				
Sr. No.	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Algebraic Topology	MATH 305	3	100
2	Differential Geometry & Tensor Analysis	MATH 310	3	100
3	Partial Differential Equations	MATH 315	3	100
4	Real Analysis- I	MATH 320	3	100
5	Rings & Fields	MATH 350	3	100
	Total		**15**	

Third year				
Second Semester				
Sr. No.	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Introduction to Simulator Software	MATH 370	2+1	100
2	Transforms	MATH 355	3	100
3	Complex Analysis	MATH 360	3	100
4	Analytical Dynamics	MATH 375	3	100
5	Real Analysis-II	MATH 365	3	100
	Total		**15**	

Fourth year				
First Semester				
Sr. No.	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Numerical Analysis-I	MATH 405	3+1	150
2	Functional Analysis	MATH 410	3	100
3	Fluid Mechanics	MATH 415	3	100
4	Optimization Techniques	MATH 420	3	100
5	Mathematical Physics	MATH 425	3	100
	Total		**16**	

Fourth year				
Second Semester				
Sr. No.	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Inferential Statistics	MATH 470	3	100
2	Numerical Analysis-II	MATH 480	3+1	150
3	Integral Equations	MATH 465	3	100
4	Econometrics	MATH 455	3	100
5	Operation Research	MATH 460	3	100
6	Comprehensive Viva-Voce	MATH 499	3	100
	Total		**19**	

This list may be extended with consent of Board of Studies keeping in view the availability of expertise in University.

* The courses G-I, G-II, G-III may be chosen from following titles.

G-I	G-II	G-III
Physics-I	Physics-II	Economics
Chemistry	Accounting	Sociology
Philosophy	Environmental Sciences	

5.2 Bachelor of Business Administration (BBA)

5.2.1 The Institute (Mehran University Institute of Science, Technology and Development)

Mehran University Institute of Science, Technology and Development (MUISTD) is established with the objectives to produce highly qualified and skilled manpower at MS, MBA and PhD degree levels; and to formally train the existing personnel already in-charge in the field. MUISTD helps in conduct research on different aspects of effective and viable. S&T policy frame work and their strategic management to achieve these objectives. It is established to be a center of excellence for teaching, training and research required to respond to the modern-day challenges with focus on issues relating to development, management, and resisting the exploitation of human, natural and other resources. The clients of teaching, trainings and research results of this institute are; universities, Research & Development organizations, Government, National and International Business, individuals in public and private sectors.

Mission of the Program

To produce highly skilled professionals equipped with capacity of ***Knowledge creation and transfer*** under relevant degree in the field of Science, Technology, Innovation and Entrepreneurship (STIE) for viable business management, conduct of research and building of triple helix relationship among academics, industry and government to promote fast growth of economy.

Why Bachelors of Business Administration (BBA) at MUISTD?

In the era of corporate competition, the professional managers and decision makers require capabilities to perform exceptionally well and undertake informed, knowledgeable and visionary decisions in consonance with effective policies. MUISTD produces the human resource to respond to such dynamic business environment through Business Administration programs.

BBA at MUISTD aims to produce not only managers but entrepreneurs who can launch their ventures for self-sustaining future and the educational programs offered are designed to produce such qualified manpower with experience of conceiving and designing innovative business models with expertise of managing financial and non-financial issues associated with businesses. The program builds students' potential and enables them to build a balance between targets of economic success and limitations of increasing social and environmental responsibilities.

5.2.2 The Faculty

Director of MUISTD
Prof. Dr. Arabella Bhutto
Phone: 022-2772255 / **Ext.:** 6700 - 04

Professor

Dr. Arabella Bhutto
PhD, UK and Postdoc, USA.

Dr. Zahid Ali Memon
PhD, China.

Dr. Iqbal Panhwar (Adjunct)
PhD, SAU.

Associate Professor

Dr. Iffat Batool Naqvi
PhD, Austria.

Dr. Kamleshwer Lohana
MS. Australia, PhD, UoS.

Dr. Adnan Pitafi
PhD, China.

Assistant Professor

Dr. Shah Muhammad Kamran
PhD, China.

Dr. Arifa Talpur
PhD, UoS.

Lecturer

Mr. Waqar Sether
MPA, UoS and MS, MUET.

Ms. Mahvish Khaskhely
MBA, Bahria University.

Mr. Abdul Salam Mallah
MBA, IBA.

Ms. Tooba A. Hashmi
MBA, SZABIST.

Ms. Ghazala Tunio
MBA, SZABIST.

5.2.3 The Courses

1st Semester			
Course Code	**Subject Name**	**Credit Hour**	
		Theory	**Practical**
ENG111	Functional English	03	00
MTH120	Basic Mathematics	03	00
SS111/SS104	Islamic Studies/Ethics*	02	00
PS106	Pakistan Studies	02	00
MGT111	Introduction to Business	03	00
ACT111	Principles of Accounting	03	00
ICT111	Computer Applications in Business	02	01
	Total	**18**	**01**

* Optional for Non-Muslim Students only

2nd Semester			
Course Code	**Subject Name**	**Credit Hour**	
		Theory	**Practical**
MKT121	Principles of Marketing	03	00
ENG122	English Composition	03	00
ECO121	Microeconomics	03	00
MGT122	Principles of Management	03	00
ENT121	Introduction to Entrepreneurship & Creativity	03	00
MTH122	Business Mathematics	03	00
	Total	**18**	**00**

3rd Semester			
Course Code	**Subject Name**	**Credit Hour**	
		Theory	**Practical**
FIN211	Introduction to Business Finance	03	00
ECO212	Macroeconomics	03	00
FLN211	Foreign Language – I (Chinese)	03	00
GEN211	Social Psychology and Personal Development	03	00
ENG213	Business Communication	03	00
MTH225	Statistical Method and Probability	03	00
	Total	**18**	**00**

4th Semester			
Course Code	**Subject Name**	**Credit Hour**	
		Theory	**Practical**
ACT222	Cost Accounting	03	00
MGT223	Organizational Behavior	03	00
ENT222	Business Modeling and Design Thinking	03	00
FLN222	Foreign Language – II (Chinese)	03	00
FIN222	Financial Institutions and Markets	03	00
MTH230	Inferential Statistics	03	00
	Total	**18**	**00**

5thSemester			
Course Code	**Subject Name**	**Credit Hour**	
		Theory	**Practical**
ENT312	Social Entrepreneurship	03	00
HRM311	Human Resource Management	03	00
GEN312	Business Law	03	00
ICT312	Website Design and Application Development	02	01
MKT312	Customer Relationship Management	03	00
ACT313	Auditing	03	00
	Total	**17**	**01**

6th Semester			
Course Code	**Subject Name**	**Credit Hour**	
		Theory	**Practical**
MGT324	Supply Chain Management	03	00
MKT323	Marketing Management	03	00
GEN323	Globalization, Business and Development	03	00
MGT325	Agribusiness	03	00
ENT323	Entrepreneurial Finance & Marketing	03	00
FIN323	Financial Management	03	00
	Total	**18**	**00**

7th Semester			
Course Code	**Subject Name**	**Credit Hour**	
		Theory	**Practical**
MKT414	Marketing Analytics	03	00
MGT416	Business Research Methods	03	00
MGT417	Business Policy and Strategy	03	00
	Elective I (List attached)	03	00
	Elective II (List attached)	03	00
	Total	**15**	**00**

8th Semester			
Course Code	**Subject Name**	**Credit Hour**	
		Theory	**Practical**
GEN424	Corporate Social Responsibility	03	00
	Elective-III (List attached)	03	00
	Elective-IV (List attached)	03	00
MGT428	Business Plan	06	00
	Total	**15**	**00**

- A jury comprising of HoD, Focal Person of Internship, Manager IEC and two senior teachers will evaluate the student's business plan at the end of the 8th semester.
- Students can opt any four courses from their respective specialization.
- Maximum 4 weeks internships at the end of 2nd and 3rd Year.
- Internship at the end of 2nd year may preferably be undertaken in a social enterprise i.e., SOS Village, Edhi Foundation, Salami Welfare Trust, etc.

Finance Elective Courses

Course Code	Subject Name	Credit Hour	
		Theory	Practical
FIN401	Analysis of Financial Statement	03	00
FIN405	Corporate Finance	03	00
FIN410	Financial Risk Management	03	00
FIN415	Investment and Portfolio Management	03	00
FIN425	Venture Capital and Private Finance	03	00
	Total	**15**	**00**

HRM Elective Courses

Course Code	Subject Name	Credit Hour	
		Theory	Practical
HRM401	Career Management and Planning	03	00
HRM410	Compensation Structure Development	03	00
HRM415	Job Analysis and Performance Appraisal	03	00
HRM430	Organizational Development	03	00
HRM440	Personnel Management	03	00
	Total	**15**	**00**

Marketing Elective Courses

Course Code	Subject Name	Credit Hour	
		Theory	Practical
MKT401	Advertising and Promotion	03	00
MKT410	Brand Management	03	00
MKT415	New Product Development	03	00
MKT430	Personal Selling	03	00
MKT440	Marketing Issues in Pakistan	03	00
MKT450	Experiential Marketing	03	00
	Total	**15**	**00**

5.2.4 Laboratory Facilities

The Institute owns two computer labs, Lab – I and Lab – II, which provides high-speed Internet and e-mail facilities to the research students. In addition, these labs also encourage students to use SPSS and Project management software for their research particularly in data analysis.

5.2.5 Seminar Library

The Institute has a seminar library available, which provides the learners with latest books, Journals and Research reports in the relevant field. In addition, students will also be able to use the HEC Digital Library.

5.2.6 Social Space

The Institute has inclusive cafeteria to provide quality food and beverages to students; and are encouraged to self-service and organizing events around social space area.

5.2.7 Career Opportunities

There are thousands of opportunities for candidates with BBA degree and the degree program at MUISTD prepares for careers including Accountants, Financial advisors, Marketers, Commodity traders, Loan officers, Real estate agents, Managers and Entrepreneurs etc. Depending upon aptitude of graduate, options are available to work with national and international organizations including Small and Medium Enterprises and Multinational organizations.

5.3 Bachelor of Studies in English (BSE)

5.3.1 The Directorate (Directorate of English Language Development Center)

In 1988 English Language Development Centre was established in collaboration with the British Council and the University Grants Commission (Presently the Higher Education Commission of Pakistan) at Mehran UET, Jamshoro. ELDC was initially run by a British Director Prof Brian Bamber. During this project the faculty members were awarded scholarships to pursue Masters in ELT/TESOL from British and American universities. After Mr. Bamber, Prof. Bodlo M. Hassan took over as Director who received ELT training from UK and administrative training from USA. Mr. Bodlo contributed the best way he could in field of research and development and helped ELDC get going very successfully. He initiated Teachers' Education and staff training courses for School, College and University teachers and officers. The ELDC is relocated to its new state of the art building at MUET Jamshoro. The ELDC was amongst 5 shortlisted institutions in public universities of Pakistan which were considered by English Language Teaching Reforms Project (ELTR) of HEC Pakistan for establishment of National Centre for English Language Teaching and Research. The ELTR Project of the HEC of Pakistan has recently established the state-of-the-art self-access center at the ELDC MUET. This is the first SAC in province Sindh and hub of teachers' training in the province. The SAC offers training on Computer Assisted Language Learning (CALL) and Internet based learning (IML). Catering to the needs of the teacher community, ELDC has successfully started its MS/MPhil and PhD program in field of Applied Linguistics since 2014. ELDC has also successfully started its BS English Program from 2019.

MUET Mission

To equip our undergraduate, postgraduate and doctoral students with advance knowledge through collaborative opportunities emerged from linkages with academia, industry and government.

Vision of CELL

Centre of English Language and Linguistics seeks to develop the knowledge through appropriate pedagogies in bridging the gap between research and academics in the fields of English Language and Linguistics to be imparted among the students, who will lead the world of academics and research.

Mission of CELL

CELL is committed to prepare qualified human resource by advancing, applying, and imparting knowledge in English Language Education and Applied Linguistics through comprehensive educational programs, research in collaboration with industry and government, and dissemination through scholarly products.

Mission of BS Program

To prepare qualified human resource in the field of English linguistics for socio-economic development of the country and engage the learners in a constructive dialogue on linguistic and literary issues and developments nationally and internationally.

Objectives of CELL:

- To Assist BS English students, understand core concepts of linguistics.
- The BS English program aims to equip students with an understanding of key issues and research finding in methodology, theory and analysis, and the underlying values and principles of the field, and with the skills to make a significant professional contribution to the field
- To assist various departments of the University in terms of teaching English as a compulsory and foundation course as required by HEC curriculum policy, Pakistan.
- To teach technical writing as to give them academic and professional edge in their various composition challenges of their field.
- To arrange various co-curricular activities as to provide the students with ample opportunities to grow dynamically.
- To help improve the research standards in the field of Applied Linguistics by offering MS leading to PhD degree programs.

- To facilitate Teaching and Non-Teaching Staff of the University in coping with academic, professional and language-related challenges by providing them with the congenial training environment.
- To help the students learn effective communication by helping them develop both written and oral skills of communication
- To help them learn and practice different techniques for the improvement of their listening, reading, speaking and writing skills.
- To familiarize the students with the purpose, importance and different types of IELTS &TOEFL tests.
- To familiarize the students with the concept, style and format of GMAT, GRE & GAT and to explain the basic verbal, analytical and quantitative concepts in GMAT, GRE & GAT.

5.3.2 The Faculty

Professor & Director
Dr. Habibullah Pathan,
PhD (Glasgow), Postdoc (USA)

Associate Professor
Dr. Shumaila Aijaz Memon,
PhD (England), Postdoc (USA)

Assistant Professors
Dr. Sahiba Khatoon,
PhD (Malaysia), Master Trainer (Thailand)

Ms. Quratulain Mirza,
PhD Scholar (Pak)

Mr. Shoukat Ali Lohar,
PhD Scholar (Pak)

Adjunct Faculty
Ms. Rosy Ilayas,
M. Ed. TESOL (UK)

Lecturers
Mr Jam Khan Mohammad,
PhD Scholar (Pak)
Ms. Sadia Aftab Memon,
English Linguistics (Pak)
Ms. Sania Memon,
MS in English Linguistics (Pak)
Mr. Syed Waqar Ali Shah,
PhD Scholar (Finland)

Ms Um-e-Farwa Thalho,
M.phil. in English (Pak)

Mr Ali Raza Khoso,
PhD Scholar (Pak)

Ms. Shazia Khokhar,
MS English Linguistics (Pak)

Ms. Shamshad Junejo,
MS in English Linguistics (Pak)

Lecturers (On Contract)
Mansoor Ahmed Memon,
PhD Scholar (Pak)

Ume Rabab Shah,
PhD Scholar (Pak)

Nazia Koonj,
MS in English Linguistics (Pak)

Faiza Qureshi,
M.phil. in English Literature (Pak)

Visiting Faculty
Saeed Ahmed Rind,
MS in English Linguistics (Pak)

5.3.3 Semester-wise Breakup of BS English Courses

	Course code	Course Title	Course Type	Credit Hours
1st Semester	ELL101	Functional English I	Compulsory	3
		Pakistan Studies	Compulsory	2
		Introduction to Computers	General	3
		Islamic Studies/Ethics	Compulsory	2
	ELL114	Introduction to Lit. I: (Poetry & Drama)	Major	3
	ELL117	Introduction to Linguistics	Major	3
		Total		**16**

	Course code	Course Title	Course Code	Credit Hours
2nd Semester	ELL121	Functional English II	Compulsory	3
		Basic Mathematics	Compulsory	3
		Entrepreneurship	General	3
		Environmental Sciences	General	3
	ELL133	Introduction to Lit. II: (Medieval to Romantics)	Major	3
	ELL137	Phonetics & Phonology	Major	3
		Total		**18**

3rd Semester	Course code	Course Title	Course Type	Credit Hours
	ELL241	Academic Reading and Writing	Compulsory	3
	ELL245	Communication Skills I	Compulsory	3
		Statistics and Probability	General	3
		Organizational Behavior	General	3
	ELL255	Short Fictional Narratives	Major	3
	ELL259	Semantics	Major	3
		Total		**18**

4thSemester	Course code	Course Title	Course Type	Credit Hours
	ELL263	Communication Skills II	Compulsory	3
		Human Resource Management	General	3
	ELL271	Introduction to Philosophy	General	3
	ELL275	Grammar and Syntax	Major	3
	ELL279	Introduction to Morphology	Major	3
	ELL281	Classical Poetry	Major	3
		Total		**18**

5th Semester	Course code	Course Title	Course Type	Credit Hours
	ELL304	Popular Fiction	Major	3
	ELL307	Sociolinguistics	Major	3
	ELL310	Foundations of Literary Criticism and Theory	Major	3
	ELL313	Psycholinguistics	Major	3
	ELL315	Language Testing & Evaluation	Major	3
	ELL317	English for specific purpose (ESP)	Major	3
		Total		**18**

6th Semester	Course code	Course Title	Course Type	Credit Hours
	ELL320	Technology in Teaching & Learning Languages	Major	3
	ELL322	Discourse Studies	Major	3
	ELL325	World Englishes	Major	3
	ELL327	Modern Poetry	Major	3
	ELL330	Introduction to Research Methodology	Major	3
	ELL332	Modern Novel	Major	3
		Total		**18**

7th Semester	Course code	Course Title	Course Type	Credit Hours
	ELL410	Modern Drama	Major	3
	ELL414	Content and Language Integrated Learning	Major	3
	ELL417	Second Language Acquisition	Major	3
	ELL420	Literary Theory and Practice	Major	3
	ELL422	Pakistani Literature in English	Major	3
	ELL425	Research Project	Major	3
		Total		**18**

8th Semester	Course code	Course Title	Course Type	Credit Hours
	ELL427	Syllabus Designing	Major	3
	ELL430	Stylistics	Major	3
	ELL433	Postcolonial Literature	Major	3
	ELL436	Introduction to Women's Writing	Major	3
	ELL440	Research Project	Major	3
		Total		**15**

5.4 Bachelor of Science in Computer Science (BSCS)

5.4.1 The Department (of Computer Systems Engineering)

Computer Science is a discipline that integrates the study of Computers & Computational Systems. Principle areas of study within computer science includes artificial intelligence, computer systems & networks, security, database systems, human computer interaction, vision & graphics, numerical analysis, programing languages, software engineering and theory of computing.

The problems that computer scientists encounter range from the abstract determining what problems can be solved with computers and the complexity of the algorithms that solve them to the tangible designing applications that perform well on hand-held devices that are easy to use that uphold security measures.

Given the rapid rate of change within technology, computer system engineers need to have a thirst for learning to keep up with the latest developments. Computer science majors must also be curious about the world around them since programs and systems are applied to every possible area of real life and its betterment.

The Department of Computer Science is leaving no stone unturned to achieve its transformation to practice in true spirit the education system based on outcome-based education (OBE) system.

Vision of the Department

Build a strong research and teaching environment that responds swiftly to the challenges of the current era.

Mission of the Department

To produce computer science graduates to design and develop quality software solutions, be able to work successfully within challenging environments and will be good professionals.

Program Educational Objectives (PEOs)

The program educational objectives (PEOs) were prepared by the OBE implementation committee for outcome-based education implementation and approved through the Board of Studies, Board of Faculty and Academic Council. The PEOs were prepared on the basis of stakeholders' needs and linked with ten program learning outcomes. The PEOs has been published on official webpage of the department at Mehran University website and has been displayed at various notice boards of the department. The PEOs of Bachelor of Computer Science describe that our graduates, 3-5 years after graduation, should be able to:

1. To produce graduates who performs professional based on the acquired computer engineering knowledge and analytical skills with continual improvement.
2. To produce graduates who ensures rationalism and ethics in a multicultural, diversified environment.
3. To prepare graduates who is a team player and capable to demonstrate communication and management skills with an approach towards problem solving.

5.4.2 The Faculty

Chairman of the Department
Dr. Shahnawaz Talpur,
Phone: 92-22 2772276, 92-22 2772250-73 /**Ext.:** 4202

Associate Professors:

Dr. Shahnawaz Talpur
PhD, China.

Dr. Adnan Ashraf
PhD, Pakistan

Mr. Fawad Ali Mangi
M.E., Pakistan.
(On Study Leave)

Mr. M. Moazzam Jawaid
Ph.D. United Kingdom

Dr. Sanam Narejo
PhD, Italy.

Dr. Sammer Zai
PhD, South Korea.

Dr. M. Ahsan Ansari
PhD, South Korea.

Dr. Bushra Naz
PhD, China.

Assistant Professors:
Mr. Arbab Ali Samejo
M.E., Pakistan.

Ms. Zartasha Baloch
M.E., Pakistan.

Mr. Rizwan Badar Baloch
M.E., Pakistan.

Dr. Irfan Ali Bhacho
PhD, South Korea.

Ali Asghar Manjotho,
PhD, China (Under Process)

Lecturers:
Mr. Salahuddin Jokhio
M.E., Pakistan.
(On Study Leave)

Mr. Shakeel A. Jokhio
M.E., Pakistan.

Ms. Haleema Memon
M.E., Pakistan.

Ms. Anum Memon
M.E., Pakistan.

Ms. Madeha Memon
M.E., Pakistan.

Ms. Sofia Hajano
M.E., Pakistan.

Dr. Sorath Hansrajani
PhD, Italy.

5.4.3 Laboratory Facilities

Following state-of-the-art laboratories are available for the students where hands-on experiences provided. These laboratories provide high speed internet services in centralized environment.

1. Computing Lab-I
2. Computing Lab-II
3. Microprocessor Lab
4. Communication Lab
5. Advance Software Engineering & Research Lab
6. Multimedia and Visual Design Studio Lab
7. Data Management and Internet Lab
8. Software Development Lab

5.4.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	CSC-101	Computer Fundamentals	3	1
	CSC-102	Computer Programming Concepts	3	1
	IS-111/SS-104	Islamic Studies/Ethics	2	1
	PS-106	Pakistan Studies	2	0
	MATH-108	Applied Calculus	3	0
		Total	**13**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	CSC-151	Object Oriented Programming	3	1
	ENG-101	Functional English	2	0
	ES-112	Basic Electronics	3	1
	EL-116	Applied Physics	3	1
	MATH-112	Linear Algebra and Analytical Geometry	3	0
		Total	**14**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
3rd Semester	CSC-201	Digital Logic and Design	3	1
	CSC-202	Web Technologies	3	1
	CSC-203	Data Structures and Algorithms	3	1
	CSC-204	Database Systems	3	1
	MATH-228	Discrete Mathematics	2	0
		Total	**14**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
4th Semester	CSC-251	Computer Organization and Assembly Programming	3	1
	CSC-252	Computer Graphics and Animations	3	1
	MATH-214	Statistics and Probability	3	0
	ENG-206	Communication Skills	2	0
		Elective-I	3	1
		Total	**14**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
5th Semester	CSC-311	Operating Systems	3	1
	CSC-311	Computer Networks	3	1
	MGT-122	Principles of Management	2	0
	MATH-319	Numerical Analysis	3	0
		Elective-II	3	1
		Total	**14**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
6th Semester	CSC-351	Software Engineering	3	0
	CSC-361	Theory of Automata	3	0
	CSC-371	Microcontroller & Embedded Systems	3	0
	ENG-319	Technical & Business Writing	3	0
		Elective-III	3	1
		Total	**15**	**01**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
7th Semester	CSC-401	Distributed Computing	3	0
	CSC-411	Artificial Intelligence	3	1
	MGT-426	Organizational Behavior	2	0
	CSC-498	Thesis Project-I	3	3
		Elective-IV	0	0
		Total	**11**	**04**

8th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	CS-451	Data Science and Analytics	3	1
	ENT-421	Entrepreneurship	3	0
	CSC-461	Human Computer Interaction	3	0
	CSC-499	Thesis Project-II	0	0
		Elective-V	3	3
		Total	**12**	**04**

CS Electives:

Elective Course	Course Code	Course Title	Credit Hours (Th + Pr)	Pre-Requisite
Elective-I	CSC-261	Data warehousing	3+1	Database Systems
	CSC-271	Object Oriented Analysis and Design	3+1	Object Oriented Programming
Elective-II	CSC-321	Algorithms and Complexity	3+1	Data Structures and Algorithms
	CSC-331	Compiler Construction	3+1	Computer Programming Concepts
Elective-III	CSC-381	Big Data Analytics	3+1	Object Oriented Programming
	CSC-391	Mobile Application Development	3+1	Object Oriented Programming
Elective-IV	CSC-421	Internet of Things	3+1	None
	CSC-431	Cyber Security	3+1	Computer Networks
Elective-V	CSC-461	Natural Language Processing	3+0	Artificial Intelligence
Elective-V	CSC-471	Block Chain Technologies	3+0	None

CQI Mechanisms

The procedures for reviewing and revising the program conduct and attainment of PEOs, PLOs and CLOs and to ensure the correct actions for continuous quality improvement are performed by different committees. **Departmental Management Review Committee (DMRC)** and **Curriculum Revision Committee (CRC)** are responsible to design, update and revise the curriculum of the Department of Computer Science, from time to time depending on need of industry and suggestions given by stakeholders. The establishments and revisions are then approved through Board of Studies, **Board of Faculty and Academic Council. Industrial Liaison Committee (ILC)** is responsible to look after matters related to student and industry collaborations, such as internships, study visits, obtaining feedback from alumni/industry stakeholders, communicating job opportunities for graduating students, managing job recruitment in industries and other related activities. **Final Year Project Committee (FYPC)** is responsible to facilitate students for creating final year project groups, planning project presentations in different phases, and maintaining, managing theses records and other final year project related activities. **Industrial Advisory Board (IAB)** is responsible to facilitate departmental coordination with industry in order to prepare graduates that are ready for the industry.

5.4.5 Career Opportunities

The computerization of most facets of modern business and industry, together with the great demand for technical manpower creates a multitude of possibilities. As a career option that can allow an individual to be involved in the creation and implementation of a Computer Science, Computer Science graduates are professionals who are actively engaged in the process of matching current technology with the needs of a company. As part of this task, the Computer Systems graduate engages in the evaluation and installation of software, hardware, and other types of support equipment into a workable network that supports a

variety of functions within a corporation. The Computer Science graduate may function as an employee of the company, a representative of a computer components and hardware, or as an independent consultant. Moreover, the computer science graduate has a wide range of job opportunities available, including electronic, telecommunication and software engineering fields.

The Computer Science graduate finds employment in a wide variety of computerized environments such as hardware, software, networking, research and development, process or information control systems or a combination of the above mentioned. The engineer might specialize further in any one of these chosen fields. Responsibilities may include maintenance or optimization of such environments. Additional functions could include the design, development, and implementation of additional or new systems, liaison with other departments such as management, production and instrumentation as well as with clients is an important aspect of his job. The dedicated Computer Systems Engineer may seek a senior post such as filling the post of System Administrator, Lead System or Project Manager. Few more opportunities, such as, Computer Systems Analyst, Database Administrator and Manager, Information Security Analyst. The latest trendy disciplines like Machine Learning Engineer and Data scientist.

5.5 Bachelor of Science in Environmental Sciences (BSES)

5.5.1 The Center (US-Pakistan Center for Advanced Studies in Water)

U.S.-Pakistan Center for Advanced Studies in Water (USPCAS-W), has been established at Mehran UET, Jamshoro with the financial support of United States Agency for International Development (USAID) Pakistan under the Cooperative Agreement signed with USAID on Dec.12, 2014 for five years. The Center is dedicatedly training and building up the capacity of a new generation of engineers and water professionals in order to solve the water security challenges of the twenty-first century.

5.5.2 USPCAS-W Main Components

- Reforming curriculum for higher degree programs
- Implementing applied research agenda in water
- Strengthening capacities of faculty, students, and water practitioners
- Improving Center's governance
- Securing Center's sustainability

5.5.3 USPCAS-W Objectives

- Establish governance structures for sustainability and improved capacity of the USPCAS-W
- Improve curricula quality, strengthen use of effective teaching methods, upgrade graduate programs
- Apply relevant research to meet client (industry, civil society, government) needs
- Increases access for talented and economically disadvantaged students

5.5.4 Role of the Directorate/ Center / Section / Office

Academic Programs

The Center offers following programs for Undergraduate Studies:

i. Environmental Sciences (BS)

Center offers following Postgraduate Studies degree program:

i. Environmental Engineering (MS and PhD Program)
ii. Hydraulics, Irrigation and Drainage Engineering (MS and PhD Program)
iii. Integrated Water Resources Management (MS and PhD Program)
iv. Water, Sanitation and Health Sciences (MS Program)

Approved Academic Programs started in 2020-2021

- BS in Environmental Sciences

5.5.5 BS in Environmental Sciences at USPCAS-W

USPCAS-W has started four years BS Environmental Sciences program. The program aims to provide modern scientific knowledge and tools to students in the multidisciplinary field of Environmental Sciences. The program's students will provide solutions to various fundamental and contemporary environmental issues including pollution monitoring and management, environmental microbiology, groundwater modelling & remediation, application environmental biotechnology, GIS, climate change, environmental economics, water & wastewater treatment processes, and environmental laws & governance, etc. In accordance with the guidelines of Higher Education Commission, the skill development approach adopted for the program considers enhancement of secondary knowledge while providing specific information in the courses. The unique program will produce progressive leaders in the field of Environmental Sciences.

5.5.6 The Faculty

Director of the Center
Prof. Dr. Rasool Bux Mahar
Phone: 022-2109148 / **Ext.:** 8002

Co-Director of the Center
Dr. Kamran Ansari
PhD, UK, M.E., Malaysia & B.E, Pakistan.

Dr. Zubair Ahmed (Head of BS Environmental Sciences)
PhD & MS, Korea, M.Sc.& B.Sc., Pakistan.

Meritorious Professor:
Dr. Rasool Bux Mahar
Post Doc, USA, PhD, China, M.E. & B.E, Pakistan.

Emeritus Professor:
Dr. Bakhshal Khan Lashari
Post Doc, USA & Australia, PhD, Poland,
M.E. & B.E, Pakistan.

Professors:
Dr. Abdul Latif Qureshi
PhD, M.E. & B.E, Pakistan.

Dr. Muhammad Munir Babar
PhD, Japan, M.E., Pakistan& B.E, China.

Senior Research Fellow
Dr. Arjumand Zaidi
PhD & MS, USA, B.E, Pakistan.

Assistant Professors
Mr. Ghulam Hussain Dars
MS, USA, B.E, Pakistan.

Mr. Waqas Ahmed,
M.Sc., Germany, B.E, Pakistan.

Dr. Syeda Sara Hassan
PhD, M.Sc., &B.Sc., Pakistan.

Ms. Rakhshinda Bano
M.Sc., USA, B.Sc., Pakistan, PhD (Cont.),
Australia (On study leave).

Mr. Muhammad Ali
M.A., Japan, MBA & BBA, Pakistan.

Dr. Uzma Imran
M.E. & B.E, Pakistan, PhD Continued, Pakistan.

Dr. Asmat Ullah,
PhD& M.Sc., Thailand, B.Sc., Pakistan.

Dr. Jamil Ahmed
M.Phil., Norway, MBBS, Pakistan, PhD
Continued, Malaysia (On study leave).

Dr. Naveed Ahmed,
PhD, South Korea, M.Sc. &B.Sc., Pakistan.

Dr. Tanveer Ahmed
PhD and Master, Italy, BE, Pakistan

Adjunct Faculty
Dr. Muhammad Yar Khuhawar
PhD, UK.

Dr. Najma Memon
PhD, Pakistan.

Dr. Rafique Ahmed Chandio
PhD, UK.

Dr. Qamaruddin Mahar

Dr. Awais Khatri
PhD, Australia.

Dr. Muhammad Saffar Mirjat

Dr. Suhail Ahmed Soomro

Dr. Ashique Ali Jhatial
PhD, UK.

Dr. Zulfiqar Ali Umrani
PhD, France.

Dr. Asif Ali Shaikh
PhD, Pakistan.

Dr. Sheeraz Ahmed Memon
PhD, South Korea.

Dr. Abdul Razzaque Sahito
PhD, Pakistan.

Dr. Syed Feroze Shah
PhD, China.

Dr. Habibullah Pathan
PhD, UK.

5.5.7 Curriculum Structure

Description	Length
Duration	4 Years
Semesters	8
Courses	46
Total Credit Hours	**136**

4 Years BS Program Layout

Compulsory Courses (The student has no choice)		**General Courses** (To be chosen from courses offered by other departments)		**Foundation Courses** (Discipline Specific)	
11 Courses		**4 Courses**		**11 Courses**	
28 Credit Hours		**12 Credit Hours**		**33 Credit Hours**	
Course	**Credit Hours**	**Course**	**Credit Hours**	**Course**	**Credit Hours**
English I	3	Biology	3	Introduction to Environmental Science	3
English II	3	General Chemistry	3	Environmental Chemistry	3
Pakistan Studies	2	Sociology	3	Environmental Physics	3
Islamic Studies / Ethics	2	Introductory Economics	3	Ecology (Fundamental & Applied)	3
Mathematics I	3	Introduction to Earth Sciences	3	Environmental Microbiology	3
Mathematics II	3	-	-	Environmental Pollution	3
Statistics	3	-	-	Climatology	3
Introduction To Computing& Programming	3	-	-	Environmental Fluid Mechanics	3
Project / Thesis I	3	-	-	Analytical Techniques in ES	3
Project / Thesis II	3	-	-	Research Methods in Environmental Science	3
-	-	-	-	Public Health and Environment	3
Total	**28**	**Total**	**15**	**Total**	**33**

Major Courses (The student has no choice)		**Elective Courses** (To be chosen from courses offered by other departments)	
13 Courses		**7 Courses**	
36 Credit Hours		**21 Credit Hours**	
Course	**Credit Hours**	**Course**	**Credit Hours**
Environmental Toxicology	3	Energy and Environment	3
Environmental Economics	3	Watershed Management	3

GIS & RS	3	Occupational Health and Safety	3
Environmental Monitoring & Management Systems	3	Hydrology	3
Climate Change & Water	3	Applied Hydraulics	3
Biodiversity & Conservation	3	Air and Noise Pollution	3
Environmental Impact Assessment	3	Soil and Water Conservation	3
Natural Resources Management	3	Solid Waste Management	3
Environmental Informatics	3	Land Degradation, Restoration and Management	3
Environmental Laws and Governance	3	-	-
Water and Wastewater Treatment Technologies	3	-	-
Total	**33**	**Total**	**27**

FIRST YEAR

Semester 01

Sr. No.	Course Code	Course Title	Pre-requisite	Credit hours
1.	ENS101	Introduction to Environmental Science	HSC-II	3 (3+0)
2.	ENS102/ MATH107	Basic Biology/ Basic Mathematics	HSC-II	3 (3+0)
3.	ENS103	General Chemistry	HSC-II	3 (2+1)
4.	ENG101	Functional English	HSC-II	3 (3+0)
5.	IS111/ SS104	Islamic Studies/ Ethics	HSC-II	2 (2+0)
6.	PS106	Pakistan Studies	HSC-II	2 (2+0)
		Semester Credit Hours		**16 (15+1)**

Semester 02

Sr. No.	Course Code	Course Title	Pre-requisite	Credit hours
1.	MATH108	Applied Calculus	Basic Mathematics	3 (3+0)
2.	CS146	Introduction to Computing & Programming	HSC-II	3 (3+0)
3.	ENS152	Sociology	Pakistan Studies	3 (3+0)
4.	ENS153	Environmental Biology	Basic Biology	3 (2+1)
5.	ENS155	Environmental Chemistry	General Chemistry	3 (3+0)
		Semester Credit Hours		**15 (14+1)**

SECOND YEAR

Semester 03

Sr. No.	Course Code	Course Title	Pre-requisite	Credit hours
1.	MATH217	Statistics and Probability	HSC-II	3 (3+0)
2.	ENS202	Environmental Physics	-	2 (2+0)
3.	ENS203	Environmental Microbiology	Environmental Biology	3 (2+1)
4.	ENS211	Fundamental & Applied Ecology	Environmental Biology	3 (3+0)
5.	ENS212	Environmental Fluid Mechanics	Basic Mathematics	3 (2+1)
6.	ENG201	Communication Skills	Functional English	2 (2+0)
		Semester Credit Hours		**16 (14+2)**

Semester 04

Sr. No.	Course Code	Course Title	Pre-requisite	Credit hours
1.	ENS251	Environmental Pollution	Environmental Chemistry	3 (3+0)
2.	ENS252	Climatology	Environmental Physics	3 (3+0)
3.	ENS253	Environmental Informatics	Statistics and Probability	3 (2+1)
4.	ENS261	Watershed Management	-	3 (3+0)
5.	ENS262	Energy and Environment	Introduction to Environmental Science	3 (3+0)
6.	ENS263	Environmental Biotechnology	Environmental Microbiology	3 (3+0)
		Semester Credit Hours		**18 (17+1)**

THIRD YEAR

Semester 05

Sr. No.	Course Code	Course Title	Pre-requisite	Credit hours
1.	ENS301	Introductory Economics	HSC-II	3 (3+0)
2.	ENS302	Environmental Toxicology	Environmental Microbiology	3 (3+0)
3.	ENS303	Analytical Techniques in Environmental Science	Environmental Chemistry	3 (2+1)
4.	ENS311	GIS and Remote Sensing	Climatology	3 (2+1)
5.	ENS313	Applied Hydraulics	Environmental Fluid Mechanics	3 (3+0)
6.	ENG301	Technical and Scientific Writing	Communication Skills	2(2+0)
		Semester Credit Hours		**17 (15+2)**

Semester 06

Sr. No.	Course Code	Course Title	Pre-requisite	Credit hours
1.	ENS351	Environmental Economics	Introductory Economics	3 (3+0)
2.	ENS352	Environmental Monitoring and Management Systems	Environmental Pollution	3 (3+0)
3.	MES353	Land Degradation, Restoration and Management	Watershed Management	3 (3+0)
4.	ENS361	Water and Climate Change	GIS and Remote Sensing	3 (3+0)
5.	ENS362	Solid Waste Management	Environmental Pollution	3 (3+0)
6.	ENS363	Research Methods in Environmental Science	Analytical Techniques in Environmental Science	3 (3+0)
		Semester Credit Hours		**18 (18+0)**

FOURTH YEAR

Semester 07

Sr. No.	Course Code	Course Title	Pre-requisite	Credit hours
1.	ENS401	Environmental Impact Assessment	Environmental Monitoring & Management Systems	3 (3+0)
2.	ENS402	Natural Resource Management	Fundamental & Applied Ecology	3 (3+0)

3.	ENS411	Air and Noise Pollution	Environmental Monitoring and Management Systems	3 (2+1)
4.	ENS412	Hydrology	Applied Hydraulics	3 (3+0)
5.	ENS413	Occupational Safety, Health and Environment		3 (3+0)
6.	ENS499*	Project / Thesis - I	Research Methods in Environmental Science	3 (0+3)
		Semester Credit Hours		**18 (14+4)**

Semester 08

Sr. No.	Course Code	Course Title	Pre-requisite	Credit hours
1.	ENS451	Environmental Laws and Governance	Environmental Impact Assessment	3 (3+0)
2.	ENS452	Public Health and Environment	Air and Noise Pollution	3 (3+0)
3.	ENS453	Water and Wastewater Treatment Processes	Solid Waste Management/Natural Resource Management	3 (3+0)
4.	ENS461	Soil and Water Conservation	Solid Waste Management	3 (3+0)
5.	ENS499	Project / Thesis - II	Project / Thesis - I	3 (0+3)
		Semester Credit Hours		**15 (12+3)**
		Total Credit Hours		**133 (119+14)**

5.5.8 Laboratory Facilities:

USPCAS-W has following well established laboratory with allied facilitates:

- Advanced Water & Wastewater Quality Control Lab
- Pilot Scale Water & Wastewater Treatment Field Lab
- GIS and Remote Sensing Lab
- Computer & Software Lab
- Soil & Water Analysis Lab
- Hydraulic Lab

5.5.9 Seminar Library

The department has a Seminar Library in addition to the Central Library of the University. The seminar library has enough space to study in learning environment. Seminar contains more than 1000 books and Research Journal on Environmental Science and Water related.

5.6 Affiliated Colleges / Institutes/

Following Colleges/Institutes are affiliated with Mehran University, the University carries out the admission process and conducts the examinationsand award degrees:

5.6.1 Government College of Technology, Hyderabad offers B.Sc. Engineering in Civil, Electrical and Mechanical Technologies. Further information of these courses may be obtained from:

Prof. Abdul Salam Mahehar
Principal
Government College of Technology, Hyderabad.
Phone: 022-9240124 & 022-9240122

5.6.2 The Hyderabad Institute of Arts, Science and Technology, Hyderabad offers BS in Computer Science (BSCS). Further information of these courses may be obtained from:

Justice (Retd.) Abdul Majeed Khanzada
Chairman,
Hyderabad Institute of Arts, Science & Technology,
Auto Bhan Road, Hyderabad
Phone: 022-3821474

5.6.3 Hyderabad College of Science and Technology, Hyderabad offers B.Sc. Engineering in Civil, Electrical and Mechanical Technologies. Further information of these courses may be obtained from:

Mr. Saqib Qaiser
Principal,
Hyderabad College of Science & Technology,
Plot No. B-15, Block-I,
Railway housing Cooperative Society,
Main Autobahn Road, Latifabad, Hyderabad.
Tel. No.: +92 22 3820223 & 3815707

6. RESEARCH AND DEVELOPMENT

6.1 PhD Faculty

PhD faculty is considered to be the backbone of any educational institute; it not only adds to the University ranking but also works for the betterment of community by focusing and proposing solutions to the current problems of the community.

Mehran UET has a significant number of PhDs, apart from PhDs in the core engineering disciplines, the University has PhD faculty also in the subjects of Basic Sciences, Linguistics and Management Sciences.

At Mehran UET, students will learn from renowned researchers and industry leaders recognized globally for their outstanding achievements. They are passionate, brilliant, and dedicated to sharing their insights and discoveries.

6.2 Mehran University Research Journal of Engineering & Technology

(a). About the Journal

Mehran University Research Journal of Engineering and Technology is an international, multidisciplinary and open access scholarly journal accessible at https://publications.muet.edu.pk/index.php/muetrj/index.
This journal publishes high quality original research articles describing the latest research and developments in all the fields of engineering and technology. Review and survey papers are also considered for publication in the priority areas mainly by invitation. The journal is recognized by Higher Education Commission Pakistan and is indexed in Clarivate Web of Science, Directory of Open Access Journals, EBSCO, Inspec, Portico, Gale, Ingenta and many other international agencies.

Aim and Scope

The journal aims to support academicians, researchers and practitioners with the latest trends and better practices through our published articles in the fields of engineering and technology and serves as a platform for addressing and discussing theoretical and practical knowledge of advancement in but not limited to the following engineering and technology domains: Civil, Agriculture, Food, Irrigation and Water Supply, Environmental, Mechanical, Chemical, Process, Energy, Electrical, Electronics, Computer Systems, Software, Information Technology, Mechatronics, Automotive, Aerospace and Aeronautical, Naval Architecture and Maritime, Telecommunications, Mining, Metallurgy, Petroleum and Gas, Materials, Polymer, Textile, Biotechnology, Biomedical, Industrial, Urban Engineering and Planning; and the applied sciences domain particularly Materials Sciences, Applied Natural Sciences. However, the domains of medical sciences, management sciences, social sciences and the art and design are not covered by this journal.

(b). About the Journal

Repertus a peer reviewed Journal of Linguistics, Language Planning and Policy (e-ISSN 2791-1934) is an initiative of Centre of English Language & Linguistics (CELL), Mehran University of Engineering & Technology (MUET). It welcomes submissions focusing on areas of linguistics, language planning and policy particularly in the context of South Asia and generally worldwide. It focuses on the recent developments on issues related to linguistics-theoretical and practical a wide range of subfields of linguistics. Repertus aims to add the diversity to the linguistic research in overall world scenario. It will also help the researchers who focus on other colonial countries.

Editor in Chief
Dr Habibullah Pathan
Director, Centre of English Language & Linguistics
Mehran University of Engineering & Technology
Jamshoro, Pakistan
chief.editor@repertus.admin.muet.edu.pk

Editor
Dr Shumaila Memon
Associate Professor, Centre of English Language & Linguistics
Mehran University of Engineering & Technology
Jamshoro, Pakistan
editor@repertus.admin.muet.edu.pk

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6.3 Conferences, workshops and symposia

International research conferences are aimed to bring together a wide spectrum of international experts to facilitate a creative environment for the promotion of collaboration and knowledge transfer. In particular, a research conference facilitates a dialogue between major industry players, entrepreneurs and academia to help create a roadmap for the development of tangible research environment in the country.

Mehran UET is making history amongst the engineering universities of Pakistan by organizing several international conferences in a single calendar year in diversified fields of engineering. In 2018-19 Mehran UET, hosted many international conferences including 1st International Conference on English Language and Linguistics (ICELL'19), 1st International Conference on Computational Sciences and Technologies with the slogan "Engineering, Science and Technology at the Intersection of Solving Problems to Humanity" (INCCSST'19), 1st International Conference on Sustainable Mineral Resources Development and Utilization (SMRDU'19), 1st International Conference on Computational Sciences and Technologies, 5th International Conference on Energy, Environment and Sustainable Development 2018 (EESD'18). In 2017-18 Mehran UET hosted several international conferences including 5th International Multi Topic Conference (IMTIC'18), 2nd International Conference on Chemical Engineering, 1stInternational Conference on Sustainable Development in Civil Engineering (ICSDC'17). In 2015-2016, Mehran UET hosted five international conferences including, 4th International Conference on Energy, Environment and Sustainable Development, 1st International Conference on Science, Technology, Innovation Policy and Management, Global Conference on Wireless and Optical Communications, held in Spain, 1st International Conference on Industrial Engineering and Management, and Management Accountant Conference on Economy Challenges and Opportunity.

Taking the lead in engineering sector of Pakistan, Mehran UET arranged an international conference at Malaga, Spain. Global Conference on Wireless & Optical Communications GCWOC '16, with the collaboration of University of Malaga.

Beside conferences a number of workshops and symposia of national and international repute were called upon at Mehran UET including, 1st International Training Workshop: Industrial Clusters in Sindh Fostering Research &Development, Comprehensive Training on Garment Engineering, Workshop "Institutional Repository Management (DSpace) IRM-2018", 33rd All Pakistan IEEEP Students Seminar,

Mehran University Education Expo 2017, International Seminar and Workshop on Design of Tall Buildings: Trends and Advancements for Structural Performance.

The above organized technical meetings are a tangible proof of the fact that Mehran UET is well aware of the current demands and issues of our society and the University is constantly contributing its share to work for the betterment of the community. This also helps to aware our students of the current market trends and better guide them to be parallel with those trends.

6.4 Office of Research Innovation and Commercialization (ORIC)

Office of Research Innovation and Commercialization (ORIC) is established in MUET to develop linkage with emerging and existing business firms across Pakistan for technological innovation and commercialization of research. It serves an umbrella to coordinate with researchers, on campus incubators and science and Technology Park. It also serves as channel to local, regional and federal partners to ensure research outcomes contributing in the growth of country's economy. ORIC developed its mechanism for research commercialization and established business/technology incubator to promote innovation and entrepreneurship culture.

6.4.1 Role of ORIC

ORIC performs its functioning in three significant capacities.

- Research Operations & Development
- University Industry Linkages and Technology Transfer
- Research Commercialization/Entrepreneurship

ORIC activities revolve around the following research cycle to ensure research impact on economy and society:

The ORIC provides opportunities for the students of the University in getting essential tools to sharpen their skills, such as:

- Trainings exposure and grooming during summer and winter holidays.
- Continuing Professional Development (CPD) courses in collaboration with (PEC)
- Seminars, conferences and workshops
- Chinese Language Courses by native Chinese faculty
- Internships and job trainings
- Industrial visits

This section also arranges job and trade fair to allow students for interaction with industry partners and recruitment drive for fresh graduates of the Mehran UET on the basis of their merit. ORIC facilitates entire University, its administrative and academic staff, and students in:

- Capacity building
- Career advancement
- Professional development by providing state-of-the-art trainings as well as certifications.
- International student exchange programs and international summer camps in different countries.

The infrastructure of ORIC is equipped with all modern facilities, having advanced computer labs, conference room, class room, library and auditorium with audio visual systems. ORIC never believes in boundaries, but it excels with the innovation, encourage faculty and students to think out of box and come up with new ideas. ORIC never believes in the boundaries, but it excels with the innovation, encourage our faculty and students to think out of box and come up with new ideas, we will materialize your dreams.

6.4.2 National MoUs Signed with Industries and Academia:

Sr. No.	Name of Institute
1.	Benazir Bhutto Shaheed Youth Development Program, Irrigation & Power Department, Government of Sindh, Pakistan.
2.	Pakistan Atomic Energy Commission (PAEC), Islamabad.
3.	The United States Educational Foundation in Pakistan, Islamabad.
4.	Isra University, Hyderabad, Sindh, Pakistan.
5.	The Promotion of Education PEF Foundation, USA, Islamabad.
6.	Indus University, Karachi.
7.	Ms. Rafhan Maize Products limited, Kotri.
8.	Pakistan Space & Atmosphere Research Commission (SUPARCO), Karachi, Pakistan.
9.	Ms. Indus Resource Center, Karachi.
10.	Pakistan Steel Mills, Karachi.
11.	Pakistan Council of Research in Water Resources, Islamabad.
12.	Sindh Irrigation & Drainage Authority (SIDA), Hyderabad.
13.	Sindh Agriculture University Tandojam, Tamdojam.
14.	Water and Power Development Authority, Lahore.
15.	Analytical Measuring Systems (Private) Limited, Karachi.
16.	Pakistan Institute of Management (PIM), Karachi.
17.	Institute of Cost & Management Accountants of Pakistan, Karachi.
18.	Pakistan Council for Science and Technology (PCST), Ministry of Science & Technology, Government of Sindh, Karachi.
19.	Eco Science Foundation (ECOSF) & Technology Times, Karachi.
20.	Irrigation Department, Government of Sindh "Capacity Building of Officers / Officials of Sindh Irrigation Department".
21.	NORDTEC, Karachi.
22.	Sustainable Development Policy Institute, Islamabad.
23.	National Textile University, Faisalabad.
24.	Archorma, Textile Chemical Company, Karachi.
25.	Institute of Business Administration (IBA), Karachi.
26.	British Council Pakistan, Karachi.
27.	Sindh Engro Coal Mining Company (SECMC), Karachi.
28.	World Wide Funds for Nature Pakistan, Karachi
29.	Confucius Class Rooms at Cadet College Petaro, Jamshoro.

6.4.3 International MoUs Signed with Industries and Academia:

Sr. No.	Name of Institute
1.	University of Leeds, UK.
2.	Middle East Technical University, Ankara, Turkey.
3.	Aalborg University Esbjerg, Denmark.
4.	University of Bedfordshire, UK.
5.	University of Malaya, Malaysia.
6.	University of Limerick, Limerick, Ireland.
7.	Hacettepe University, Turkey.
8.	University Technology Malaysia, Malaysia.
9.	Faculty of Textile, Science and Tech., Shinshu University, Japan.
10.	China University of Mining and Technology, Xuxhou, China.
11.	University of Utah, USA.
12.	Clothing and Designing Faculty, Minjiang University, China.
13.	Perdana School of Science, Technology & Innovation Policy, University Technology Malaysia, Kuala Lumpur, Malaysia.
14.	Korea Institute of Science & Technology Evaluation & Planning (KISTEP), Republic of Korea.
15.	Charles Sturt University, Australia.
16.	AMC-Metropolitan College-Athens-Greece.
17.	University of Nottingham, UK. (This revised agreement applies to the University of Nottingham's campuses in the United Kingdom, China & Malaysia).
18.	Montan Universitaet, Leoben, Republic of Austria.

Prof. Dr. Inamullah Bhatti
Office of Research Innovation and Commercialization (ORIC)
Tel. No. +92 022 2772280
Ext. No. 6500
Email: dir.oric@admin.muet.edu.pk

7. CAMPUS LIFE

7.1 Student Teacher Centre (STC)

This University has established Student Teacher Centre to provide communal facilities to students and staff. STC has been constructed over an area of 20,000 sft. as per Vision & Perspective Plan of the University. The Centre hosts the following:

7.1.1 Indoor Sports & Communal Facilities:

- Information Service
- Students' Advisory Office
- Hostel Provost Office
- Students' Welfare Office
- Dispensary
- Tuck Shop
- Bank Counter
- Cafeteria (for Boys & Girls)
- Debating and Dramatic Society Office
- Indoor Games
- Alumni Office

7.2 MUET Library & Online Information Center, Jamshoro

The Mehran UET, Library & Online Information Center contains more than **180700** books related to Engineering Science and Technology. The library has online e-resources under Higher Education Commission Digital Library Program. The access **of 12 e-databases** for electronics journals, Research thesis online e-books available under ebrary program which are accessed within the University campus and outside the campus in full text format.

There are more than **32000** text books in the Book Bank which are loaned to students for one term on nominal rent. The collection of books is updated continuously and new books are acquired on the recommendations of experienced faculty members, which makes collection most suited and beneficial to graduate and under-graduate students. In addition, latest reference and other books are also acquired every year to keep the users of the library abreast with the latest information on Science & Technology specially engineering and its allied subjects.

In addition to providing the readers with in-house collection, services are also provided for inter-library loan and photocopying of literature including technical information centers within and outside Pakistan.

The Mehran UET Library & Online Information Center also offers following services:

- **The E-Resources for Online Classes have been established to support the students during COVID-19 and are available on the following link:**
  library.muet.edu.pk/ebooks.php
- MUET Library & Online Information Center offer service of e-resources to under graduate, post graduate students and faculty members for their research project, assignments online classes through Library Web page during the **COVID-19.**
- The MUET Library provides the facility of Multimedia & Research Development Center, which includes softcopy of books, CD/DVD Writing, Scanning and printing to students, faculty members and researchers. Multimedia & Research Center also provide space for researcher with I-7 Computer (Wireless Headphones; Hi Fi Audio system) connected with Wi-Fi Networks. Full access of HEC Digital Library provided possible assist to create bibliography of work electronically (Endnote, Mendeley, Zotero). In Multimedia & Research development Center research articles and e-books are provided to the faculty members and students on their demands.

- The MUET library offer the trainings program regarding awareness of HEC digital library resources ebrary, science direct and IEEE to the students of all faculties of the University.
- There are also blogs muetlfacultycoordination.blogspot.com to give the access of books recommended in teaching plan. Another blog muetloic.blogspot.com to give the awareness trainings regarding HEC Digital Library, muetloiceresources.blogspot.com/ access of E-books, Journals, Tutorials and Thesis's Guidance, video lectures, dictionaries and encyclopedias etc.
- The Catalog of books is computerized and accessible to the library of Congress gateway loc.gov/z39.50 serving one point access interface for books catalog, full text electronic journals and e-books on web.
- Koha Catalogue also available with check in check out system for library users on opac.muet.edu.pk
- The MUET Library & Online Information Center also offered Wi-Fi service in whole Library inside/outside Building.
- The library is opened from 8:00 am to 12:00 Mid-night whole the year heavily used by the undergraduate and postgraduate students, faculty members and researchers.
- Professional staff available at service points to meet the needs of the readers. Besides this under library system program the seminar libraries have been established in various institutes/departments.

7.3 Student Financial Aid Office (SFAO)

The primary objective is to provide assistance through Scholarships, Financial Assistance /Aid, Zakat and Educational Loans (Qarz-e-Hasna) programs, to the students who are unable to pursue their higher education due to financial barriers. The obbjectives of SFAO are as under:

- To provide financial relief to the meritorious and needy students
- To provide quality advising services by addressing individual student needs, responding to student inquiries in a timely manner
- To use effective procedures to ensure that the funds are provided to students who demonstrate the greatest financial need
- To comply with all prescribed rules, regulations, and policies of financial aid and scholarship programs as set by the Donor Agencies and the University

The ISAC Interviews conducted for Ehsaas Undergraduate Scholarship Project Phase-III on March 17-18, 2022

7.3.1 List of Donors / Scholarships Opportunities:

Sr. No.	NAME OF SCHOLARSHIP	DONOR
1.	Internal Merit Scholarship	Mehran UET, Jamshoro
2.	Financial Assistance	Mehran UET, Jamshoro
3.	Student Advancement fund Endowment Scholarship	Mehran UET, Jamshoro
4.	USAID Merit & Need Based Scholarship	USAID Pakistan with the collaboration of HEC, Islamabad
5.	HEC Need Based Scholarship Program	Higher Education Commission, Islamabad.
6.	OGDCL Need Based Scholarship	OGDCL with the collaboration with HEC, Islamabad.
7.	SSGC Scholarship	Sui Sothern Gas Company limited
8.	BHP (Pakistan) Need Cum Merit Based Scholarship	BHP Billiton (Pakistan)
9.	National ICT Scholarship	PM National ICT R&D Fund, Islamabad.
10.	NBP Loan	National Bank of Pakistan.
11.	Sindhi Association of North America Dr. Feroz A. Memorial Educational (FAME) Scholarships.	Sindhi Association of North America.
12.	PEC Scholarship	Pakistan Engineering Congress, Lahore.
13.	PEC Merit Scholarship	Pakistan Engineering Council, Islamabad.
14.	Balochistan Scholarship	Directorate of Collages Higher and Technical Education Balochistan, Quetta.
15.	PIP Scholarship	Petroleum Institute of Pakistan (PIP), Karachi.
16.	IEP-SAC Scholarship	Institution of Engineering Pakistan, Saudi Arabian Center.
17.	MUTA - Need Cum Merit Scholarship	Mehran University Teachers Association (MUTA), Jamshoro.
18.	Merit Scholarship (formerly called MORA)	All District Zakat & Ushar Committees of Sindh
19.	Endowment Fund Scholarship	Education & Literacy Department, Govt. of Sindh
20.	PEF Scholarship	Professional Educational Foundation
21.	Provision of Higher Education Opportunities for Student of Baluchistan and Fata	Higher Education Commission, Islamabad.
22.	Minority Scholarship	Ministry of Religious Affairs, Islamabad.
23.	PEEF Scholarship	Punjab Education Endowment Fund (PEEF), Lahore.
24.	Scholarship for Foreigner students	Various Embassies
25.	Zila Nazim Khairpur Scholarship	Office of Zila Nazim District Govt., Khairpur
26.	Scheduled Caste (Tharparkar)	Office of Deputy Commissioner, Tharparkar
27.	SEAFA Scholarship	Mr. Tufail A. Memon and Friends from USA
28.	Sain G.M. Sayed Need cum Merit Based Scholarship	Shah Hyder Educational Society SANN (SHESS), SANN UC, District Jamshoro
29.	DIYA Scholarship	Kaneez Fatima Welfare Trust, Rawalpindi
30.	FFC- Scholarship	Fauji Fertilizer Company Limited
31.	Syeda Mubarik Begum Scholarship	Babar Ali Foundation, Pakistan
32.	Quaid-E-Azam Aligarh Scholarship	Quaid-E-Azam Aligarh Trust
33.	Mentoring a Talent	TEXPO, IT consultant Company
34.	FF_ Scholarship	Fauji Foundation, Rawalpindi

Sr. No.	NAME OF SCHOLARSHIP	DONOR
35.	(Late) Abdul Qayoom Uqaili Need cum Merit Based Scholarship	Prof. Dr. M. Aslam Uqaili, Ex-Vice-Chancellor, MUET, Jamshoro.
36.	(Late) Taj Mohammad Sahrai Need cum Merit Based Scholarship	Prof. Dr. Mujeeb-u-ddin Sahrai, Professor, Mechanical Engineering MUET, Jamshoro.
37.	Sardar Begum Sehrai Need cum Merit Based Scholarship	
38.	(Late) Master Kishan Chand Chowdhry Need cum Merit Based Scholarship	Prof. Dr. B.S. Chowdhry, Dean FEECE, MUET, Jamshoro.
39.	(Late) Mr. & Mrs. Jhando Khan Lashari Need cum Merit Based Scholarship	Prof. Dr. Bakhshal Khan Lashari, Director, Water Resources Engineering & Management, MUET, Jamshoro
40.	Agha Habibullah Khan, Need Cum Merit Based Scholarship	Prof. Dr. Agha Faisal Habib, Civil Engg.
41.	Mr. & Mrs. Pyaro Khan Shaikh, Need Cum Merit Based Scholarship	Dr. Ghulam Yaseen Shaikh, Industrial Engineering Department
42.	Dr. Asma Junejo, Need Cum Merit Based Scholarship for a Female Student	Dr. Asma Junejo, Senior Gynecologist, Hyd.
43.	Dr. Khadija Qureshi, Need Cum Merit Based Scholarship	Prof. Dr. Khadija Qureshi, Chemical Engg.
44.	Mr. Jawed Akhtar Arbab. Scholarship	(Late) Muhammad Khan Arbab, Need Cum Merit Based Scholarship
45.	United Memon Jamat Scholarship	United Memon Jamat of Pakistan
46.	Mrs. Anwar Muhammad Memon.	(Late) Mr. Anwar Mohammad Memon, Need Cum Merit Based Scholarship
47.	Mrs. Noshaba Qabool Muhammad, Need Cum Merit Base Scholarship and Mrs. Sonia Abdul Manan Need Cum Merit Based Scholarship	Mr. Mian Abdul Manan, Team Leader (I & C), Karachi.
48.	Scholarship for Foreigner students	Various Embassies in Pakistan
49.	Other Foundations / Agencies	General Scholarships
50.	Indian Occupied Kashmiri Scholarship / J&K State Financial Assistance	Government of Pakistan Ministry of Inter Provincial Coordination (IPC Division)
51.	Mr. Ilyas Ishqie to a needy female student, Need Cum Merit Based Scholarship.	Madam Rosy Ilyas, Retired Professor ELDC, MUET.
52.	(Late) Mr. Zahid Suleman, Need Cum Merit Based Scholarship.	Mr. & Mrs. Qazi Suleman,
53.	Mr. Muhammad Hassan Laghari, Need Cum Merit Based Scholarship. MUET.	Mr. Muhammad Hassan Laghari, Ex-Chief Security Officer
54.	Engr. Ghulam Ali Mirza Need Cum Merit Based Scholarship.	Mr. Ghulam Ali Mirza, from UK.
55.	93-Batch Need Cum Merit Based Scholarship	Ex-Students of 93 Batch
56.	Mir Hassan Rind Need Cum Merit Based Scholarship	Mir Hassan Rind Former Member of National Highway Authorities (NHA).
57.	(Late) Mrs. Mahrunish Shaikh Need Cum Merit Based Scholarship	Engr. Arz Mohammad Shaikh, Hyderabad.
58.	Dr. Mir Saad Hussain Sacharvi, Need Cum Merit Based Scholarship	Dr. Mir Saad Hussain Sacharvi, Hyderabad.
59.	Mr. Mir Mahammad Talpur, Need Cum Merit Based Scholarship.	Mr. Mir Mahammad Talpur
60.	Late Mr. Ghulam Hussain Brohi, Need Cum Merit Scholarship	Pro. Dr. Khan Muhammad Brohi Dean Faculty of Architecture & Civil Engg.
61.	Sachal Engineering Works (Pvt) Ltd, Islamabad Need Cum Merit Scholarship	Sachal Engineering Works (Pvt.) Ltd., Islamabad

Dr. Amir Mahmood Soomro
Focal Person, Student Financial Aid Office
Phone: +92 22 2771274.
Exchange: +92 22 2772250-72 / Ext. 7715

7.4 Students' Advisory Committee

Introduction of the Directorate / Center / Section / Office
Mehran University Students' Advisory Committee was formed to bridge the gap between administration, teaching community, and students. The Committee helps students to organize academic and social activities and to resolve their academic and legal grievances.

Role of the Students' Affairs Office
The committee leads, directs, and administers overall functions of student societies, student counseling, hostel residence allocation, as well as matters related to disciplinary issues. The important role of Student Affairs Office is to enhance the quality of student experience both in and outside of the classroom.

The Advisory Committee also provides proactive support and capacity building services to promote co-curricular activities to enhance interpersonal skills of the students.

Achievements of the Directorate / Center / Section / Office
The Student Affairs Office has maintained a friendly environment to guide the students. It manages their needs from the time they step in the University until their graduation. We provide proactive support and capacity building services to promote healthy co-curricular activities to enhance interpersonal skills of the students. Using the platform of the Students' Affairs Office, students have built strong relationships with their peers, faculty, administration, and other stakeholders of the University.

The Mehran University Students' Advisory Committee is composed of the following members:

Prof. Dr. Tanweer Hussain
Professor, Department of Mechanical Engineering,
Advisor Students' Affairs
Direct: +92 22 2109136
Landline: 0222772251-72 (Ext: 2030)
Email: tanweer.hussain@faculty.muet.edu.pk
asa@admin.muet.edu.pk

Dr. Muhammad Shuaib Shaikh
Associate Professor, Department of Chemical Engineering
Deputy Advisor Students' Affairs
Landline:0222772251-72
Email: shuaib.shaikh@faculty.muet.edu.pk

Dr. Isma Farah Siddiqui
Associate Professor, Department of Software Engineering
Deputy Advisor Student' Affairs
Landline: 0222772251-72 (Ext: 6907)
Email: isma.farah@faculty.muet.edu.pk

Dr. Samander Ali Malik
Associate Professor, Department of Textile Engineering
Deputy Advisor Students' Affairs
Landline: 0222772251-72 (Ext: 2512)
Email: samander.malik@faculty.muet.edu.pk

Engr. Junaid Ahmed Baloch
Assistant Professor, Department of Software Engineering
Deputy Advisor Students' Affairs
Landline:0222772251-6917
Email: Junaid.baloch@faculty.muet.edu.pk

7.5 Quality Enhancement Cell (QEC)

QEC was first established in 2001 under the name of ISO 9000 Cell, as Mehran UET, Jamshoro decided to enhance quality of education by implementing ISO 9000 Quality Management System (QMS). The University has ultimately achieved ISO 9000 certification in 2003 and the course continuous to include additional areas for quality improvement and the directorate was renamed as Quality Enhancement Cell (QEC) in 2007.

Today QEC coordinates between Higher Education Commission (HEC) Pakistan and MUET Jamshoro primarily and also includes quality personnel of different institutes of Pakistan to promote quality at MUET Jamshoro. The basic activities carried out to cover quality parameters of HEC and ISO 9000 include conduct of Self-Assessment (SA), Institutional Performance Evaluation (IPE), Postgraduate Program Review (PGPR), Internal Quality Audit (IQA), Management Review (MR), Anti-plagiarism, seminars, workshops, conferences and Surveillance.

7.5.1 Key achievements of QEC:

- Implementation of ISO 9001:2015 quality management system requirements and certification for three years from Lloyd's Register Quality Assurance (LRQA) UK
- Successfully implemented HEC quality assurance criteria and secured 93.53% marks in HEC QECs ranking for the year 2017-18
- Mehran UET awarded with "Excellent Performance" for the year 2018-19

7.5.2 Future Objectives:

To strive for accreditation of engineering programs through Accreditation Board of Engineering and Technology (ABET)

Contact us:
Quality Enhancement Cell (QEC)
Mehran UET, Jamshoro.
Phone: +92-22-2109013 / Ext.: 7712
E-mail: qec@admin.muet.edu.pk
Website Link: http://www.muet.edu.pk/qec

7.6 Information and Communication Processing Centre

ICPC is considered as backbone of the University. ICPC contains different types of networks, i.e., voice & data networks, which facilitates inter departmental communication related to internet & voice communication. It also connects MUET Intranet to the outside world through a bandwidth of 800 Mbps on fiber link.

The ICPC is having a powerful and scalable switching fabric that carries gigabit traffic on fiber optics backbone and interconnects all buildings of the University including administration building, departments and hostels. It is designed on the VLAN infrastructure. Apart from data service, ICPC is also providing voice services through the modern Alcatel-Lucent OmniPCX 4400, EPABX System since 2003. ICPC provides following services as well as facilities in the University:

- Data and Voice Services
- Wireless Connectivity (Blanket coverage)
- Trainings & Internships for Employees & students
- Smart ID Cards for Employees & students
- Security Surveillance System
- Email Service
- SMS Alert Service
- Web Services

7.6.1 Surveillance System

The University has a state-of-the-art surveillance system (a closed-circuit television system) to with a central control room to maintain close observation to the students, visitors and employees of the University within the University premises around the clock to reduce the level of all risks associated with higher education institutions.

Engr. Sajidullah Memon
Additional Director
Phone: (022) 2772250 Ext: 2052
Email: additional.director@admin.muet.edu.pk

Engr. Saleem Ahmed Memon
Director
Phone: (022) 2772250 Ext: 2090
Email: director.icpc@admin.muet.edu.pk

7.7 Medical Assistance

A double-bed clinic located at Student-Techer Center provides medical facilities from 4:00 to 6:00 in the evening for residents of boys' hostels and a part-time dispensary has been established in one of the female hostels for the residents, which is manned by a qualified doctor and a dispenser. Adequate quantities of essential medicines are also available in the dispensary for the minor ailments. Major sickness problems are referred to nearby hospital. Besides that, day and night emergencies are attended by the ambulance service and duty vehicle which are available for 24/7.

For further information, please contact:

1. Prof. Ghulam Abbas Mahar,
   Provost Hostels,
   Tel. No. 022 2109137
   Ext. No. 3005
   Email: provost.hostels@admin.muet.edu.pk

2. Khalid Hussain Bhatti,
Assistant Registrar (Hostels)
Tel. No. 022 2109135
Ext. No. 2031
Email: khalid.bhatti@admin.muet.edu.pk

7.8 Transport Facilities

The University has a fleet of buses to facilitate the students, faculty and staff running on various routes between the campus and Jamshoro, Hyderabad / Qasimabad / Latifabad / Kotri. Students have to pay nominal transport charges for the use of these facilities. In addition to that, the University has different type of equipment / vehicles, i.e., Mechanical Sweeper, Aerial Platform, Garbage Compactor etc. for cleaning campus to make the environment better. The University also plans to introduce solar shuttles for the students within the University premises.

Mr. Fawad Ahmed Lashani
Incharge Transport Section / Director Services
Phone: +92 222109073 and 22 2771153 / Ext.: 6800
http://www.muet.edu.pk/transport-section

7.9 Residential Accommodation

The MUET hostels have rich legacy of academic excellence and responsible community life. It is an affordable, homely and safe accommodation for almost 1800 male and female Pakistani, overseas Pakistani and foreign students. Almost all eight, including three female students', hostels are spacious and airy two-storied buildings, located near to the main academic buildings, with well-furnished rooms to accommodate two to three students with internet facility. Every student is allotted a bed, a cupboard, a study table and a chair. The premises of male and female hostels are separate and the messing system and cleanliness of hostels supervised by male and female wardens respectively.

The University is not bound to provide hostel accommodation to every student, even if he / she is entitled. However, accommodation is provided to the male and female students seeking admission only in undergraduate studies at various departments / institutes of the University subject to availability and according to the merit. The interested students can apply through a prescribed Admission Form available with the Office of the Provost Hostels, at the Student Teacher Center of the University. The seats in the hostels are allotted by allocating the district-wise quota proportional to seats allocated for admission in University. Further the district-wise seats are allotted to the students on first come first served basis, **excluding the districts where the bus service is provided from by the University (like Jamshoro, Hyderabad, Matiari, Tando Allahyaar, Tando Muhammad Khan and Mirpurkhas).** The cases of the interested applicants belonging to the above-mentioned districts and far-flung areas thereof may be considered, in case of availability of seats after regular allotment is done. The seats allotment process is fully transparent. The University administration reserves the right to reject any application for allotment or cancel the allotment of any student at any stage without assigning any reason.

Purified drinking water and hot / cold water is available around the clock. Separate canteens / messes with common dining halls are available in each hostel with around to 30 to 40 students siting capacity and offer meals, tea, juice and soft drink at modest prices. The menu and quality of the food are regulated by the students mess committee. The common halls are well equipped with recreational facilities like large wall-mounted televisions / LCDs, table tennis, badminton and newspapers and magazines. Most of the hostels have outdoors basketball courts and inter-hostels sports events and debate contests are organized regularly. A state-of the-art Gymnasium is located near the hostel buildings to provide health care and fitness facilities from morning till 9:00 PM. An ATM electronic banking service is nearby available around the clock. All the hostels' residents have been provided with transport facility from morning till 9:00 PM. All hostels offer lush green lawn for the students to sit and relax, beautiful natural surroundings, mango, guava and banana orchard, green environment conducive for studies, calm & quite atmosphere, pollution free and safe & secured environment with

24 hours security surveillance. Security guards have been deployed on main entrances of male and female students' hostels round the clock to ensure the strict security. The CC Tv cameras are installed in all the hostels to monitor the activities of staff, visitors and residents of hostels by Provost Hostels.

University hostels are built upon the principles of professionalism, caring and mutual respect to the students. During the stay in the hostels, they maintain high standards of professional ethical values and for development of personal relationship which provides the best grooming facilities to fulfill our mission. The residents of MUET hostels have always demonstrated the ethos of dedication, sincerity and care for others. The hostel inculcates the characteristics like co-operation and respect for different cultures in the residents as they come from diverse cultures. As a part of extended family of the University fraternity, MUET hostels add a dimension of vigor and commitment to the academic and extracurricular ambience of the institution. While providing an opportunity of campus living, MUET hostels look forward residents to shoulder and maintain the best traditions of the University as a whole.

All the students are required to abide by the rules and regulations governing residence and are encouraged to develop community life conducive to healthy growth of the social aspects of their personalities.

7.10 Auditorium

The Auditorium with the capacity for approximately 500 people is the most stunning meeting room with seating for up to 500 and state-of-the-art audio-visual equipment. It promises to make events unforgettable. The acoustics in the auditorium are ideal for musical recitals as well as lectures.

7.8 Sports Facilities

The Directorate of Sports has been arranging wide range of indoor as well as outdoor sports activities and provides health and fitness facilities to the University students on daily basis. The University has keen interest in arranging facilities of highly specialized trainings, coaching camps along with indoor and outdoor sport events for students residing in and out of campus. Inter batch, inter departmental and inter hostel sport events for Boys & Girls are regular feature of the University.

We have a state-of-the-art Sports Complex in the campus, having a modern Gymnasium and fitness center that is, equipped with latest fitness tools to provide our students best possible health and sport activities in a better environment.

The University also hosts/organizes and participates in a number of Inter University Sports events organized under HEC annually. The University students have been winning these tournaments and awarded with Gold, Silver and Bronze Medals respectively. Every incoming batch is encouraged to participate and represent the University team in Inter Department, Inter Hostel, Inter Batch and Inter University events particularly in Athletics, Cricket, Football, Volleyball, Handball, Basketball, Squash, Table Tennis, Tennis, Badminton, Hockey, Tug of War, Chess, Judo, Wushu, Body Building, Weight lifting Swimming, Gymnastics and Boxing etc.,

Annual events like Sports week/Gala are among the most popular events organized at the University in which a huge number of students participate in indoor as well as outdoor sports competitions.

Abdul Ghaffar Chandio
Director
Ph.: 022-2109103, 022-2772250 (Ext: #2026)
Email: dir.sports@admin.muet.edu.pk
http://www.muet.edu.pk/directorates/directorates-sportds

7.12 Cafeteria

There are many cafeterias / canteens across the campus which provide provides fresh quality edibles / meals prepared according to hygienic rules at affordable prices. The cafeterias serve almost 7,000 students. A committee is deputed to check and examine quantity, quality and rates of the food at the University. It also monitors the hygienic conditions of the cafeteria to ensure quality and hygiene of the food. The Committee also looks after the menu selection and quality of service. Taste buds come alive with our vast dining selections. Fast food, lunch, snack bars, baked goods, tea and coffee can be found at our campus.

Cafeteria is a place where students enjoy their favorite meals and have social interaction and they discuss academic and social issues with fellow students. This place is especially very much crowded during lunch or recess time.

8. MEHRAN UET, SHAHEED ZULFIQAR ALI BHUTTO CAMPUS, KHAIRPUR MIRS'

▪ Introduction

In order to promote Engineering Education in the interior region of the province and to reduce the supply-demand gap of engineering professionals, the Government of Sindh vide notification No. SO(C-IV) SGA & CD/ 4 29/09 dated 2nd April,2009 established a constituent College of Mehran UET, Jamshoro named as Mehran University College of Engineering & Technology, Khairpur Mir's.

The College has been further upgraded as Campus of Mehran UET, Jamshoro vide Notification No. Estt:(Teach:)/30 of 2013 dated 19-02-2013 and named as MUET Shaheed Zulfiquar Ali Bhutto (SZAB) Campus, Khairpur Mir's. The main objectives of the establishment of the College/Campus are as under:

- To provide science and technology education to the people of interior Sindh at their door step.
- To upgrade the technical skills of the people of Sindh.
- To meet the national demand for qualified engineers required for national industrial development.
- To promote the rural talent, enabling it thereby to participate in mainstream of national growth.

The number of students admitted to the First-Year classes in all undergraduate disciplines is 340 out of which 60 candidates are admitted under the self-finance scheme.

The MUET SZAB Campus, Khairpur Mir's offers undergraduate program in six disciplines, viz. Civil Engineering, Mechanical Engineering, Electrical Engineering, Petroleum & Natural Gas Engineering, Electronics Engineering and Software Engineering.

Being a campus of Mehran UET, the campus adopts the same teachings system, courses of studies, rules and procedures for admissions, examination system and student conduct and discipline as those of practiced by the university.

The campus headed by the Pro-Vice Chancellor is working under the administrative and academic Supervision of Mehran UET, Jamshoro.

▪ Officers of the Campus

Prof. Dr. Abdul Sami Qureshi
Pro-Vice Chancellor, MUET, SZAB Campus, Khp.

Prof. Dr. Syed Hyder Abbas Musavi
Director Academics/
In-charge Postgraduate

Dr. Mujeeb Iqbal Soomro
Director Administration

Dr. Syed Naveed Raza Shah
Chairman, Civil Engineering

Dr. Muhammad Ali Abro
In-Charge Chairman, Mechanical Engineering

Dr. Mazhar Hussain Baloch
Chairman, Electrical Engineering

Dr. Assadullah Memon
In-Charge Chairman Pet. & Nat. Gas Engineering

Dr. Muhammad Rafique Naich
In-charge Chairman, Electronics Engineering

Mr. Sajjad Ali Memon
Project Director

Syed Shoaib Ali Shah
In-charge Finance

Dr. Bilal Shams Memon
In-charge MIS

Dr. Sajjad Ali Mangi
Additional Director, QEC/ISO

Dr. Touqeer Jumani
Additional Provost Hostels

Mr. Abdul Rasheed Phulpoto
Deputy Director, ICPC

Mr. Allah Bachayo Memon
Deputy Librarian

Mr. Shakir Ali Soomro
Convener, SFAO Committee

Pir Syed Asif H. Shah Jilani
Assistant Director Sports

Mr. Imtiaz Ali Solangi
Assistant Registrar Administration

Mr. Faiq Gul Memon
Assistant Registrar Teaching

Mr. M. Ashraf Soomro
Assistant Registrar/
Secretary to PVC

Mr. Ayaz Ali Memon
Student Welfare Officer

Mr. Imdad H. Talpur
Store & Purchase Officer

Mr. Zahid H. Dahot
Assistant Public Relation Officer

Prof. Dr. Rafique Ahmed Memon
Chairman, Basic Sc.& Related Studies.

Dr. Noman Qadeer Soomro
In-charge Chairman, Software Engineering

Dr. Sajid Hussain Qazi
Focal Person,
Industrial Liaison/ORIC

Mr. Nadeem Ahmed Tunio
Focal Person, Examinations

Pir Nadeem A. Sarhandi
Security Officer

Mr. Jawwad Muhammad Hussain
Estate Officer

Mr. Naeem Ahmed Abro
Transport Officer

- **Fields of Study and Teaching Faculty**

Mehran UET, SZAB Campus, Khairpur Mir's offers courses leading to Bachelors' degrees in the following disciplines. All the six degrees are in Engineering and are titled Bachelor of Engineering (Name of Field); e.g., B.E Civil.

1. Civil Engineering
2. Electrical Engineering
3. Mechanical Engineering
4. Petroleum & Natural Gas Engineering
5. Electronics Engineering
6. Software Engineering

In addition to above, the BS (Mathematics) have been started from the Academic Session 2022.

- **ICPC (Information and Communication Processing Centre)**

All Departments/Sections and Residential Complex are connected through Fiber Optic cable to provide Internet (LAN & Wireless Wi-Fi) Service through ICPC installed latest Computer Server machine and Network switches, intranet at Campus and Residential Complex. The Campus is connected through Fiber link with HEC PERN bandwidth of 64Mbps.Voice (Intercom) Service is also provided through latest EPABX installed at ICPC along with HEC EDUROAM. Official Email accounts, and Microsoft DreamSpark accounts are also provided to Faculty/Staff and students of Campus. The campus has a state-of-the-art surveillance system with a central control room to monitor & review the Campus premises for security concerns.

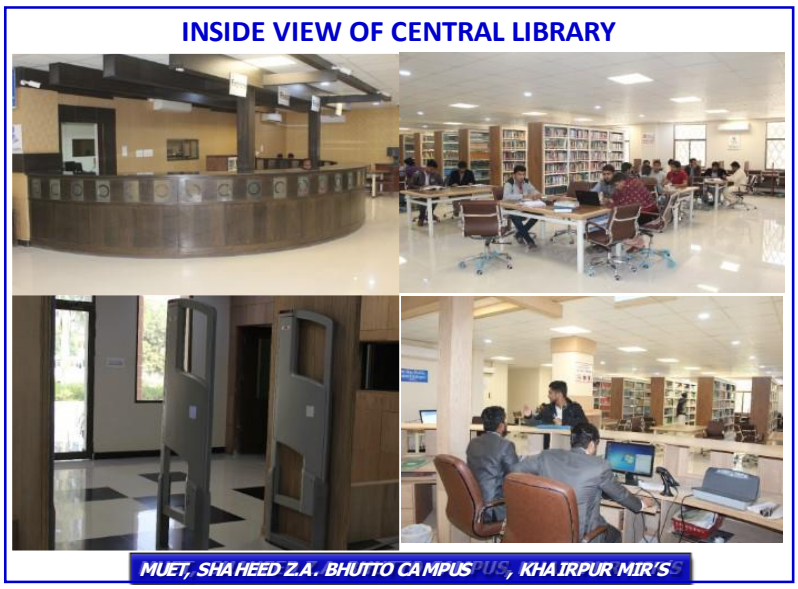
- **Transport Facilities**

The campus provides transport service to the students, faculty and staff along the routes, viz. Sukkur-Pano Aqil-Khairpur Mir's, Ranipur-Khairpur Mir's, Sobho Dero-Khairpur Mir's, Pir Jo Goth-Khairpur Mir's, Thari Mirwah-Khairpur Mir's and within Khairpur Mir's City.

- **Sports Facilities**

The campus has established a sports section which arranges various indoor and outdoor sports occasion on its own as well as in liaison with the Directorate of Sports of the University. However, sports complex has been planned in the premises of residential complex for students & staff where the construction work has already commenced. Gymkhana Khairpur is facility this campus to have sports activities there also.

- **Library**



The Campus Library contains more than 25000 books related to Engineering Science and Technology and its allied subjects. There are more than 7000 (approximately) in form of textbooks.

The Campus Library offers video conferencing with excellent image and sound quality, which includes video conferencing equipment. The room is available to campus departments; faculty and students also Library has two Group Discussion Rooms available for academics or students.

In Library & Online Information Center students and faculty members are also provided internet facility to use Digital Library for their project work for which Advance PCs are installed in the Online Information Center of the library.

Online Public Access Catalogue (OPAC) accessible through this url http://121.52.155.178:8000. To access interface for books catalog, full-text electronic journals and e-books on web. The Campus Library also offers Wi-Fi service.

The library is heavily used by the students, faculty members and researchers and is open from 8:00 am to 9:00 p.m. and also on Holidays during examination period. Professional staff available at service points to meet needs of the readers.

- **Residential accommodation for students & staff:**

The residence facility for boys students & male staff is being provided at Residential Complex (New Land). The resident facility for girls is also provided within the campus premises for the time being. The two (02) boys' hostels will start functioning in next session. The following facilities are available:

1.	Boys Hostel	-02 No.
2.	Girls Hostels	-02 No.
3.	Teachers /Hostel	-01 No.
4.	Mosque	-01 No. (Within Campus)
5.	Auditorium	-01 No.

The following are in planning and construction phase:

1.	Shopping Centre	-01 No.
2.	Health Centre	-01 No.
3.	Sports Complex including Gymnasium.	-01 No.
4.	Girls Hostels	-01 No.
5.	Teachers Houses	-40 Nos.
6.	Boys' Hostel	-02 No.

- **Cafeteria**

The Campus cafeteria was inaugurated in December-2015 with sitting capacity of approximately 100 people. The cafeteria is providing mess facility to the staff and teachers along with students.

- **Auditorium**

There existed one 500 Seating Capacity Auditorium inside the campus building used for conferences, Seminars and workshops.

8.1 Bachelor of Science in Mathematics (BSM)

8.1.1 The Department (Department of Basic Sciences & Related Studies)

The faculty of this department teaches / offers various fundamental compulsory courses including Mathematics, Statistics, English, Pakistan Studies and Islamic Studies/ Ethics. Students are also assisted to understand theoretical work of Mathematics with the help of programming languages such as C++ and MATLAB in well-equipped computer laboratory of the departments. The courses of Mathematics and Computer Sciences are also being taught to the Postgraduate students at the University campus by the faculty of Basic Sciences and Related Studies Department. In this way, this department is helping students to equip with necessary mathematical expertise to deal with problems being occurred in current technological era. The department also participates in offered short courses on various aspects of computer-oriented courses and Linguistic. The department currently comprises of 06 teachers of Mathematics, 02 teachers of English, 01 Research Associate (English), 02 teachers of Islamic Studies/Ethics, 02 teachers of Pakistan Studies,03 on Contract/Visiting Faculty (Mathematics), and 07 non-academic staff.

Role of the Department:

The department has main focus to provide overall knowledge of Mathematics and other subjects to not only students at this University but also other interested public across country and outside. Several faculty members of this department are maintaining their blogs and share academic notes and other things online for interested audience. This way the Department is providing global knowledge sharing and tries to continuously improve it. In addition, some of books on topics courses are also written by our faculty members as author/co-author.

Achievements of the Department:

- The success and the achievement of any academic institution and its departments can be gauged by the success and reputation enjoyed by its faculty members. In this context, department tries to hire position holders in subjects of Mathematics, English, Islamic studies and Pakistan studies from other universities. All faculty members hired here have strong academic record and mostly departmental and faculty positions to their credit and most of the faculty members are highly qualified with M.Phil. and PhD degrees and engaged in research with various disciplines of mathematics and their research work is published in national as well as international journals.

- Department regularly fulfills ISO objectives every year.

- The department has organized "**1st International conference on Mathematics & Applied Sciences 2022 (ICMAS-22)"** in collaboration with Shah Abdul Latif University Khairpur and Sukkur IBA University Sukkur, sponsored by Sindh Higher Education Commission, Government of Sindh.

Future objectives of the Department:

The (BSRS) department at MUET SZAB campus Khairpur Mirs, is offering Bachelor of Science in Mathematics (BSM) from this year to provide quality education in the field of Applied Mathematics at the doorstep of local area.

Vision of the Department:

The department of Basic Sciences and Related Studies aspires to the highest standards of excellence in teaching and service.

Program Educational Objectives (PEOs):
To skill students with the instinctive knowledge in the field of Mathematics, Statistics, English, Pakistan Studies and Islamic Studies/ Ethics and its uses in all fields in general and engineering in particular and further to equip them for higher studies and research in different disciplines.

8.1.2 Laboratory Facilities:

The department of Basic Sciences and Related Studies comprises of following one computer laboratory. The labs have latest Corei-7 PCs with high-speed internet connection. Forty PCs for undergraduate students are used for conducting C++ programming practical of students in addition to that same are being used for conducting various short courses related to C++, MATLAB and many others. The lab is extensively used by undergraduate student in order to complete their assignments and projects with the help of various software such as Microsoft Office etc.

8.1.3 The Faculty:

Chairman of the Department
Prof. Dr. Rafique Ahmed Memon

Professor:
Dr. Rafique Ahmed Memon
Ph.D. - Maths, Pakistan.

Associate Professors:

Assistant Professors:
Dr. Hadi Bux Chhijan
Ph.D. - Islamic Studies, Pakistan.

Mr. Kaleemullah Bhatti
M.S.- Maths, Pakistan.
(Ph.D. thesis submitted)

Mr. Jalil Ahmed Chandio
M.Phil. -Pakistan Studies, Pakistan.
(PhD, thesis submitted)

Mr. Nek Muhammad Katber
M.S.- Maths, Pakistan.
(PhD, China)

Ms. Quarterland Talpur
M.Phil. - English, Pakistan.

Lecturers:
Mr. Sanaullah Memon
M.S. - Maths, Pakistan.

Mr. Abdul Majid Indher
M.Sc. - Maths, Pakistan.

Dr. Baseer Ahmed Dars
PhD - Islamic Studies, Pakistan.

Mr. Masoom Ali Shahani
M.S. - Maths, Pakistan.

Mr. Sajid Ali Magsi
M.Phil. - English, Pakistan.

Lecturer (on contract):
Mr. Ghulam Abbas Memon
M.S. - Maths, Pakistan.

Ms. Nimra Arain
M.S. - Maths, Pakistan.

Visiting Teacher:
Mr. Fayaz Ahmed Khuhro
M.Sc. - Maths, Pakistan.

Research Associate:
Mr. Riaz Hussain Soomro
M.Phil. - English, Pakistan.

8.1.4 The Courses

Total Credit hours for four years = 129

First year (First Semester)				
S.#	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Calculus-I	MATH 105	3	100
2	Set Theory	MATH 110	3	100
3	Functional English	ENG 101	3	100
4	Islamic Studies/Ethics	IS 111/ SS 104	2	50
5	G-I* (Physics-I)	MEBP 101	3	100
6	Pakistan Studies	PS106	2	50
	Total		**16**	

First year (Second Semester)				
S.#	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Calculus II	MATH 150	3	100
2	Discrete Mathematics& Graph Theory	MATH 155	3	100
3	Statistics & Probability	MATH 160	3	100
4	Communication Skills	ENG 102	3	100
5	Introduction to Computers	CS 130	3	100
6	G-II*(Physics-II)	EL 127	3	100
	Total		**18**	

Second year (First Semester)				
S.#	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Differential Equations & Fourier Series	MATH 205	3	100
2	Linear Algebra	MATH 210	3	100
3	G-III* (Economics)	ECO 230	3	100
4	Technical Report Writing & Presentation Skills	ENG 215	3	100
5	Statics &Vector Analysis	MATH 250	3	100
	Total		**15**	

Second year (Second Semester)				
S.#	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Dynamics	MATH 255	3	100
2	Number Theory	MATH 270	3	100
3	Computer Programming C++, Matlab	MATH 260	3	100
4	Group Theory	MATH 265	3	100
5	Topology	MATH 275	3	100
	Total		**15**	

Third year (First Semester)				
S.#	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Algebraic Topology	MATH 305	3	100
2	Differential Geometry & Tensor Analysis	MATH 310	3	100
3	Partial Differential Equations	MATH 315	3	100
4	Real Analysis- I	MATH 320	3	100
5	Rings & Fields	MATH 350	3	100
	Total		**15**	

Third year (Second Semester)				
S.#	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Introduction to Simulator Software	MATH 370	2+1	100
2	Transforms	MATH 355	3	100
3	Complex Analysis	MATH 360	3	100
4	Analytical Dynamics	MATH 375	3	100
5	Real Analysis-II	MATH 365	3	100
	Total		**15**	

Fourth year (First Semester)				
S.#	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Numerical Analysis-I	MATH 405	3+1	150
2	Functional Analysis	MATH 410	3	100
3	Fluid Mechanics	MATH 415	3	100
4	Optimization Techniques	MATH 420	3	100
5	Mathematical Physics	MATH 425	3	100
	Total		**16**	

Fourth year (Second Semester)				
S.#	**Course Title**	**Course Code**	**Cr. Hr.**	**Marks**
1	Inferential Statistics	MATH 470	3	100
2	Numerical Analysis-II	MATH 480	3+1	150
3	Integral Equations	MATH 465	3	100
4	Econometrics	MATH 455	3	100
5	Operation Research	MATH 460	3	100
6	Comprehensive Viva-Voce	MATH 499	3	100
	Total		**19**	

This list may be extended with consent of Board of Studies keeping in view the availability of expertise in the University.

* The courses G-I, G-II, G-III may be chosen from following titles.

G-I	G-II	G-III
Physics-I	Physics-II	Economics
Chemistry	Accounting	Sociology
Philosophy	Environmental Sciences	

8.2 Department of Civil Engineering

8.2.1 The Department

The Department of Civil Engineering of the Mehran UET, Shaheed Zulfiqar Ali Bhutto Campus, Khairpur Mir's provides state-of-the-art, essential, and advanced Civil Engineering education to the aspiring Civil Engineering graduates according to the requirements of field in a dynamic learning environment that emphasizes problem solving skills, team-work, communication skills and leadership qualities. The Department also evolves as a research-based solution provider to the construction industry. The Undergraduate program of the Department also offers the selection of the field of interest related to the Civil Engineering to the final year students by assigning them a thesis/project. The thesis/project may be specific to a specialization of Civil Engineering like Structural Engineering, Material Engineering, Geotechnical Engineering, Highway & Transportation Engineering, Hydraulics, Irrigation & Drainage Engineering, Construction Mgt. and Environmental Engineering. After successful completion of the undergraduate program, our graduates acquire great opportunities at entry level positions and finally, recognized as highly competent professionals worldwide.

The Department teaches many courses relevant to the various fields of Civil Engineering. Theory classes of different subject are complemented by tutorials and laboratory works, for which adequate facilities and advanced equipment are available. In addition, the students are taken to field visits of the Civil Engineering projects such as building structures, road construction works, geotechnical works, water treatment plants, dams, steel mills and on-going construction projects. During the summer vacations, the students are encouraged to undertake the internship on various Civil Engineering projects in the industry. The Department also has a Software Laboratory which provides computing facility and opportunity to learn latest software being used globally in the field of Civil Engineering. The Department also offers Master of Engineering in Civil Engineering.

The Department strictly follows the Outcome Based Education (OBE) system to fulfill the requirements of Pakistan Engineering Council as per Washington Accord. Evaluation of students through various means strictly follows the OBE criteria and based on specific course learning outcomes associated with each course. This student centric approach focuses on outcomes from individual student by the end of the course.

8.2.2 The Faculty:

Chairman of the Department:
Dr. Syed Naveed Raza Shah
Phone: 0243-9280312 /**Ext.:** 7301

Professor

Prof. Dr. Kanya Lal Khatri
PhD, Australia.

Dr. Syed Naveed Raza Shah
PhD, Malaysia.

Associate Professors

Dr. M. Jaffar Memon
PhD, China.

Dr. Ghulam Shabir Solangi
PhD, Pakistan.

Dr. Sajjad Ali Mangi
PhD, Malaysia.

Assistant Professors

Dr. Dildar Ali Mangnejo
M.E., Pakistan.

Engr. Abdul Razzaque Sandhu
M.E., Pakistan.

Engr. Rabia Soomro
M.E., Pakistan.
(On study leave)

Lecturers

Engr. Abdul Qayoom Memon
M.E., Pakistan.

Engr. Hemu Karira
M.E., Pakistan.

Engr. Touqeer Ali Rind
M.E., Pakistan.

Engr. Dhanesh Kumar
M.E., Malaysia.

Engr. Sanghaar Bhutto
M.E., Malaysia.

Engr. Mudasar H. Janwery
M.E., Pakistan.

Laboratory Engineers

Engr. Tajik Mustafa Shah
M.E., Pakistan

Engr. Ghulam Rasool Siddiqui
M.E., Pakistan.

Engr. Ashfaq Ahmed Jhatial
(On study leave)

8.2.3 Laboratory Facilities

The Department of Civil Engineering, MUET, SZAB Campus, has nine fully functional laboratories equipped with advanced equipment for academics and research purposes. The list of the laboratories is given below:

1. Concrete Laboratory
2. Fluid Mechanics & Hydraulics Laboratory
3. Surveying Laboratory
4. Highway Engineering Laboratory
5. Soil Mechanics Laboratory
6. Environmental Engineering Laboratory
7. Computer Laboratory
8. Software Laboratory
9. Engineering Drawing Hall

8.2.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	CE102	Geometrical Drawing	02	01
	CE106	Civil Engineering Materials	03	01
	CE116	Engineering Mechanics	03	01
	FE101	Functional English	03	00
	CS146	Introduction to Computing & Programming	02	01
		Total	**13**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	CE112	Surveying-I	02	01
	MTH108	Applied Calculus	03	00
	PS106	Pakistan Studies	02	00
	SS111/SS104	Islamic Studies / Ethics	02	00
	CE122	Civil Engineering Drawing	02	01
	CE125	Engineering Geology	03	01
		Total	**14**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
3rd Semester	CE207	Railways and Water ways Engineering	03	00
	CE212	Mechanics of Solids-I	02	01
	MTH204	Differential Equations, Fourier Series and Laplace	03	00
	CE227	Fluids Mechanics and Hydraulics	03	01
	ENG201	Communication Skills	02	00
	CE222	Theory of Structures	02	00
		Total	**15**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
4th Semester	CE241	Applied Hydraulics	03	01
	CE231	Construction Engineering	03	00
	CE251	Mechanics of Solids-II	03	00
	MTH206	Complex Analysis, Statistical Methods and Probability	03	00
	CE202	Surveying-II	03	01
	CE246	Architectural and Town Planning	02	00
		Total	**17**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
5th Semester	MTH303	Linear Algebra and Numerical Methods	03	01
	CE306	Structural Analysis	03	00
	CE345	Plain and Reinforced Concrete	03	01
	CE362	Hydrology	03	00
	CE355	Project Management	02	00
	CE366	Geometric Design of Highways and Airports	02	00
		Total	**16**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
6th Semester	CE351	Environmental Engineering-I	02	01
	CE326	Soil Mechanics	03	01
	CE337	Reinforced and Pre-Stressed Concrete	03	00
	CE316	Steel Structures	03	00
	ENG301	Technical & Scientific Writing	02	00
	CE341	Quantity Surveying and Estimation	03	00
		Total	**16**	**02**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
7th Semester	CE406	Structural Design and Drawing	03	01
	CE411	Geotechnical Engineering	03	01
	CE431	Environmental Engineering-II	03	00
	CE422	Professional Ethics	02	00
	CE423	Engineering Economics	02	00
	CE498	Final Year Project (FYP)-I	00	03
		Total	**13**	**05**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
8th Semester	CE426	Foundation Engineering	03	00
	CE443	Irrigation and Drainage Engineering	03	01
	CE438	Construction Planning & Management	03	00
	CE451	Traffic Engineering and Pavement Design	02	01
	CE499	Final Year Project (FYP)-II	00	03
		Total	**11**	**05**

8.2.5 Career Opportunities

The knowledge provided at the Civil Engineering Department, MUET, SZAB Campus enables our students to join the Civil Engineering industry as fresh graduate, educational institutions as entry level instructors, or set up their own businesses. Typical employment sectors for Civil Engineering include public sector departments (Buildings, Highways, Railways, Airports, Irrigation, Water and Power, Ports), consultation companies, contractors, local authorities, and non-profit organizations. Due to the equivalent focus on research and academics from initial level, many of our graduated students have chosen various Universities as an academia or researcher and achieved good fame in their relevant field. The B.E program at MUET, SZAB Campus provides clear route to a professional career in Civil Engineering.

8.3 Department of Electrical Engineering

1.3.1 The Department

The Department of electrical engineering at Mehran UET is one of the pioneer and prestigious department. The department was established in 2010. The department is equipped with qualified faculty and state of the art laboratories. These laboratories serve not only undergraduate and postgraduate students but also provide services to the public and private sectors in the context of training, equipment testing calibration and consultancy services. Besides the academic activities, the faculty and students are involved in research and development activities in collaboration with industries.

The vision of the Department of Electrical Engineering

To provide the world class education and research opportunities in the field electrical engineering at par with national and international levels.

Mission Statement of the Department of Electrical Engineering

The department of electrical engineering aims to provide a high quality of education to produce skilled, dynamic, creative and ethical professionals to take an active part in the development of the society.

Program Educational Objectives (PEOs)

The B.E Electrical Engineering Program aims at producing engineering Graduates who will:

PEO-1: To harness in depth knowledge of electrical engineering for problem analysis in the relevant field.
PEO-2: Effectively utilize their technical and managerial skills for the solution of engineering problems.
PEO-3: Demonstrate professional standards of moral and ethical values as a team leader or as an individual.

8.3.2 The Faculty

Chairman of the Department:
Dr. Mazhar Hussain Baloch
Phone: 0243-715365, Ext: 7401
Email: chairmanelectrical@muetkhp.edu.pk

Associate Professor:

Dr. Mazhar Hussain Baloch
PhD, (SJTU, China), Post. Doc., (USM, Malaysia)

Dr. Touqeer Ahmed Jumani
PhD, (UTM, Malaysia)

Assistant Professors:

Engr. Shakir Ali Soomro
M.E., PhD, (enrolled @ MUET)

Engr. Nadeem Ahmed Tunio
M.E., PhD, (enrolled @ MUET)

Dr. Mohsin Ali Tunio
M.E., PhD (UTM, Malaysia)

Engr. Irfan Ahmed Bajkani
M.E., PhD (enrolled @ MUET)

Dr. Ahsanullah Memon
M.E., PhD (UTM, Malaysia)

Dr. Sajid Hussain Qazi
M.E., PhD (UTM, Malaysia)

Lecturers:

Engr. Kalsoom Baghat
M.E., (On study leave for PhD)

Engr. Shafqat Hussain Memon
M.E., PhD, (enrolled @ MUET)

Engr. Rasool Akhtar Alias Osama
M.E., (MUET)

Engr. Sara Hafeez (On Contract)
M.E., (MUET)

Engr. Ghulam Abbass Lashari (On Contract)
M.E., (PR., China)

Engr. Baqir Ali Mirjat (On Contract)
M.E., (MUET)

8.3.3 The Department of Electrical Engineering is equipped with state-of-the-art labs to cater the practical/ experimental requirements to supplement the course work of the B.E Electrical Program.

Following Laboratories have been established in the department:

Sr. No.	List of Laboratories	Sr. No.	List of Laboratories
01.	Power System	06.	Communication System
02.	Instrumentation & Control	07.	Electrical Machines
03.	Basic Electrical Engineering	08.	Power Electronics
04.	High Voltage Engineering	09.	Computer Lab
05.	Basic/Applied Electronics Engineering	10.	Software Lab

8.3.4 Laboratories Staff

Sr. No.	Laboratories Staff	Sr. No.	Laboratories Staff
1.	**Lab. Engineers:** **Engr. Muhsan Ali Mari,** M.E., (on study leave for PhD)	5.	**Engr. Musavir Hussain,** M.E., (on study leave for PhD)
2.	**Engr. Asif Ali Solangi,** M.E., (on study leave for PhD)	6.	**Lab. Supervisors:** **Mr. Noman Khan Pathan**, B.Tech., (QUEST)
3.	**Engr. Basheer Ahmed,** M.E., (on study leave for PhD)	7.	**Mr. Fida Mangi,** DAE (Electrical)
4.	**Engr. Zeeshan Anjum,** M.E., (on study leave for PhD)		

8.3.5 Course Outline

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	EL-111	Electrical Workshop Practice	0	1
	EL-112	Applied Physics	3	1
	EL-113	Linear Circuit Analysis	3	1
	CS-104	Introduction to Computing and Programming	3	1
	ENG-101	Functional English	2	0
	MTH-102	Applied Calculus	3	0
		Total	**14**	**04**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	EL-122	Electrical Network Analysis	3	1
	CE-118	Applied Mechanics	3	1
	MTH-112	Linear Algebra and Analytical Geometry	3	0
	PS-106	Pakistan Studies	2	0
	IS-111 /SS-104	Islamic Studies / Ethics	2	0
	ENG-102	Communication Skills	2	0
	EL-127	Engineering Drawing	0	1
		Total	**15**	**03**

3rd Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	EL-211	Electronic Devices & Circuits	3	1
	EL-214	Electrical Machines	3	1
	EL-215	Theory of EMF	3	0
	MTH-212	Differential Equations & Fourier series	3	0
	ME-271	Applied Thermodynamics	3	0
		Total	**15**	**02**

4th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	EL-223	Applied Electronics	2	1
	EL-224	Digital Logic Design	3	1
	ES-264	Introduction to Embedded Systems	3	1
	ENG-304	Technical and Scientific Writing	3	0
	MTH-213	Complex Variables & Transforms	3	0
		Total	**14**	**03**

5th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	EL-313	Instrumentation & Measurements	3	1
	EL-314	Power Generation Systems	3	0
	TL-311	Communication Systems	3	1
	MTH-336	Numerical Analysis & Computer Applications	3	1
	ES-266	Signals & Systems	3	1
		Total	**15**	**04**

6th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	EL-322	Advanced Electrical Machines	3	1
	EL-323	Electrical Power Transmission	3	1
	EL-325	Power Economics & Management	3	0
	ES-325	Linear Control Systems	3	1
	MTH-311	Statistics and Probability	3	0
		Total	**15**	**03**

7th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	EL-411	Power System Analysis	3	1
	EL-415	Power Electronics	3	1
	EL-499	Senior Design Project	0	3
	SS-416	Professional Ethics	3	0
		Total	**09**	**05**

8th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	EL-423	Power System Protection	3	1
	EL-424	High Voltage Engineering	3	1
	EL-425	Power Distribution & Utilization	3	1
	EL-499	Senior Design Project	0	3
		Total	**09**	**06**

8.3.6 Career Opportunities

Electrical Engineers have vast career opportunities in wide range of industries and organizations depending on their respective specializations. In Pakistan industries and organizations both Public and Private sector, such as, Pakistan Atomic Energy Commission, Pakistan International Airlines, Civil Aviation Authority (CAA), Pakistan Steel Mills, PEPCO, NTDC, GENCOs, DISCOs, K-Electric, PTCL, NTC, IPPs, Fertilizer and chemical industries such as OGDCL, SNGPL, Engro, FFC and various other national and international industries and organizations hire Electrical Engineers for design, control, operation and managerial jobs. Electrical Engineers are generally encouraged to attend continual professional development course (CPD) and acquire skills required in the job market to secure attractive and challenging career opportunities. This department also conducts such CPD courses which help in career development of the young engineers.

8.4 Department of Electronic Engineering

8.4.1 The Department

Electronic Engineering has played a very vital role in modern industrial and human development since decades that is why it is growing field with the passage of every passing time. Continuous advancement in Electronic Engineering in terms of fabrication processes including material, devices, circuit and control has led it to have significant importance in emerging technologies for its use in all major industrial applications. Thus, it has as a strong share in the market, which needs such quality programs to be initiated regarding educating the youth of society to create highly skilled individuals in this important and most challenging discipline of engineering at both the undergraduate as well as post graduate levels.

Electronic Engineering has revolutionized the standard of mankind, living style and industrial growth using modern electronics and microprocessor technology, therefore its significance cannot be denied. The Department of Electronic Engineering offers quality degree program at undergraduate level i.e., B.E (Electronic Engineering). The focus of this program is to produce sound technical manpower to further strengthen planning, designing of innovative projects in this particular area. The students during the entire degree program will learn different subjects on diversified field including Microprocessors & Microcontrollers, Mechatronics Applications, Analog & Digital Communication, Signal Processing, Power Electronics, Artificial Intelligence, Measurements & Instrumentation, FPGA-Based System Design, Sequential Circuit Design, Optoelectronics, Computer Communication & Networking etc.

The Department initially offers Undergraduate Program. The courses of the program have been drawn from the curriculum guidelines of HEC/PEC and duly approved by the Academic Council of the University.

Vision of Department:

To provide the highest quality of learning and research opportunities for the students in the field of Electronic Engineering as well as make them competent professionals with high professional ethics to compete on a global scale.

Mission of Program:

To produce Quality Electronic engineers with high intellect and broad vision who can meet current needs and foresee future needs of the nation in the field of Electronics by serving research and professional practice.

Program Educational Objectives (PEOs):

1. Apply in-depth electronic engineering knowledge and analytical skills to initiate innovative solutions for the society.
2. Quest for learning, establishing collaborations and engaging in continuous professional development nationally and internationally.
3. Adaptive in multidiscipline and multicultural environment and work effectively as a team lead or team member possessing strong soft skills and high moral ethics.

8.4.2 The Faculty

In-Charge Chairman of the Department:
Dr. Muhammad Rafique Naich
Phone: 0243-686074 / **Ext.:** 7701

Professor:

Prof. Dr. Hyder Abbas Musavi
D, Pakistan.

Dr. M. Rafique Naich
PhD, China.

Ms. Kaneez Fatima
M.E., Pakistan.

Lecturers:

Mr. Maroof Panhwar
M.E., Pakistan.

Engr. Saleemullah
M.E., China.
(Contract Basis)

Lab Engineer:

Ms. Shadab Soomro
M.E., Pakistan.

Assistant Professors:
Mr. Halar Haleem Memon
M.E., Pakistan.
(On Study Leave)

Ms. Bushra Shaikh
M.E., Pakistan.

Ms. Darshna Tulsi Das
M.E., Pakistan.

Research Associates / Lecturer:
Engr. Nauman Memon
M.E., Pakistan.

Engr. Falak Naz
M.E., Pakistan.

8.4.3 Laboratory Facilities

The Department of Electronic Engineering is equipped with the latest equipment ranging from basic electronic devices, simulators and trainers to more advanced FPGA trainers & development boards. Excellent course work and due practical experience, provide ample job opportunities to over graduates and both public and private sector organization, national and multinational companies. The Department of Electronic Engineering facilitates its students with the following 12 laboratories:

1. Applied/Basic Electronics Lab
2. Communication Systems Lab
3. Instrumentation and Control Lab
4. Electrical Machines Lab
5. Software Lab
6. Computer Lab

- Basic Electrical Engineering Lab
- Power Electronics Lab
- Digital Electronics & Microprocessor Lab
- Signal Processing and FPGA Lab
- Industrial Automation and Robotics Lab
- Advanced Electronics Lab

8.4.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	ENG-101	Functional English	3	0
	MTH-102	Applied Calculus	3	0
	CS-150	Introduction to Computing	2	1
	EL-116	Applied Physics	3	1
	SS-107	Professional Ethics	2	0
	ES-102	Electronics Workshop	0	1
		Total	**13**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	MTH-112	Linear Algebra & Analytical Geometry	3	0
	CS-113	Computer Programming	2	1
	ES-112	Basic Electronics	3	1
	EL-107	Electrical Circuits	3	1
	PS-106	Pakistan Studies	2	0
	SS-104	Islamic Studies/Ethics	2	0
		Total	**15**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
3rd Semester	ES-203	Electronic Circuit Design	3	1
	ES-213	Digital Electronics	3	1
	ES-223	Measurements & Instrumentation	3	1
	MTH-201	Differential Equations & Fourier Series	3	0
	INM-291	Engineering Management	2	0
	CS-215	Computer Aided Engineering Design	0	1
		Total	**14**	**04**

4th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	ES-243	Electromagnetic Fields	3	0
	ES-253	Integrated Electronics	3	1
	EL-202	Electrical Machines	2	1
	MTH-211	Complex Variables & Transforms	3	0
	ENG-201	Communication Skills	2	0
		Total	**13**	**02**

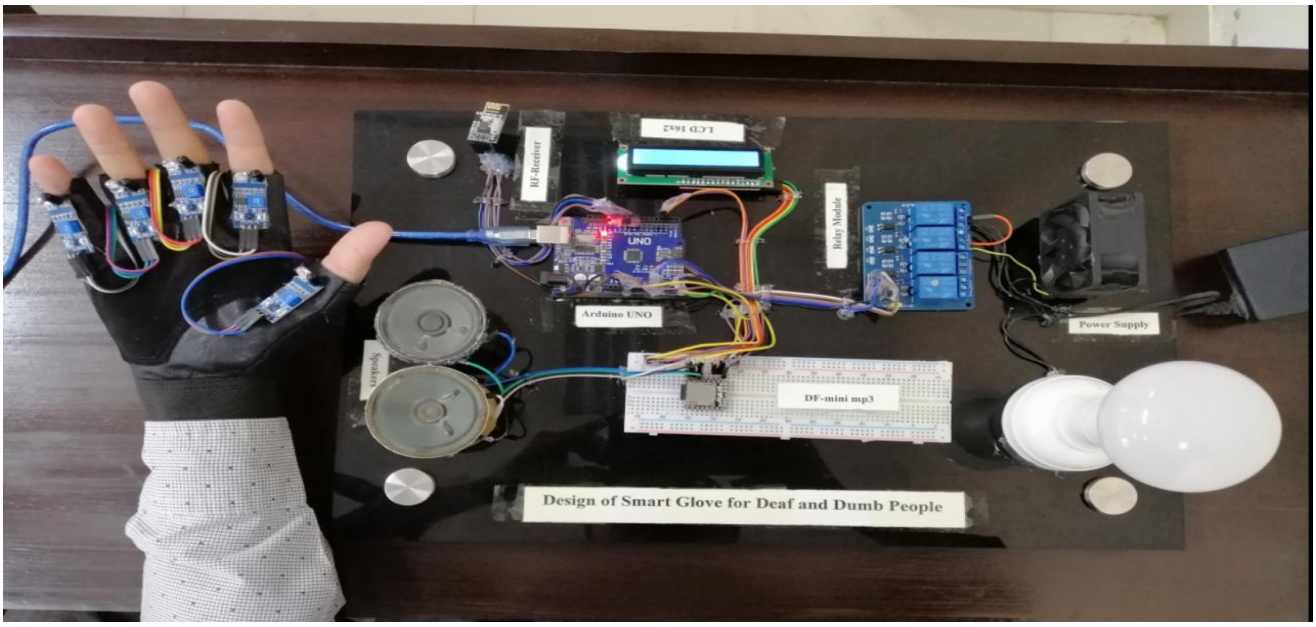
5th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	ES-304	Signals & Systems	3	1
	ES-314	Introduction to Embedded Systems	3	1
	SS-338	Sociology for Engineers	2	0
	EL-319	Power Electronics	3	1
	MTH-310	Numerical Methods	3	1
		Total	**14**	**04**

6th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	TL-385	Communication Systems	3	1
	ES-353	Control Systems	3	1
	ES-324	Probability and Random Signals	3	0
	ES-373	FPGA-Based System Design	3	1
	TL-397	Optoelectronics	2	1
		Total	**14**	**04**

7th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	TL-416	Computer Communication & Networking	3	1
	ES-413	Digital Control System	3	1
	ES-423	Embedded Systems Design	3	1
	ENG-401	Technical Report Writing & Presentation Skills	2	0
	ES-499	Electronic Engineering Project-1	0	3
		Total	**11**	**06**

8th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	ES-451	Mechatronic Systems and Applications	3	0
	SS-411	Entrepreneurship	3	0
	ES-433	Digital Signal Processing	3	1
	CS-490	Artificial Intelligence	3	1
	ES-499	Electronic Engineering Project-2	0	3
		Total	**12**	**05**

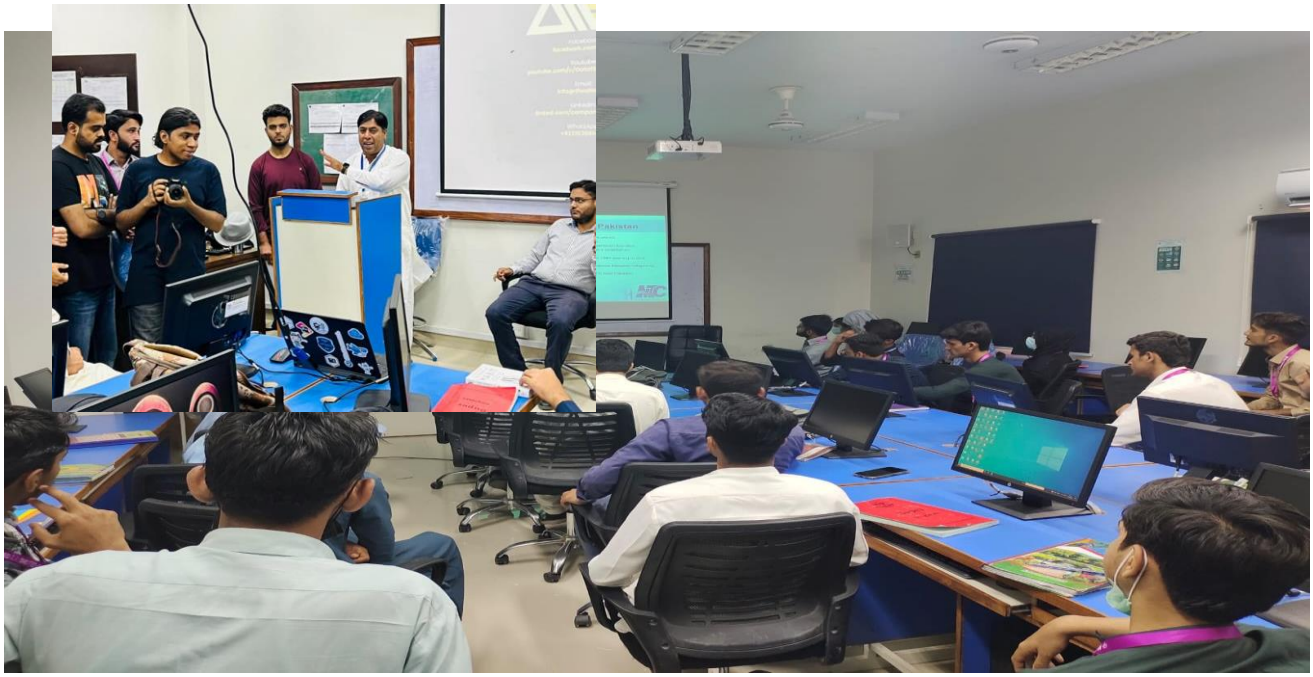
8.4.5 Laboratory Photos:



8.4.6 Career Opportunities

An Electronic Engineer can find lucrative jobs in well reputed private and public sector organizations such as: PTCL, KE, SUPARCO, Fertilizer Industry, Petrochemical sector, CAA, WAPDA, Pharmaceutical companies, Research & Development Organizations, Mobile Operators and Telecom Sectors, Electric Utility companies (MEPCO, HESCO, SEPCO etc.), Petroleum companies (PPL, OMV), Manufacturing Industries (Engro, Lucky Cement, Nestle etc.) and various other national and multinational organizations.

- One day 36th IEEE multi-topic international symposium 2022, Karachi, held on 16th march 2022.
- One Day Session on "Telecommunication Systems and Applications", organized by Electronics Deptt, MUET SZAB CAMPUS, held on 17th March,22, by Engr. Ghulam Murtaza Memon (ADE, NTC Larkana)



- One Day Workshop on "LabVIEW Programming & its applications", by Engr. Darshna Tulsi Das & Engr. Saleemullah Memon from Electronics Deptt: MUET SZAB Campus, Khairpur Mir's.

- Two days Boot camp on A.I and Industry 4.0 held in computer lab of Electronic Department organised by IEEE Robotics and Automation Society by trainers of Alt-Ed , who provided such engaging training with VR headset for real life experience.




8.5 Department of Mechanical Engineering

8.5.1 The Department

We, the mechanical engineers, are tasked to build the nation.

Mechanical Engineering Department (MED), MUET, SZAB Campus Khairpur Mirs' has been training students to create solutions to make the world a better place since its inception over 10 years ago.

The Mechanical Engineering Department (MED), MUET, SZAB Campus Khairpur Mirs' intends to become a hub of high-quality engineering education and research to produce skilled, innovative, entrepreneurial mechanical engineers who meet the ever-changing engineering demands. Mechanical Engineering Department, MUET, SZAB Campus Khairpur Mirs' always strive hard to produce engineers and researchers with sound knowledge of traditional and emerging areas of engineering together with innovative design abilities to achieve sustainable national development. This department also intends to develop the skills of the students to make them among the globally competitive engineers and researchers by providing quality education and research facilities, organizing conferences, seminars, and workshops, the opening of students' chapters, and technical lectures. Internships that relate academic knowledge to lifelong job experiences are encouraged by the department. MED also provides students with the opportunity to join professional societies such as ASME (American Society of Mechanical Engineers) and ASHRAE (American Society of Heating, Refrigeration, and Air-Conditioning Engineers), and is working to join and become affiliated with IMechE (Institute of Mechanical Engineers).This department has recently launched a society "Soft Skills and Character Building Society" to work for the improvement of undergraduate students and our alumni's soft skills and their character building.

The Mechanical Engineering Department (MED) of MUET, SZAB Campus Khairpur Mirs' is the first to provide graduate degrees. Currently, the department offers a Master of Engineering (M.E.) degree with a major in Energy Systems Engineering (Evening).

The department has a policy of assessing its graduate and undergraduate programs regularly to ensure that they are up to date with the newest and emerging developments and trends in mechanical engineering. The main campus BoS (Department Board of Studies) is responsible for revising the present curricula after feedback from MUET SZAB Campus. The BoS is made up of senior faculty members from the department's main campus, the Chairman from the MUET SZAB Campus, and a few senior faculty members/Professors from mechanical engineering departments at other top institutions/ universities around the country. The Chairman of the Department from the main campus leads the BoS.

The members of BoS met regularly to address different aspects of the revision and solicited feedback from:

- MUET SZAB Campus's D-BoS (departmental Board of Studies),
- D-OBE (Outcome-Based Education) Committee,
- Consultation with the D-IAB (Industrial Advisory Board),
- D-CRC (Curriculum Review Committee),
- A survey of selected top national and international institutes/universities with a reputation for mechanical engineering expertise,
- Recommendations/feedback from graduate students, alumni, and potential employers.

Vision

Mechanical Engineering Department intends to become a hub of **quality engineering education** and research so as to produce **ethical, responsible, skilled, innovative, entrepreneurial mechanical engineers** who meet the ever-changing demands **and socio-economic needs**.

Mission

Mechanical Engineering program strives to produce **professional** engineers and researchers with sound knowledge of traditional and emerging areas of mechanical engineering together with the ability of having critical and innovative thinking and make them globally competitive.

Program Education Objectives (PEOs)

After four years Program of in B.E. Mechanical Engineering, graduates of this department are expected to be able to:

PEO 01 Practice outstanding knowledge of mechanical engineering and interdisciplinary subjects to solve analytical and practical engineering problems.

PEO 02 Address sustainable socioeconomic and technical development, and use modern tools and techniques.

PEO 03 Maintain a high level of professionalism, ethical responsibility, and integrity at work.

PEO 04 Demonstrate effective communication and leadership skills, as well as a desire to continue improving their knowledge using a holistic approach.

8.5.2 HOD Message

Since the beginning of our campus, Mechanical Engineering Department (MED) has been continuously advancing and striving hard for excellence to be recognized nationally and globally as one of the top mechanical engineering departments. Our primary goal for undergraduate students has been to provide high-quality engineering education to future leaders. MED's mission is to spread knowledge and technology in mechanical and associated fields through high-quality teaching, research, CEPs, OELs, PBL-based solutions, and applications. We try to incorporate the most recent advancements into our innovative and appealing curriculum.

A competent academic and research team is an essential ingredient of every engineering department. MED is managed by dedicated highly qualified trained and experienced faculty, who has graduated from top-ranked world-renowned institutions. Faculty and teaching staff are up to date on the latest teaching techniques and provide each student particular attention to ensure that every student discovers himself to the fullest extent possible, according to his/her ability/aptitude and at his/her own pace. The MED maintains a student-teacher ratio of < 25:1.

A new generation of Mechanical Engineers, fostered with the essential skills and an inventive attitude, is required in today's fast-changing world, with ever-growing difficulties of finite resources and rapidly changing climate. Mechanical engineers create cutting-edge technology and thrilling solutions to benefit humanity. We try to provide our students with a joyful, productive, and gratifying experience at all stages of their program study so that they can discover the fascinating world of Mechanical Engineering. MED also provides quality engineering education to all of its young graduate students, including leadership, management, and collaboration skills, internship experience, and participation in student activities. We are confident that focusing on such areas will prepare our young graduates to take on leadership responsibilities in the future, as well as become entrepreneurs and industry solution providers.

The Mechanical Engineering Department (MED)also offers HEC approved evening program for Master of Engineering (M.E., Energy Systems Engineering).

We are pleased to share with you that many of our students are serving in reputed national/ multinational industries/organizations/firms nationally and internationally and also pursuing higher education at prestigious universities in Pakistan and overseas.

We would like to extend a warm welcome to all of you to the Mechanical Engineering Department at MUET, SZAB Campus Khairpur Mirs'.

8.5.3 Laboratory Facilities

Following labs are established in this department to cater to the practical/ experimental requirements of the program offered:

1. Automobile Laboratory
2. Aerodynamics Laboratory
3. CAD/CAM Laboratory
10. Mechanics of Machine Laboratory
11. Mechanical Vibrations Laboratory
12. Control Engineering Laboratory

4. CNC Laboratory
5. Engineering Statics Laboratory
6. Fluid Mechanics Laboratory
7. Heat Transfer Laboratory
8. Heating Ventilation & Air Condoning Laboratory
9. Material Testing Laboratory
13. Renewable Energy Laboratory
14. Thermodynamics Laboratory
15. Fitting Shop
16. Machine Shop
17. Welding Shop
18. Wood Workshop

8.5.4 The Faculty

Chairman of the Department:
Dr. Muhammad Ali Abro
Phone: 0243-715365 / **Ext.:** 7501

ASSOCIATE PROFESSORS:

Dr. Sadiq Ali Shah
PhD, United Kingdom.

Dr. Muhammad Ali Abro
PhD, South Korea.

Dr. Mujeeb Iqbal Soomro
PhD, South Korea.

ASSISTANT PROFESSORS:

Dr. Aqeel Ahmed Bhutto
Ph., Malaysia.

Dr. Bilawal Ahmed Bhayo
Ph., Malaysia.

Engr. Ali Nawaz Sanjrani
ME, Pakistan.

Engr. Jahanzaib Soomro
M.E., Pakistan.
(On study leave for PhD)

Engr. Majid Ali Wassan
M.E., Malaysia.
(On study leave for PhD)

Engr. Qadir Nawaz
M.E., Pakistan.
(On study leave for PhD)

LECTURERS:

Dr. Danish Ali Memon
PhD, Malaysia.

Dr. Zaheer Ahmed
PhD, Turkey.

Engr. Ali Anwar Brohi
M.E., China.
(On study leave for PhD)

Engr. Aurangzaib Wadho
M.E., Pakistan.

Engr. Abdul Ahad Noohani
M.E., Pakistan.

Engr. Talib Hussain Ghoto
M.E., Pakistan.

Engr. Muhammad Haris Khan
M.E., Pakistan.

Engr. Awais Junejo
M.E., Pakistan.
(On study leave for PhD)

8.5.5 The Courses

	Course Codes	Name of Subject	Credit Hours	
			Theory	Practical
1st Semester	SS 111 / SS 104	Islamic Studies / Ethics	2	0
	(PS 106)	Pakistan Studies	2	0
	(MTH 108)	Applied Calculus	3	0
	(ME 102)	Engineering Drawing & Computer Graphics	2	2
	(ME 112)	Engineering Statics	2	1
	(ME 122)	Engineering Materials	3	0
		Total	**14**	**03**

	Course Codes	Name of Subject	Credit Hours	
			Theory	Practical
2nd Semester	(EN 101)	Functional English	2	0
	(MTH 103)	L.A, D.E & A.G	3	0
	(ME 132)	Engineering Dynamics	2	0
	(EL 103)	Electrical Technology	2	1

	(ME 142)	Workshop Practice	0	2
	(ES 281)	Basic Electronics	2	1
	(ME 151)	Applied Physics	2	0
		Total	**13**	**04**

	Course Codes	**Name of Subject**	**Credit Hours**	
			Theory	**Practical**
3rd Semester	(MTH 213)	Complex Variables & Transforms	3	0
	(ME 202)	Strength of Materials-I	2	0
	(CH 202)	Applied Chemistry	2	0
	(ME 222)	Thermodynamics-I	3	0
	(ME 252)	Fluid Mechanics-I	3	1
	(CS 232/255)	Computer programming	2	1
		Total	**15**	**02**

	Course Codes	**Name of Subject**	**Credit Hours**	
			Theory	**Practical**
4th Semester	(MTH 336)	Numerical Analysis &Computer Applications (NACA)	3	1
	(ME 232)	Strength of Materials-II	3	1
	(ME 242)	Thermodynamics-II	3	1
	(ME 226)	Fluid Mechanics-II	3	1
	(ME 212)	Mechanics of Machines-I	2	0
		Total	**14**	**04**

	Course Codes	**Name of Subject**	**Credit Hours**	
			Theory	**Practical**
5th Semester	(ME 302)	Heat & Mass Transfer	3	1
	(ME 312)	Applied Aerodynamics	3	1
	(EE 325)	Safety, Health & Environment	2	0
	(ME 332)	Machine Design -I	3	0
	(EN 306)	Communication Skills and Technical Writing	3	0
	(ME 366)	Mechanics of Machine-II	2	1
		Total	**16**	**03**

	Course Codes	**Name of Subject**	**Credit Hours**	
			Theory	**Practical**
6th Semester	(ME 342)	Instrumentation & Measurement	2	1
	(MTH 317)	Statistics & Probability	3	0
	(ME 352)	Machine Design-II	3	0
	(ME 372)	Refrigeration & Air Conditioning	3	1
	(ME 382)	Mechanical Vibrations	3	1
	(ME 356)	Computer-Aided Machine Design (CAMD)	0	1
		Total	**14**	**04**

	Course Codes	Name of Subject	Credit Hours	
			Theory	Practical
7th Semester	(ME 402)	Entrepreneurship & Engineering Management	3	0
	(ME 491)	Control Engineering	2	1
	(ME 462)	Manufacturing Processes	3	1
	(ME 442)	Thermal Power Plants	3	1
	(ME 499a)	Project/Thesis –I	-	3
		Total	**11**	**06**

	Course Codes	Name of Subject	Credit Hours	
			Theory	Practical
8th Semester	(ME 452)	Renewable and Emerging Energy Technologies (REET)	3	1
	(ME 472)	Maintenance Engineering	2	0
	(ME 482)	Project Management & Optimization	3	0
	(ME 412)	Automobile Engineering	3	1
	(ME 499b)	Project/Thesis-II	-	3
		Total	**11**	**5**

8.5.6 Program Learning Outcomes (PLOs)

The Mechanical Engineering Department (MED) has adopted the Program Learning Outcomes defined by Pakistan Engineering Council (PEC) and are supported by our defined PEOs. These PLOs relate to the aptitude, awareness, and performance that students acquire with the progression of the program.

Program Learning Outcomes are the narrower statements that describe what students are expected to know and able to do by the time of graduation. These relate to the knowledge, skills, and attitude that the students acquire while progressing through the program.

The program must demonstrate that by the time of graduation, the students have attained a certain set of knowledge, skills, and behavioral traits, at least to some acceptable minimum level. This minimum threshold value (i.e., KPI for PLO attainment) should not be less than 60% even to begin with; however, as the program progresses through its evolution, it is expected that this minimum threshold value would subsequently be raised to higher values as a result of program's CQI. Specifically, it is to be demonstrated that all students of a batch to be accredited have acquired the following graduate attributes (GAs):

GA1 Engineering Knowledge:
An ability to apply knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

GA2 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.

GA3 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.

GA4 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 the information to derive valid conclusions.

GA5 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.

GA6 The Engineer and Society:
An ability to apply reasoning informed by the 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.

GA7 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.

GA8 Ethics:
Apply ethical principles and commit to professional ethics & responsibilities and norms of engineering practice.

GA9 Individual and Team Work:
An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.

GA10 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.

GA11 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.

GA12 Lifelong Learning:
An ability to recognize the need for, and have the preparation and ability to engage in, independent and life-long learning in the broadest context of technological change.

8.5.7 Career Opportunities

Mechanical Engineering graduates have a wide range of job prospects due to the discipline's breadth. Their education equips students with the creative thinking needed to develop an innovative product or system, as well as the analytical tools needed to meet their design objectives, the capacity to overcome any restrictions, and the teamwork required to design, sell, and produce a system. Employers in practically every sector of the engineering business are looking for mechanical engineering graduates. Here are a few examples: With a bachelor's degree in mechanical engineering, you may be able to work in the following fields:

- Aerospace industry – Aerospace equipment research, design, manufacture, and maintenance.
- Automotive industry – Designs, Manufactures, and Maintenance of Automobiles.
- Defense industry – Design Fabrication and Maintenance of Defense Equipment.
- Electronics industry – Design and manufacture of components for a variety of industries, including automotive, medicine, and the military.
- Fast-moving consumer goods industry – Manufacturing of products such as household cleaning items, personal hygiene goods, and convenience foods.
- Marine industry – Design, Fabrication, and Maintenance of Marine Systems.
- Materials and metals industry – Material Specimen Testing, Selection of Material, and Evaluation.
- Power Generation Industry- Operation, repair, and maintenance of pressure vessel equipment.
- Rail industry – From trains and rails to electrical power systems and train control systems, the rail industry designs, manufactures, and maintains rail system components.

8.6 Department of Petroleum and Natural Gas Engineering

8.6.1 The Department

In recent years, Petroleum and Natural Gas Engineering has gained considerable importance due to the vital role of oil & gas sector in the economy of the country. Considering the fact that province of Sindh is very rich in oil and gas reserves and also plays an important role in country's energy development, consumption and economic growth, the **Department of Petroleum & Natural Gas Engineering** was established at the campus in the year 2010.

The department supported and equipped with highly qualified faculty and technical staff. Every faculty member is actively involved in research activities within their areas of interest either individually or in groups. The department is also supported by a strong system of committees. It has established various committees to facilitate students as well as to govern, manage and improve different functional aspects within the department. The basic motivation, behind the transformation of various Engineering Programs according to the Outcome Based Education (OBE) system, was the decision taken by PEC to make Pakistan a member of the Washington Accord (WA). In this regard, the department also commenced its journey towards OBE from 2017 and recently, K-17 batch has been re-accredited under the Level-I. Up to now, nine undergraduate batches have successfully been graduated.

The key feature of the Department is to provide basis for better learning of theoretical concepts and up-to-date practical knowledge, for that the Department organizes oil/gas field visits along with internships (during summer vacation to the third and final year students) as per scheduling with industrial linkages and coordination of national and international oil and gas / Exploration & Production companies that operating in Pakistan.

The Department promotes technical and professional development/learning activities for which a platform is provided to the students that interconnects professionals and undergraduate students of the department. The fifth (in Pakistan) student chapter of Society of Petroleum Engineers (SPE)-Mehran University College of Engineering & Technology was established on March 25th 2012 at the department; with hardworking it has achieved the title of Golden student chapter in its following year soon after its establishment (i.e., 2014). The chapter has also achieved Student Chapter Excellence Award in 2019. Moreover, SPE chapter promotes and uphold the educational activities and creates healthy environment for young petroleum engineers to harness their strength and collaboration with the industry.

A good number of simulators are available at the Department that help the students in learning and understanding the conceptual models and behavior of simple to complex structure and phase behavior reservoirs, production and processing systems, and drilling engineering. This facility also provides strong basis for research development activities. In the recent years, the Campus management has arranged the software of Integrated Production Modeling (IPM) sponsored by Petroleum Experts Limited. The Department has arranged One Petro Subscription that is granted by One Petro grant program sponsored by the Society of Petroleum Engineers. Due to this facility all the faculty members, students and research/thesis groups can freely access One Petro sponsored e-publications; One Petro is worldwide one of the industry's largest online technical content libraries that allows to search and download more than 90,000 technical documents and publications from multiple professional societies/linkages. The seminar library (air-conditioned) also exists at the Department that contains more than 220 petroleum text books, thesis and monographs available for students to study with easy access.

Vision of the Department

The visionary approach of department is concentrated in petroleum and natural gas engineering education at international standard, technical achievements through research and producing competent engineers to serve petroleum industry at home and abroad.

Mission of the Program

The mission of Petroleum and Natural Gas Engineering Department is to provide student focused excellent teaching and educational environment that nurtures the intellectual and professional growth of students, who will become leading human resource in upstream / downstream petroleum industry.

Program Educational Objectives (PEOs)

The Program Educational Objectives (PEOs) were prepared by the OBE committee for Outcome Based Education implementation and approved through the DBoS, BoF and academic council. The PEOs of B.E. Petroleum & Natural Gas Engineering degree program are:

PEO-01: To produce dynamic petroleum graduates capable of practicing advanced knowledge to promote oil and gas industry.

PEO-02: To provide the leadership and communication skills to promote teamwork for strengthening the petroleum industry.

PEO-03: To provide quality research for innovative strategies to enhance environmentally sustainable oil and gas production to meet the global fuel demand.

8.6.2 The Faculty

Chairman of the Department:
Dr. Asadullah Memon
Phone: 0243-715364-65 /**Ext.:**7601

Associate Professor:
Dr. Asadullah Memon
PhD, China

Assistant Professors:
Dr. Bilal Shams Memon
PhD, China.

Engr. Imran Ali Memon
M.E., Pakistan.

Engr. Faisal Hussain Memon
M.E., Pakistan.

Engr. Ghulam Abbas Qambrani
M.E., Malaysia.
(On Study Leave)

Lecturers:
Engr. Adnan Aftab Nizamani
M.Phil., Malaysia.

Engr. Abdul Samad Shaikh
M.E., Pakistan.

Engr. Sundar Sham Jeswani
M.E., Pakistan.

Engr. Shoaib Ahmed Memon
M.E., Pakistan.

Engr. Zaheer Hussain Zardari
M.E., Pakistan.

Eng. Waseem Mumtaz Kalwar
M.E., Pakistan.

Engr. Temoor Muther
M.E., Pakistan.
(On Study Leave)

Lab Engineers:
Engr. Abdul Wajid Shaikh
M.E., Pakistan.

Engr. Umaid Ali Uqaili
M.E., Pakistan.

Engr. Sohail Ahmed Shaikh
M.E., Pakistan.

Engr. Faheem Mumtaz Kalwar
B.E, Pakistan.

8.6.3 Laboratory Facilities

Well-equipped laboratories have been established to conduct experimental work and measuring rock properties, reservoir fluid properties, drilling fluid properties and interfacial properties. The computer labs feature software for reservoir simulation (Exodus V90 & Sendra), Drilling Engineering (Drilling & work over simulator) and Production Engineering (IPM suits).

The following Laboratories are available at the department:

1. Oil Testing Laboratory
2. Drilling and Production Laboratory
3. Reservoir Engineering Laboratory
4. Gas Engineering Laboratory
5. Core Analysis Laboratory
6. Petroleum Software Lab
7. General Computer Lab

8.6.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	PG-101	Fundamentals of Petroleum Engineering	3	0
	HU-101	Functional English	3	0
	PS-106	Pakistan Studies	2	0
	IS-111/ SS-104	Islamic Studies / Ethics	2	0
	MTH-108	Applied Calculus	3	0
	EL-112	Applied physics	3	1
		Total	**16**	**1**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	WS-105	Workshop Practice	0	2
	ME-110	Engineering Drawing & Graphics	2	1
	ENG-111	Communication Skills	2	0
	PG-111	Applied Chemistry	2	1
	MTH-112	Linear Algebra &Analytical Geometry	3	0
	PG-121	Applied Geology	2	1
	PG-131	Applied Thermodynamics	2	0
		Total	**13**	**5**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
3rd Semester	ENG-215	Technical Report Writing & Presentation Skills	2	0
	EL-215	Introduction to Electrical Engineering	2	1
	PG-221	Petroleum Geology & Geo-Physical Prospecting	3	0
	MTH-223	Differential Equation & Complex Variable	3	0
	CS-231	Computer Programming & Software Applications	2	1
	CE-261	Fluid Mechanics	2	1
		Total	**14**	**3**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
4th Semester	PG-201	Petro physics	3	1
	PG-211	Drilling Engineering-I	3	1
	PG-222	Organizational Behavior	3	0
	PG-231	Properties of Reservoir Fluids	3	1
	CE-281	Mechanics of Materials	3	0
		Total	**15**	**3**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
5th Semester	PG-321	Reservoir Geo Mechanics	2	0
	PG-341	Drilling Engineering-II	3	1
	PG-361	Reservoir Engineering	3	1
	PG-371	Petroleum Refinery Engineering	3	1
	PG-381	Environment & Safety Management	3	0
		Total	**14**	**3**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
6th Semester	PG-301	Instrumentation & Process Control	2	1
	PG-311	Natural Gas Engineering	2	1
	MTH-321	Applied Numerical Methods	2	1
	PG-331	Gas Reservoir Engineering	3	1
	PG-351	Well Logging	2	1
		Total	**11**	**5**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
7th Semester	PG-401	Well Testing	3	1
	PG-411	Petroleum Production Engineering-I	3	1
	PG-421	Reservoir Simulation	3	1
	PG-441	Project Planning & Management	2	0
	PG-491	Final Year Project	0	3
		Total	**11**	**6**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
8thSemester	PG-451	Principles of Enhanced Oil Recovery	3	1
	PG-461	Petroleum Production Engineering-II	3	1
	PG-471	Unconventional Reservoirs	3	0
	PG-481	Petroleum Economics	2	0
	PG-491	Final Year Project	0	3
		Total	**11**	**5**

8.6.5 Career opportunities

A petroleum engineer is involved in nearly all of the stages of oil and gas field evaluation, development and production. The aim of their work is to maximize hydrocarbon recovery at minimum cost while maintaining a strong emphasis on reducing environmental impact. The various opportunities are available in oil and gas sector during the exploration, drilling and production phases. After graduation, our graduates will be able to work with national and multinational E&P and service companies such as OGDCL, PPL, UEP, Schlumberger and Weatherford.

8.7 Department of Software Engineering

8.7.1 The Department

Software Engineering is the field of technology, which is related to the application of theoretical approaches to the development, operation, and maintenance of software. It is not only about the simple stereotypical knowledge of only writing code for programs. However, it is also the study of how these approaches work in the real world based on different factors and engineering them accordingly to reach the desired goals. Software Engineering is about creating software that is of higher quality, more affordable, maintainable, and quicker to build.

Software Engineering is normally subdivided into the following sub-disciplines:

1. Software Requirement
2. Software Design
3. Software Development

Software Engineering is an important aspect of technology and it brings significant changes as well as is a major factor in future developmental periods of the world. The department offers an undergraduate degree program i.e., B.E (Software Engineering), which provides in-depth knowledge of the subject, wherein students can develop all the skills regarding the design and implications of modern Software Engineering through integrated courses. The courses are revised from time-to-time keeping because of the software needs of the emerging market at the national & international levels.

The department initially offers an undergraduate program. The courses of the program have been drawn from the curriculum guidelines of HEC/ PEC and duly approved by the Academic Council of the University.

Program Education Objectives (PEOs):

The Program Educational Objectives (PEOs) of B.E. Software Engineering degree program are given below:

PEO 1: Performs his/her professional role in the Software industry and related fields.
PEO 2: Adheres to professional responsibilities in multicultural environment with continual improvement.
PEO 3: Works effectively as a team lead or team member in challenging ventures.
PEO 4: Communicates technical and managerial information efficiently in oral and written forms.

8.7.2 The Faculty

In-charge Chairman of the Department:
Dr. Nouman Qadeer Soomro
Phone: 0243-715365 /**Ext.:** 7801

Associate Professors:
Dr. Nouman Qadeer Soomro
PD, (BIT, China).

Assistant Professors:
Engr. Irfanullah Memon
M.E., (MUET, Jamshoro)
(On Study Leave)

Lecturers:
Engr. Munazza Zaib
M.E., (MUET, Jamshoro) - On Study Leave

Engr. Rabia Jamro
M.E., (MUET, Jamshoro).

Engr. Qamar-U-Nisa Kamal
M.E., (MUET, Jamshoro).

Engr. Fatima Jaffar
M.S., (PIEAS, Islamabad).

Engr. Nazia Pathan
M.E., (MUET, Jamshoro).

Engr. Muzamil Hussain
M.E., (MUET, Jamshoro).

Engr. Hafeez Babar
M.E., (MUET, Jamshoro).

8.7.3 Laboratory Facilities

To meet the latest trends in software and hardware technology, the department has the following state-of-the-art laboratories. Where students are trained to meet the future needs of the technology.

1. Visual Informatics and Image Processing Laboratory
2. Software Quality Assurance and Testing Laboratory
3. Software Research and Development Laboratory
4. Data Warehousing and Management Laboratory
5. Parallel Programming and Cluster Computing Laboratory
6. Grid Research and Storage Management Laboratory
7. 3DModeling and Visualization Laboratory

8.7.4 The Courses

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
1st Semester	MTH108	Applied Calculus	3	0
	SW112	Programming Fundamentals	3	1
	SW113	Introduction to Information& Comm. Technologies	2	1
	ENG111	Functional English	3	0
	EL119	Applied Physics	3	0
		Total	**14**	**03**

	Course Code	Subject Name	Credit Hours	
			Theory	Practical
2nd Semester	SW121	Object-Oriented Programming	3	1
	SW123	Professional Practices	3	0
	MTH112	Linear Algebra & Analytical Geometry	3	0
	SW124	Introduction to Software Engineering	3	0
	PS106	Pakistan Studies	2	0
	IS111/SS104	Islamic Studies / Ethics Studies	2	0
		Total	**16**	**02**

3rd Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	SW212	Data Structures & Algorithms	3	1
	SW215	Database Systems	3	1
	SW216	Software Requirements engineering	3	0
	SW211	Software Economics &Management	3	0
	SW217	Operations Research	3	0
		Total	**15**	**01**

4th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	SW225	Operating Systems	3	1
	SW226	Computer Networks	3	1
	SW227	Software Design &Architecture	2	1
	SW228	Data Warehousing	3	0
	ENT121	Introduction to Entrepreneurship	3	0
		Total	**14**	**03**

5th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	SW315	Software Construction & Development	2	1
	MTH317	Statistics & Probability	3	0
	SW316	Information Security	3	0
	SW317	Human Computer Interaction	3	0
	SW318	Agent Based Intelligent Systems	3	0
	ENG311	Communication and Presentation Skills	3	0
		Total	**15**	**03**

6th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	SW322	Software Project Management	3	0
	SW325	Discrete Structures	3	0
	ENG319	Technical &Business Writing	3	0
	SW326	Data Science and Analytics	3	1
	SW327	Mobile Application Development	3	1
		Total	**14**	**03**

7th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	SW415	Software Re-Engineering	3	0
	SW416	Multimedia Communication	3	1
	SW417	Web Engineering	3	1
	SW418	Formal Methods in Software Engineering	3	0
	SW499	Thesis/Project	0	3
		Total	**12**	**05**

8th Semester	Course Code	Subject Name	Credit Hours	
			Theory	Practical
	SW424	Simulation & Modelling	3	0
	SW425	Cloud Computing	3	1
	SW426	Software Quality Engineering	3	1
	SW499	Thesis/Project	0	3
		Total	**09**	**09**

8.7.5 Career Opportunities

A Software Engineer can find lucrative jobs in well-reputed private and public sector organizations such as PTCL, K-Electric, Fertilizer Industry, Petrochemical sector, CAA, WAPDA, Pharmaceutical, Research Organizations, Mobile Operators, Software Houses, CAA, PSO, PPL, Telecom Sectors and various other national and multinational organizations. The employers of Software Engineers cover startup companies to established industry leaders.

Due to the emerging use of the internet, e-mail, communications systems, firms from electronics to engineering as they are traditionally associated with unrelated disciplines, which in turn, allows the software engineers to hire more and more in engineering firms specializing in building bridges and power plants. For example, softwareengineers are designated in designing and developing advanced geographic data systems and automated drafting systems. Communication industries also require software engineers, which indeed help the personal communications market as well. The major communications companies have many job opportunities for both software engineers and computer systems engineers. A growing number of Software Engineers are also employed on a temporary or contract basis (with many being self-employed) who work on their own as consultants. Some of these consultants work for firms that specialize in the development and maintenance of Web sites and intranets of client companies.

A Software Engineering Degree will also open doors for careers in Research, Software Development, and Business analysis with companies such as Microsoft, Oracle, Systems Limited, Hewlett Packard Enterprise, and IBM.

By getting a degree in Software Engineering, graduates can work in any number of fields creating Video Games, developing Internet Applications, running Computer Networks, or implementing Computer Security measures for an organization.

Career opportunities are not limited to technology. The problem-solving, innovative, and personal skills you learn in this course will be sought after in many organizations.

9. RULES AND PROCEDURES FOR ADMISSION

A(I). For Engineering, B.Arch. and B.CRP Programs under Regular Scheme

9.1 Admission

(i) Admissions to the First Year for all the degree courses are made according to the policies and rules, framed by the authorities of the University from time to time. The rules mentioned in this prospectus are subject to revision by the competent authority as and when deemed necessary and without any notice. The number of seats has been fixed as shown in **Table-9.6.1**. There are other categories of candidates who are also eligible for admission, which are described in detail in the subsequent clauses.

(ii) The candidates who have been allowed admission previously with any batch by this University shall not be considered for fresh admission. Their admission forms, if received by the University shall be rejected without any notice and their admission will be cancelled at any stage later on. However, if any of the admitted students desires to seek admission in any discipline under Self-Financing Scheme or University Support Program, he/she may apply for the same for which he/she will be required to submit an undertaking on the stamp paper to the effect that he/she will not claim admission under Regular Scheme. Similarly, if any of the students admitted under SFS or USP, applies for admission under Regular Scheme, he/she may apply for the same for which he/she will be required to submit an undertaking on the stamp paper to the effect that if he/she is admitted in the desired discipline he/she will not claim the refund of the money whatsoever, he/she has paid with the previous batch.

(iii) The candidates who apply for admission on the basis of fake certificates/documents (detected before or after their admission) shall be prosecuted under criminal law and their admission shall be cancelled. Additionally, they may also be debarred for a period of three years for future admission and all payments made to the University shall be forfeited in favor of the University.

9.2 Eligibility for Admission

(i) The candidates who have passed their Higher Secondary School Certificate (HSC Part-II) in Annual Examination of 2022under Pre-Engineering Group or equivalent with Physics, Chemistry and Mathematics or have passed their HSC Part-II in Annual Examination earlier up to 2019 under Pre-Engineering Group or equivalent with Physics, Chemistry and Mathematics and have secured at least 60% marks **(Grace marks shall not be considered)** from any recognized Board of Intermediate and Secondary Education in Pakistan or from foreign countries, are eligible to apply for admission.

In addition, the candidates who have passed their HSC Part-II in Annual Examination of 2022 under General Science Group or equivalent or have passed their HSC Part-II in Annual Examination earlier up to 2019 under General Science Groups or equivalent and have secured at least 60% marks **(Grace marks shall not be considered)** are also eligible to apply for admission only in Computer Systems Engineering, Software Engineering, Electronic Engineering and Telecommunication Engineering and they will not claim their admission in any other discipline.

The candidates who have passed their HSC Part-II in Annual Examination of 2022 under Pre-Medical Group or have passed their HSC Part-II in Annual Examination earlier up to 2019 under Pre-Medical Group or equivalent and have secured at least 60% marks **(Grace marks shall not be considered)** are eligible to apply for admission only in Bio-Medical Engineering and they will not claim their admission in any other discipline.

(ii) The candidates who have passed their HSC Part-II in Annual Examination before 2019 under any of the above-mentioned groups or equivalent shall not be eligible to apply for admission. Besides that, all the students of BS Programs of the University are eligible to apply for admission in any of the Engineering, B.Arch. and CRP Programs, if they meet the eligibility criteria under **Clause 9.2**.

(iii) The candidates who have passed their Diploma of Associate Engineer (DAE)* from any recognized Board of Technical Education in Pakistan in any approved discipline (i.e., Civil, Electrical, Mechanical, Electronics, Chemical, Glass & Ceramics, Petroleum and Architecture Technology) and have passed their DAE examination earlier up to 2019 **(their result must be declared at least 10 days before pre-admission test)** and have secured at least 60% marks **(Grace marks shall not be considered)** are also eligible to apply for admission in the relevant discipline. The candidates who have passed their DAE before Annual Examination of 2019 shall not be eligible for admission.

* **Diploma of Associate Engineer (DAE)** is a three **years'** post-secondary program of instruction in various **engineering** disciplines. It includes regular **studies** with classroom lectures, workshop assignments, laboratory experiments, industrial projects and industrial tours.

(iv) Those students, who were admitted to any other institutes/universities before applying for admission in Mehran UET and were rusticated, debarred or their admissions were cancelled, shall not be considered for admission in the University. Additionally, if the students withhold information regarding such a disciplinary action and they were granted admission; their admission will be cancelled immediately after ascertaining such facts. Those candidates who have been convicted involving of moral turpitude shall also be refused admission in the University.

9.3 Admission Form

Call for admissions is advertised in the prominent newspapers of national and regional repute as well as on the University website **muet.edu.pk**. The candidates who intend to apply for admission must follow the guidelines mentioned on the Directorate of Admissions website **admissions.muet.edu.pk**. A valid email address is mandatory to complete the registration process. The candidates are required to deposit the admission processing fee in any branch of Habib Bank Ltd. The candidate has to upload the scanned copies of all the required documents and paid copy of bank challan as indicated. The Mehran University authorities after receipt of application and admission processing fee will email admit slips to candidates for pre-admission test. The candidate has to print the admit slip and bring the same on the day of pre-admission test along with original CNIC/B-Form. The appearance / passing in the pre-admission test does not mean the candidate is eligible for admission. The eligibility of candidate for admission is decided by the admission office of the University after scrutinizing the documents provided by the candidates. The eligibility criteria for admission are given here above in **Clause 9.2**. Since the admission form is a legal document, any wrong information provided therein or tampering it in any other way is illegal and may result in rejection of the form out rightly

9.4 Pre-Admission Test

In accordance with the policies adopted by the Federal as well as Provincial Governments, all the eligible candidates applying under all categories except nominees are required to appear in the Pre-Admission Test organized by the University. Candidates having secured less than 40% screen the Pre-Admission Test shall not be eligible for the admission in this University.

The final merit list of the candidates for each district/category is prepared by calculating their overall merit, based on the marks obtained in each of the following examinations, multiplying them with the respective weightage and adding the result to calculate the "Composite Percentage Number" (CPN) as described below:

Sr. No.	Percentage of Marks in	Multiplying Weightage
A.	Secondary School Certificate (Science Group) - Matriculation:	**0.10**
B.	Higher Secondary School Certificate - Intermediate: (Pre-Engineering Group / Pre-Medical Group/ General Science Group or equivalent with adjusted marks*).	**0.30**
C.	Pre-admission Test Score:	**0.60**

For example, if a candidate has secured 70% marks in SSC, 60% marks in HSC and 50% marks in Pre-Admission Test; his/her CPN** would be calculated as under:

(70x0.1) + **(60x0.3)** + **(50x0.6)** = **7+18+30** = **55.0000**

* Adjusted marks mean marks secured in HSC examination plus additional marks if any, as defined in **Clause 9.11**, or minus marks to be deducted as defined in **Clause 9.12**.

** The CPN of the candidates on the merit list may be calculated with four digits after decimal point. The following steps may be taken, in case of tie of CPN even after exercising the above action:

i. The candidate having higher pre-admission test marks will be higher in merit.
ii. The candidate having higher HSC marks will be higher in merit.
iii. The candidate having higher SSC marks will be higher in merit.
iv. The candidate having higher HSC Math-II marks will be higher in merit.
v. The candidate having higher HSC Math-I marks will be higher in merit.

Note: All local / foreign nominees are required to submit the result of HEC, SAT, UETs, NEST, officially approved National / International Organization or other International-Level Test which they have passed for their admission purpose or appear in the Pre-Admission Test of this University and clear the same. In case they do not clear the test, they would not be considered for admission at this University.

9.5 Interviews

After the receipt of the result of Pre-Admission Test, a comprehensive merit list is prepared for each district/category and a number of candidates roughly equivalent to the reserved seats of concerned category is called for interview before the Admission Committee.

The candidates must be accompanied with his/her guardian declared in his/her admission form during interview. The interviews are held at Mehran UET, Jamshoro on the dates as announced in the newspapers and also on MUET website: **muet.edu.pk**.

The candidates will also be required to bring their original documents as mentioned below for verification:

(i) Marks Certificate of SSC – (Matriculation).
(ii) Marks Certificate of HSC Part-II (Pre-Engg. / General Science / Pre-Medical Group - in case of change of group from Pre-Medical to Pre-Engg., marks certificate of Pre-Medical Group)/DAE.
(iii) Domicile Certificate of candidate.
(iv) PRC on 'C' Form of candidate.
(v) National Identity Card / B-form (as applicable).
(vi) Medical Certificate on prescribed proforma*.
(vii) Undertaking Certificate on prescribed proforma*.

* Proformas can be downloaded from **admissions.muet.edu.pk**.

It is mandatory for the candidates to appear before the Admission Committee for interview. If any candidate fails to produce all or any of the above-mentioned documents, he / she shall not be allowed to appear in the interview and will be disqualified from the process of admission.

The admission in any of the disciplines shall be allowed on the day of interview; and if admitted, all the above original documents would be retained by the University for at least **one entire year**. The candidates are advised to keep a photocopy of all the documents with them. The candidates have to deposit the fees as mentioned in **Clause 9.21** at the time of interview.

The candidates may give their choice to study at UET, Lahore, UET, Taxila or UET, Peshawar under reciprocal seats at the time of interview. The candidates with high CPN will be awarded the seat on merit. There following seats:

(a.) UET, Lahore (1 = Civil Engineering and 2= Chemical Engineering)
(b.) UET, Taxila (1 = Civil Engineering)
(c.) UET, Peshawar (1 = Civil Engineering, 1 = Mechanical Engineering and 1 = Architecture)

9.6 Distribution of Seats

The distribution of seats for admissions is strictly made according to the rules framed for the purpose by the authorities of the University on population basis among the rural and urban areas for Hyderabad, Mirpurkhas, Larkana and Sukkur Divisions. Twenty (20) seats have also been reserved for the candidates of Karachi Division. The admission in various districts/ categories at Mehran UET, Jamshoro and Mehran UET, SZAB Campus, Khairpur Mirs' is given on quota basis for the urban and rural areas. However, the award of discipline shall be given on the interview day as per availability of seats of the district / category. Any saving from the urban areas seats of any district is given to the rural areas of the same districts and vice-versa. The number of seats allocated to each district, discipline and category at MUET, Jamshoro is given in **Table-9.6.1**, while the distribution of seats among urban and rural areas of Sindh Province is given in **Table-9.6.2** and the description of the seat under **Category-B** is given in **Table-9.6.3**.

The number of seats allocated to each district, discipline and category at MUET, SZAB Campus, Khairpur is given in **Table-9.6.4**, while the distribution of seats among urban and rural areas of Sindh Province is given in **Table-9.6.5**.

The distribution and description of discipline-wise extra seats reserved for nominees are given in **Table-9.6.6** and **Table-9.6.7**.

Table-9.6.1: Distribution of Seats Discipline-wise for various Districts, Disciplines and Categories at Mehran UET, Jamshoro.

Cat.	Description	CE	EL	ME	ES	CS	TL	SW	CH	IN	MN	MT	PG	AR	CRP	TE	EE	BM	MTE	Total
A-1	**Sukkur**	1	1	1	2	2	2	2	2	1	2	2	2	1	1	2	1	1	2	**28**
	Ghotki	1	1	1	2	2	3	2	2	1	1	1	2	2	2	2	1	1	2	**29**
	Khairpur	2	2	2	3	3	4	4	3	2	2	2	3	3	3	3	1	1	1	**44**
	S. Benazirabad	1	1	1	3	2	3	3	2	1	1	1	2	3	2	2	1	1	1	**31**
	N. Feroze	1	2	1	3	2	3	3	2	1	2	2	2	1	1	3	1	1	1	**32**
A-2	**Larkana**	1	1	1	2	2	2	3	2	1	2	2	2	2	1	2	1	1	1	**29**
	K.Shahdadkot	1	1	1	2	2	2	2	2	1	1	2	2	1	1	2	1	1	1	**26**
	Shikarpur	1	1	1	2	2	3	2	1	1	1	2	1	1	1	2	1	1	1	**25**
	Jacobabad	1	1	1	2	2	2	2	2	2	1	1	2	1	1	2	1	1	1	**26**
	Kashmore	-	1	1	1	1	1	2	1	1	1	1	1	1	1	1	-	1	1	**17**
A-3	**Hyderabad**	7	7	8	6	8	7	7	2	4	3	2	3	4	4	5	3	2*	4	**86**
	Matiari	2	3	2	2	2	2	2	1	2	2	1	1	1	1	2	1	2*	1	**30**
	T. M. Khan	3	3	3	2	2	2	3	1	1	1	1	2	1	1	2	1	2*	1	**32**
	T. Allahyar	2	2	3	1	2	3	2	1	1	1	2	1	1	1	1	1	2*	1	**28**
	Dadu	5	6	7	4	5	5	6	3	3	2	2	2	2	3	4	2	2*	3	**66**
	Jamshoro	3	3	3	3	3	3	2	1	1	1	1	2	1	1	2	1	2*	2	**35**
	Thatta	3	3	4	2	3	2	3	2	1	1	1	1	2	1	2	1	1	1	**34**
	Sujawal	3	3	2	2	2	3	2	1	1	1	1	2	1	1	2	1	1	1	**30**
	Badin	6	6	7	4	5	5	5	3	3	2	2	3	3	3	4	2	2*	3	**68**
A-4	**Mirpurkhas**	5	6	6	3	4	4	4	2	2	2	2	2	1	2	3	2	2*	3	**55**
	Umarkot	3	3	3	3	3	3	3	2	2	2	2	2	1	1	2	1	2*	2	**40**
	Tharparkar	5	5	5	4	4	4	4	2	2	3	3	2	1	2	3	2	2*	2	**55**
	Sanghar	7	8	8	6	6	7	7	3	3	3	2	4	4	4	5	3	2*	4	**86**
A-5	**Karachi**	-	-	-	2	2	2	2	2	0	2	2	-	1	2	2	-	1	-	**20**
B**	MUE, Jamshoro	12	8	6	4	4	2	4	-	-	-	-	2	-	-	-	-	2	-	**44**
	Total	**76**	**78**	**78**	**70**	**75**	**79**	**81**	**45**	**38**	**40**	**40**	**48**	**40**	**41**	**60**	**30**	**37**	**40**	**996**

CE	Civil Engineering	**TL**	Telecommunication	**MT**	Metallurgy & Materials
EL	Electrical Engineering	**SW**	Software Engineering	**PG**	Petroleum & Nat. Gas
ME	Mechanical Engineering	**CH**	Chemical Engineering	**AR**	Architecture
ES	Electronic Engineering	**IN**	Industrial Engg. & Mgt.	**CRP**	City & Regional Planning
CS	Computer Systems Engg.	**MN**	Mining Engineering.	**TE**	Textile Engineering.
CE	Civil Engineering	**TL**	Telecommunication	**MT**	Metallurgy & Materials
EE	Environmental Engineering	**BM**	Biomedical Engineering	**MTE**	Mechatronics Engineering
MU	Mehran UET, Jamshoro				

* In Biomedical Engineering Program one seat shall be reserved for the candidates with Pre-Engineering group candidates in the districts where two (2) merit seats in Biomedical Engineering.

****** The students of the University who had already availed MUE Quota (under **Category-B** of the Prospectus) shall not be eligible to apply again under the same quota in any program (BE or BS).

Table-9.6.2: Distribution of Seats for various Districts (Urban/Rural basis) in Sindh Province at Mehran UET, Jamshoro.

Category	Districts	Number of Seats		
		Urban Areas	Rural Areas	Total Seats
A-1	**Sukkur**	10	18	28
	Ghotki	3	26	29
	Khairpur	5	39	44
	Shaheed Benazirabad	5	26	31
	Naushahro Feroze	2	30	32
	Total	**25**	**139**	**164**
A-2	**Larkana**	9	20	29
	Kambar Shahdadkot	3	23	26
	Shikarpur	4	21	25
	Jacobabad	4	22	26
	Kashmore	2	15	17
	Total	**22**	**101**	**123**
A-3	**Hyderabad**	73	13	86
	Matiari	2	28	30
	Tando Muhammad Khan	4	28	32
	Tando Allahyar	5	23	28
	Dadu	10	56	66
	Jamshoro	3	32	35
	Thatta	2	32	34
	Sujawal	0	30	30
	Badin	6	62	68
	Total	**105**	**304**	**409**
A-4	**Mirpurkhas**	10	45	55
	Umerkot	0	40	40
	Tharparkar	0	55	55
	Sanghar	13	73	86
	Total	**23**	**213**	**236**
A-5	All Districts of **Karachi**	20	*	**20**
	Grand Total	**195**	**757**	**952**

* All districts of Karachi are considered as urban areas.

Table-9.6.3: Description of Category-B Candidates Seeking Admission.

Category	Description	Seats
(B)	Real sons/daughters/brothers/sisters of Mehran University employees (serving or retired, deceased, on lien or working on deputation with other Institutions) shall be considered for admission to first year class against the reserved seats on the following criteria: i. First preference is given to real sons/daughters of employees who are confirmed in the University service and have at least three years continuous university service at their credit. ii. Second preference is given to real sons/daughters of employees who are not confirmed in the University service but have at least three years continuous university service at their credit. iii. Third preference is given to real brothers/sisters of employees who are confirmed in the University service and have at least three years continuous university service at their credit. iv. Fourth preference is given to real brothers/sisters of employees who are not confirmed in the University service and have at least three years continuous university service at their credit. v. Fifth preference is given to real sons/daughters of employees who are confirmed in the University service and have less than three years continuous university service at their credit. vi. Sixth preference is given to real sons/daughters of employees who are not confirmed in the University service and have less than three years continuous university service at their credit. vii. Seventh preference is given to real brothers / sisters of employees who are confirmed in the University service and have less than three years continuous university service at their credit. viii. Eighth preference is given to real brothers / sisters of employees who are not confirmed in the University service and have less than three years continuous university service at their credit. **Note:** ▪ The merit with regard to the **Category-B** is determined as per policy of the University. A copy of the appointment order, confirmation order and Affidavit regarding relationship of the candidate with the employee be attached with the admission form. ▪ The students of the University who had already availed MUE Quota (under **Category-B** of the Prospectus) shall not be eligible to apply again under the same quota in any program (BE or BS).	**44**
	Total Seats of Category-B	**44**

Table-9.6.4: Distribution of Seats for various Districts and Disciplines at Mehran UET, SZAB Campus, Khairpur Mirs'.

Category	Description	Number of Seats and Disciplines						
		CE	EL	ME	PG	SW	ES	Total
A-1	**Sukkur**	6	7	4	4	3	4	**28**
	Ghotki	7	7	4	4	4	3	**29**
	Khairpur	10	10	7	6	5	6	**44**
	Shaheed Benazirabad	7	7	3	3	3	2	**25**
	Naushahro Feroze	7	7	3	3	3	2	**25**
A-2	**Larkana**	4	4	3	2	2	2	**17**
	Kambar Shahdadkot	3	4	3	2	2	2	**16**
	Shikarpur	3	4	2	2	2	2	**15**
	Jacobabad	3	4	3	2	2	2	**16**
	Kashmore	3	3	1	1	1	2	**11**
A-3	**Hyderabad**	3	3	2	1	2	1	**12**
	Matiari	0	0	1	1	1	0	**3**
	T. M. Khan	0	1	0	1	1	0	**3**
	T. Allahyar	1	1	0	0	0	1	**3**
	Dadu	1	1	1	2	1	2	**8**
	Jamshoro	1	1	0	1	1	1	**5**
	Thatta	0	1	1	1	0	1	**4**
	Sujawal	1	0	0	1	0	1	**3**
	Badin	1	1	1	2	1	1	**7**
A-4	**Mirpurkhas**	1	1	1	1	1	1	**6**
	Umerkot	1	0	1	1	1	1	**5**
	Tharparkar	1	1	1	1	1	1	**6**
	Sanghar	3	3	2	1	2	1	**12**
A-5	All districts of **Karachi**	1	1	0	1	1	0	**4**
B	MUE, Khairpur*	3	2	1	1	1	1	**9**
	Total:	**71**	**74**	**45**	**45**	**41**	**40**	**316**

CE Civil Engineering
EL Electrical Engineering
SW Software Engineering
MUE Employees of Mehran UET, SZAB Campus,
M Mechanical Engineering
PG Petroleum & Natural Gas Engineering
ES Electronics Engineering

* Please refer **Category-B** of **Table-9.6.3** for description regarding Employees of Mehran UET, SZAB Campus, Khairpur. However, the number of seats here is 09.

Table-9.6.5: Distribution of Seats for Urban and Rural areas of the Districts in Sindh Province, Mehran UET, SZAB Campus Khairpur Mirs' (Category-A) and (Category-B).

Category	Districts	Number of Seats		
		Urban Areas	Rural Areas	Total Seats
A-1	**Sukkur**	8	20	28
	Ghotki	3	26	29
	Khairpur	9	35	44
	Shaheed Benazirabad	5	20	25
	Naushahro Feroze	2	23	25
	Total	**27**	**124**	**151**
A-2	**Larkana**	6	11	17
	Kambar Shahdadkot	2	14	16
	Shikarpur	2	13	15
	Jacobabad	4	12	16
	Kashmore	3	8	11
	Total	**17**	**58**	**75**
A-3	**Hyderabad**	9	3	12
	Matiari	0	3	3
	Tando Muhammad Khan	0	3	3
	Tando Allahyar	0	3	3
	Dadu	2	6	8
	Jamshoro	0	5	5
	Thatta	0	4	4
	Sujawal	0	3	3
	Badin	0	7	7
	Total	**11**	**37**	**48**
A-4	**Mirpurkhas**	2	4	6
	Umerkot	0	5	5
	Tharparkar	0	6	6
	Sanghar	2	10	12
	Total	**4**	**25**	**29**
A-5	All districts of **Karachi**	4	*	**4**
	Grand Total	**63**	**244**	**307**

* All districts of Karachi are considered as urban areas.

Table-9.6.6: Discipline-wise Extra Seats Reserved for Nominees.

Cat.	Description	CE	EL	ME	ES	CS	TL	SW	CH	IN	MN	MT	PG	AR	CRP	TE	EE	BM	MTE	Total
C-1	Balochistan	-	-	-	2	2	-	-	2	-	-	2	-	2	-	-	-	-	-	**10**
C-2	Foreigners	3	2	3	4	2	4	5	2	1	1	-	4	-	-	3	2	2	2	**40**
C-3	Azad Kashmir	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**2**
C-4	Ex-FATA	-	1	-	-	-	1	-	-	-	1	-	-	-	-	1	-	-	-	**4**
C-5	Govt. of Khyber Pakhtunkhwa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
C-6	Govt. of Punjab	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**1**
C-7	Northern Areas	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**2**
C-8	GHQ, Rawalpindi	3	2	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
C-9	Federal Capital Area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	**0**
C-10	Indian Occupied Kashmir	2	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**5**
	Total	**10**	**6**	**6**	**6**	**5**	**5**	**7**	**4**	**2**	**2**	**2**	**4**	**3**	**0**	**4**	**2**	**2**	**2**	**72**

CE	Civil Engineering	**TL**	Telecommunication Engg.	**MT**	Metallurgy & Materials
EL	Electrical Engineering	**SW**	Software Engineering	**PG**	Petroleum & Nat. Gas
ME	Mechanical Engineering	**CH**	Chemical Engineering	**AR**	Architecture
ES	Electronic Engineering	**IN**	Industrial Engg. & Mgt.	**CR**	City & Regional
CS	Computer Systems Engg	**MN**	Mining Engineering.	**TE**	Textile Engineering.
CE	Civil Engineering	**TL**	Telecommunication Engg.	**MT**	Metallurgy & Materials
EE	Environmental Engg.	**BM**	Biomedical Engineering	**MT**	Mechatronics

Note: All the leftover seats of the above category will be filled on self-financing basis.

Table-9.6.7: Description of Discipline-wise Seats Reserved for Nominees from Govt. Departments/ Agencies

Category	Description	Seats
C-1	**i).** Candidates domiciled in Balochistan Province, nominated by the Education Department, Government of Balochistan. (02 in Electronics Engineering, 01 Chemical Engineering, 01 Metallurgy& Materials Engineering and 01 Architecture).	**5**
	ii). Candidates domiciled in Balochistan Province, nominated by the Higher Education Commission, Islamabad. (02 in Computer Systems Engineering, 01 Chemical Engineering, 01 Metallurgy& Materials Engineering and 01 Architecture).	**5**
C-2	Foreign students (under Pakistan Technical Assistance Program) nominated by the Ministry of Finance and Economic Affairs (Economic Affairs Division), Government of Pakistan, Islamabad.	**40**
C-3	Candidates belonging to Azad Kashmir, nominated by the Azad Govt. of the Azad State of Jammu & Kashsmir, Muzafarabad.	**2**
C-4	Candidates belonging to Federally Administered Tribal Area, nominated by the State and Frontier Region Division, Government of Pakistan, Islamabad.	**4**
C-5	Candidate domiciled in Khyber Pakhtunkhwa Province, nominated by the Education Department, Government of Khyber Pakhtunkhwa.	**0**
C-6	Candidate domiciled in Punjab Province, nominated by the Education Department, Government of Punjab.	**1**
C-7	Candidates belonging to Northern Areas, nominated by the Directorate of Education, Government of Gilgit Baltistan.	**2**
C-8	Candidates nominated by the General Head Quarters, Rawalpindi.	**8**
C-9	Candidate belonging to Federal Capital Area, nominated by Ministry of Education, Government of Pakistan, Islamabad.	**0**
C-10	Candidates belonging to Indian Occupied Kashmir, nominated by the Ministry of Economic Affairs & Statistics (Economic Affairs Division), Government of Pakistan, Islamabad.	**5**
	Total Seats	**72**

9.7 Designation of Urban Areas of Sindh Province

The Urban areas designated in each district are given below.

MUNICIPALITIES WITHIN DISTRICTS	
1 **Sukkur District** a) Sukkur Municipality b) Rohri Municipality	13 **Tando Muhammad Khan District** a) Tando M. Khan Municipality
2 **Ghotki District** a) Ghotki Municipality b) Mirpurmathelo Municipality	14 **Tando Allahyar District** a) Tando Allahyar Municipality
3 **Khairpur District** a) Khairpur Municipality b) Gambat Municipality c) Pirjogoth Municipality	15 **Dadu District** a) Dadu Municipality b) Mehar Municipality c) K.N. Shah Municipality
4 **Shaheed Benazirabad District** a) Nawabshah Municipality	16 **Jamshoro District** a) Kotri Municipality
5 **Naushahro Feroze District** a) Moro Municipality	17 **Thatta District** a) Thatta Municipality
6 **Larkana District** a) Larkana Municipality b) Ratodero Municipality c) Naudero Municipality	18. **Sujawal District** No Urban Areas
7 **Kambar Shahdadkot District** a) Shahdadkot Municipality b) Kambar Municipality	19 **Badin District** a) Badin Municipality b) Matli Municipality
8 **Shikarpur District** a) Shikarpur Municipality	20 **Mirpurkhas District** a) Mirpurkhas Municipality
9 **Jacobabad District** a) Jacobabad Municipality	21 **Umerkot District** No Urban Areas
10 **Kashmore District** a) Kandhkot Municipality	22 **Tharparkar District** No Urban Areas
11 **Hyderabad District** a) Hyderabad Municipality b) Tandojam Municipality	23 **Sanghar District** a) Sanghar Municipality b) Shahdadpur Municipality c) Tando Adam Municipality d) Sinjhoro Municipality
12 **Matiari District** a) Hala Municipality	24 **Karachi District** No Rural Areas

9.8. Award of Discipline

The award of discipline/technology is made on the day of interview. The candidates have to opt discipline/technology from their own respective districts/categories. However, if any candidate has applied in more than one category, he/she has to select/decide on any one of them on the day of interview. On the contrary, if he/she is not interested in any of them, he/she has to withdraw from admission in writing and his/her name shall be deleted from the list(s). The candidates shall have to pay the admission fees on the same day and obtain roll number accordingly.

The candidates who are selected but do not get the discipline of their choice they may give up to five (5) choices of their desired disciplines/technologies. They are considered on merit, in accordance with the order of their choices, for their desired discipline/technology if later on any of them becomes available.

The candidates who cancel their given choices after selection by exercising their retaining / freezing option of the system (freeze their selected discipline) but later on cancel their admission for any reason, they will not be entitled for refund of their paid fees.

9.9 Rectification of Mistakes

The Admission Merit Lists / Call Lists announced by the University are provisional and if any mistake is detected, it is rectified accordingly.

9.10 Admission of Candidates Who Fail to Deposit the Admission Fees on the Interview Day

If any of the candidates fails to deposit admission fees on the day of interview, his/her seat will be allotted to the following candidate on the merit list.

9.11 Additional Marks

The candidates, who have produced certificates of Hafiz-e-Quran on printed form from registered Madressahs and clear the test of Hifz taken by the University, are also considered to have additional 20 marks to be added to the marks of HSC.

9.12 Deduction of Marks Due to Gap in Education

In case of a gap or repetition of HSC / Diploma Examinations, the merit is determined as described below:

One percent of the aggregate marks is deducted for each gap of one academic year after Matriculation examination from the total marks of HSC/Diploma examination or equivalent for the purpose of determination of merit in each District/Category. This deduction is applicable whether the HSC/Diploma Examination had been repeated or the gap had occurred owing to any other reason.

9.13 Selection Procedure against various Categories

All the candidates who have applied for admission against the seats reserved under **Category-C** are considered first for admission against the seats reserved for their respective districts under **Category-A**. If a candidate who is selected against the district quota but does not get the discipline of his/her choice, his/her seat and discipline of that district may be transferred to the category applied for and he/she is given priority on merit basis in that category.

9.14 Closing of Admissions Process

The admissions process for the session is made up to the end of **FOURTH week** from the date of start of the classes. After this period, no new admission is made. However, any change of discipline on merit is made up to seven (7) days after the closing date of admissions. The seats fallen vacant are not filled-up.

9.15 Transfer on Reciprocal Basis

There is a provision for transfer of students admitted in Mehran UET with some other Institutions of Pakistan as described below:

Three candidates, two in Chemical Engineering and one in Civil Engineering having the domicile of **Categories-A.1** to **A.4** are nominated for admission in the *University of Engineering & Technology, Lahore,* on reciprocal basis.

One candidate in Civil Engineering having the domicile of **Categories-A.1** to **A.4** is nominated for admission in the *University of Engineering & Technology, Taxila* on reciprocal basis.

Three candidates, one in Civil Engineering, one in Mechanical Engineering and one in Architecture having the domicile of **Categories-A.1** to **A.4** are nominated for admission in the *University of Engineering & Technology, Peshawar, Khyber Pakhtunkhwa* on reciprocal basis. They are required to pay Rs. 38,000/- as educational expenses in addition to admission and other normal user charges at the time of admission in the University of Engineering & Technology, Peshawar, Khyber Pakhtunkhwa. Similarly, the nominees from the University of Engineering & Technology, Peshawar, Khyber Pakhtunkhwa on reciprocal basis are required to pay Rs. 38,000/- as educational expenses in addition to admission and other normal user changes at the time of admission in Mehran UET, Jamshoro.

The candidates desiring to be considered for this nomination are required to give their intent in writing at the time of interview. The final selection for this purpose is made by the Mehran University authorities as per merit. Similarly, the UET, Lahore is authorized to nominate three candidates, UET, Taxila is authorized to nominate one candidate and UET, Peshawar is authorized to nominate three candidates for admission in Mehran UET in the same disciplines as mentioned above.

9.16 NOC and Study Leave Order for Candidates already in Service

The candidates who are already in service at the time of submission of admission form should attach NO OBJECTION CERTIFICATE from their employers for their admission. After selection to the First Year Class, they are required to submit study leave order and relieving order from their employers for study purpose at the University because the Bachelor's Degree Program is a regular full time and day program and no student admitted in this University is allowed to engage himself / herself in any employment during his/her studies.

9.17 Admission in any Other Institute

Being a full-time program of studies, no student of this University is allowed to enroll in any other full time or part time courses of studies in any other educational institution without prior permission of the authorities of the University. Violation of the above may lead to the cancellation of his / her admission.

9.18 Identity Card

The students, after getting admission at the University, are issued university smart identity cards by ICPC. It is necessary for the students to keep their valid identity cards with them while attending the classes, traveling in the point buses or staying on the campus.

9.19 Re-Admission Policy

Those students who are eligible for any semester of any year but remained absent from their classes and examinations for any reason, are considered for re-admission in the appropriate semester where they left their studies with the appropriate batch subject to application of other relevant rules by the Re-Admission Committee, provided that their absence is not more than **two calendar years**. However, their attendance to determine their eligibility to appear in the semester examination is considered from the date of issuance of re-admission order. Such admissions may be made **within four weeks** from the date of start of classes of particular session with full admission fee excluding enrollment card fee, smart card fee and caution money.

9.20 Enrolment Card

Each student is required to enroll himself / herself in the University after the finalization of the discipline in the First Semester of First Year and obtain smart enrolment card accordingly. In case of failure, he/she is not allowed to appear in the examination of the First Semester of the First Year.

9.21 Fees

(1)	Fees payable at the time of admission:	Amount	
a.	Admission fee (Per Year)	Rs.	18,000
b.	Subject Society / PERN fee (Per Year)	Rs.	2,000
c.	Student Identity Card fee (Per Year)	Rs.	500
d.	Enrolment fee (Once)	Rs.	1,200
e.	HSC Marks Certificate Verification fee (Once)	Rs.	2,500
	Total Fee Payable:	**Rs.**	**24,200**
	University Caution Money Deposit – Refundable*	**Rs.**	**6,000**

* Refundable only after Completion of Degree Course, in case of cancellation of admission at any stage Caution Money will not be refunded.

(2)	Fees and Charges payable at the start of each semester	Amount	
a.	Tuition fee (Per Semester)	Rs.	16,000
b.	Games fee (Per Semester)	Rs.	1,000
c.	Development charges (Per Semester)	Rs.	1,000
d.	Examinations fee (including Marks Certificate) for Regular Examinations (Per Semester)	Rs.	2,000
e.	Transport charges (Per Semester)	Rs.	8,000
	Total Fee Payable:	**Rs.**	**28,000**

(3)	Fees payable at the time of hostel allotment:	Amount	
a.	Admission fee (Once)	Rs.	6,000
b.	Allotment Processing fee (Once)	Rs.	1,000
c.	Hostel Identity Card fee (Per Year)	Rs.	500
	Total Fee Payable:	**Rs.**	**7,500**
	Room Deposit – Refundable (Once)	**Rs.**	**4,000**

(4)	Fees to be charged at the start of each semester (For Boarders):	Amount	
a.	Room charges (Per Semester)	Rs.	9,000
b.	Medical charges (Per Semester)	Rs.	500
c.	Sports charges (Per Semester)	Rs.	500
d.	Utility charges (Per Semester)	Rs.	3,000
	Total Fee Payable:	**Rs.**	**13,000**

Note: The foreign students are charged USD 1,000.00/ equivalent per year (USD 500.00/ equivalent per semester) as room charges. The other fees are the same as given above.

A(II). For Engineering, B.Arch. and B.CRP Programs under Self Financing Scheme

9.22 Admission

The admission under Self-Financing Scheme is made on the basis of district quota as per **Table-9.22 (a)** and **(b)** at Mehran UET, Jamshoro and Mehran UET, SZAB Campus, Khairpur Mirs' respectively and further explained in **Clause 9.1** of Regular Scheme.

The saving seats are filled up on overall open merit basis of the Province of Sindh. Following rules have been framed for admissions under the Self-Financing Scheme. These rules are subject to revision by the competent authorities of the University at any time and without any prior notice.

9.22.1 Eligibility for Admission

The eligible candidates under Self Financing Scheme should have:

i. Secured at least 60% marks in the HSC Part-II (Pre-Engineering Group for all disciplines) or (General Science Group for only four disciplines viz. Computer Systems Engineering, Software Engineering, Electronics Engineering and Telecommunication Engineering) or (Pre-Medical Group for only one discipline, i.e., Bio-Medical Engineering) or equivalent as recognized by the University and further explained in **Clause 9.2** under Regular Scheme.

ii. Appeared in Pre-Admission Test and secured at least 40%score.

iii. Produced domicile of Sindh Province.

9.22.2 Pre-admission Test

As prescribed in **Clause 9.4** under Regular Scheme.

9.22.3 Interviews

As prescribed in **Clause 9.5** under Regular Scheme.

9.22.4 Available Seats

Under this scheme the disciplines have been distributed in three categories, i.e., **Category-I**, **Category-II, Category-III** and **Category-IV** as mentioned below:

The number of seats for each discipline is reserved on district basis and given in **Table-9.22(a)** and **Table-9.22(b)**.

<u>Category-I:</u> (Rs. 1,155,000-00)

1. Civil Engineering
2. Electrical Engineering
3. Software Engineering

<u>Category-II:</u> (Rs. 945,000-00)

1. Mechanical Engineering
2. Computer Systems Engineering
3. Civil Engineering (at Khairpur Mirs')

Category-III: (Rs. 735,000-00)

1. Electronics Engineering
2. Mechatronics Engineering
3. Electrical Engineering (at Khairpur Mirs')
4. Mechanical Engineering (at Khairpur Mirs')

Category-IV: (Rs. 630,000-00)

1. Architecture

Category-V: (Rs. 420,000-00)

1. Petroleum & Natural Gas Engineering
2. Environmental Engineering
3. Chemical Engineering
4. Industrial Engineering & Management
5. Textile Engineering
6. City & Regional Planning
7. Bio-Medical Engineering
8. Telecommunication Engineering

9.22.5 Admission fee under Self-Financing Scheme

Following fees are payable to the University by the candidates applying for admission under Self-Financing Scheme:

Category-I
Admission fee of Rs. 1,100,000/- (Rupees One Million One Hundred Thousand Only) + Applicable Tax *currently 5%** (**Total Rs. 1,155,000/-**) in the form of Demand Draft prepared by any branch of Bank, in favor of "Director Finance, Mehran UET, Jamshoro". The draft in original must be submitted in the office of Director Admissions, MUET, Jamshoro before closing date.

Category-II
Admission fee of Rs. 900,000/- (Rupees Nine Hundred Thousand Only) + Applicable Tax *currently 5%** (**Total Rs. 945,000/-**) in the form of Demand Draft prepared by any branch of Bank, in favor of "Director Finance, Mehran UET & Technology, Jamshoro". The draft in original must be submitted in the office of Director Admissions, MUET, Jamshoro before closing date.

Category-III
Admission fee of Rs. 700,000/- (Rupees Seven Hundred Thousand Only) + Applicable Tax *currently 5%** (**Total Rs. 735,000/-**) in the form of Demand Draft prepared by any branch of Bank, in favor of "Director Finance, Mehran UET, Jamshoro". The draft in original must be submitted in the office of Director Admissions, MUET, Jamshoro before closing date.

Category-IV
Admission fee of Rs. 600,000/- (Rupees Six Hundred Thousand Only) + Applicable Tax *currently 5%** (**Total Rs. 630,000/-**) in the form of Demand Draft prepared by any branch of Bank, in favor of "Director Finance, Mehran UET, Jamshoro". The draft in original must be submitted in the office of Director Admissions, MUET, Jamshoro before closing date.

Category-V
Admission fee of Rs. 400,000/- (Rupees Four Hundred Thousand Only) + Applicable Tax *currently 5%** (**Total Rs. 420,000/-**) in the form of Demand Draft prepared by any branch of

Bank, in favor of "Director Finance, Mehran UET, Jamshoro". The draft in original must be submitted in the office of Director Admissions, MUET, Jamshoro before closing date.

All other fees as payable under regular scheme shall also be payable after the admission has been granted to the candidate under this scheme.

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* **Advance Tax on payment of fee to Educational Institutions (Section 2361)**
As per newly inserted **Section 2361** every educational institution is required to collect advance income tax at the rate of 5% on the amount of fee paid to an educational institution. The person responsible for preparing monthly, bimonthly or quarterly fee voucher or challan shall also charge withholding tax in case the fee exceeds Two Hundred Thousand Rupees annually.

Table-9.22(a) Distribution of Seats under Self-Financing Scheme at Mehran UET, Jamshoro.

Cat.	District	CE	EL	ME	ES	CS	TL	SW	CH	IN	PG	AR	CRP	TE	EE	BM	MTE	Total
A-1	**Sukkur**	1	2	2	2	1	1	2	1	0	1	1*	1*	1	0	0	1*	**14**
	Ghotki	1	1	1	1	0	0	2	1	0	1			0	0	0		**8**
	Khairpur	2	1	1	2	1	1	2	1	0	1			1	1	0		**14**
	S. Benazirabad	2	1	1	1	1	0	2	1	0	0			0	0	0		**9**
	N. Feroze	2	1	1	1	1	1	2	1	0	1			1	0	0		**12**
	Total	**8**	**6**	**6**	**7**	**4**	**3**	**10**	**5**	**0**	**4**	**1**	**1**	**3**	**1**	**0**	**1**	**60**
A-2	**Larkana**	1	2	1	1	1	1	2	1	0	1	1*	1*	1	0	0	1*	**12**
	K/Shahdadkot	2	1	1	1	0	0	2	1	0	1			1	0	0		**10**
	Shikarpur	1	1	1	1	1	1	2	1	0	1			1	0	0		**11**
	Jacobabad	1	1	1	1	1	0	2	0	0	1			1	0	0		**9**
	Kashmore	1	1	1	1	0	0	2	1	0	1			0	0	0		**8**
	Total	**6**	**6**	**5**	**5**	**3**	**2**	**10**	**4**	**0**	**5**	**1**	**1**	**4**	**0**	**0**	**1**	**53**
A-3	**Hyderabad**	4	4	4	5	1	1	5	2	1	2	3*	1*	1	1	1	3*	**32**
	Matiari	2	1	1	1	1	1	2	1	0	1			1	1	0		**13**
	T. M. Khan	2	1	1	2	1	1	2	1	0	1			0	0	0		**12**
	T. Allahyar	2	1	1	1	1	1	2	1	0	1			1	0	0		**12**
	Dadu	4	2	2	3	1	1	2	2	0	2			1	0	1		**21**
	Jamshoro	2	1	2	2	1	1	2	1	0	1			1	1	0		**15**
	Thatta	2	1	1	2	1	1	2	1	0	1			0	1	0		**13**
	Sujawal	2	1	1	1	0	1	2	1	0	1			0	0	0		**10**
	Badin	4	2	2	3	1	0	2	2	0	1			1	0	0		**18**
	Total	**24**	**14**	**15**	**20**	**8**	**8**	**21**	**12**	**1**	**11**	**3**	**1**	**6**	**4**	**2**	**3**	**153**
A-4	**Mirpurkhas**	3	2	3	2	1	1	3	2	1	1	2*	1*	1	1	0	3*	**21**
	Umerkot	2	2	1	2	1	1	2	1	0	1			0	0	0		**13**
	Tharparkar	2	2	1	3	1	0	3	1	0	1			1	0	1		**16**
	Sanghar	4	3	3	4	1	1	4	3	0	2			1	1	0		**27**
	Total	**11**	**9**	**8**	**11**	**4**	**3**	**12**	**7**	**1**	**5**	**2**	**1**	**3**	**2**	**1**	**3**	**83**
A-5	**Karachi**	1	0	1	1	1	0	2	1	0	1	0	0	0	0	0	0	**8**
	Total Seats	**50**	**35**	**35**	**44**	**20**	**16**	**55**	**29**	**2**	**26**	**7**	**4**	**16**	**7**	**3**	**8***	**357**

* Seats reserved for respective divisions.

Table-9.22(b) Distribution of Seats for various Districts under Self-Financing Scheme at Mehran UET, SZAB Campus Khairpur Mirs'.

Category	Districts	Number of Seats in Each Discipline			
		CE	EL	ME	Total Seats
A-1	**Sukkur**	1	1	1	3
	Ghotki	1	0	1	2
	Khairpur	2	1	1	4
	Shaheed Benazirabad	1	0	0	1
	Naushahro Feroze	1	0	0	1
A-2	**Larkana**	2	1	1	4
	Kambar Shahdadkot	2	2	0	4
	Shikarpur	2	1	0	3
	Jacobabad	2	1	0	3
	Kashmore	1	1	1	3
A-3	**Hyderabad**	2	2	0	4
	Matiari	1	1	0	2
	T. M. Khan	0	1	0	1
	T. Allahyar	1	1	0	2
	Dadu	2	3	0	5
	Jamshoro	1	1	0	2
	Thatta	0	1	0	1
	Sujawal	0	1	0	1
	Badin	1	2	0	3
A-4	**Mirpurkhas**	1	2	0	3
	Umerkot	2	1	0	3
	Tharparkar	1	1	0	2
	Sanghar	1	0	0	1
A-5	**Karachi**	1	1	0	2
	Total Seats	**29**	**26**	**5**	**60**

9.23 Admissions under University Support Program (USP)

For this scheme **62** seats in Civil and **13** seats in Software Engineering disciplines have been reserved for the candidates having the domicile of Sindh Province as shown in **Table-9.23**. The basic requirement for admission is the same as approved for admission under Regular Scheme. For Civil Engineering the candidates are required to pay Rs. 1,600,000/- (Rupees One Million Six Hundred Thousand Only) + Applicable Tax *currently 5%* (Total Rs. 1,680,000/-), whereas for Software Engineering, the candidates are required to pay Rs. 1,400,000/- (Rupees One Million Four Hundred Thousand Only - once) + Applicable Tax *currently 5%* (Total Rs. 1,470,000/-) in the form of Demand Draft prepared by any branch bank, in favor of "Director Finance, Mehran UET, Jamshoro". The draft in original must be submitted in the office of Director Admissions, MUET, Jamshoro before closing date. All other fees as payable under regular scheme shall also be payable after the admission has been granted to the candidate under this scheme.

Table-9.23.1 Distribution of Seats for various Districts under University Support Program (USP) at Mehran UET, Jamshoro.

Category	Districts	Number of Seats in each Discipline		
		CE	SW	Total Seats
A-1	**Sukkur**	03	3*	**16**
	Ghotki	02		
	Khairpur	03		
	Shaheed Benazirabad	02		
	Naushahro Feroze	03		
A-2	**Larkana**	03	1*	**13**
	Kambar Shahdadkot	02		
	Shikarpur	02		
	Jacobabad	02		
	Kashmore	03		
A-3	**Hyderabad**	03	5*	**28**
	Matiari	03		
	T. M. Khan	02		
	T. Allahyar	02		
	Dadu	03		
	Jamshoro	03		
	Thatta	02		
	Sujawal	02		
	Badin	03		
A-4	**Mirpurkhas**	03	4*	**16**
	Umerkot	03		
	Tharparkar	03		
	Sanghar	03		
A-5	**Karachi**	02	00*	**2**
	Total Seats	**62**	**13***	**75**

* Seats reserved for respective divisions.

Note: The number of self-finance and USP seats Software Engineering may increase subject to the approval of PEC.

The refund of admission fee is only allowed to every unsuccessful/withdrawing* candidate who has applied for admission under Self-Financing Scheme and University Support Program through special cross cheque mentioning the name of refundee with bank account, the name of bank and branch. Therefore, in case of refund of the fee candidates are required to download the fee refund application proforma (from **admissions.muet.edu.pk**), fill-in and submit the same at Directorate of Admissions.

* Conditions apply as mentioned in **Clause 9.27**.

9.24 Admissions of Foreign Candidates under Self-Financing Scheme at Mehran UET, Jamshoro.

The following seats in each discipline are reserved for foreign candidates at main campus under this Self-Financing Scheme who are otherwise eligible for admission as described in **Clause 9.22.4**. The foreign candidates must apply for admission through their Embassies, via Higher Education Commission, Islamabad.

CE	EL	ME	ES	CS	TL	SW	CH	IN	MN	MT	PG	AR	CRP	TE	EE	BM	MTE	Total
6	3	3	4	2	2	-	4	-	-	-	4	-	-	2	1	-	1	32

The foreign candidates are required to pay admission fee in US$ 13,000/- (Dollars Thirteen Thousand Only) along with the admission form. They will also be charged the usual fees as payable by other students under regular scheme.

The saving seats of the above Self-Financing Scheme, if any, may be allocated to the candidates of Sindh Province under University Support Program (USP) on open merit.

9.25 Admission of Overseas Pakistani Candidates under Self-Financing Scheme at Mehran UET, Jamshoro.

The following seats in each discipline are reserved for Overseas Pakistani Candidates under this Self-Financing Scheme who are otherwise eligible for admission. They are required to pay admission fee ~~in~~ of US$ 13,000/- (Dollars Thirteen Thousand Only) along with the admission form. They will also be charged the usual fees as payable by other students.

CE	EL	ME	ES	CS	TL	SW	CH	IN	MN	MT	PG	AR	CRP	TE	EE	BM	MTE	Total
44	3	3	2	2	2	-	2	-	-	-	2	-	-	2	1	-	1	24

The saving seats of the above Self-Financing Scheme, if any, may be allocated to the candidates of Sindh Province under University Support Program (USP) on open merit.

9.26 Admission of Candidates from Azad Jammu & Kashmir under Self-Financing Scheme at Mehran UET, Jamshoro.

Maximum eight (8) seats in the following disciplines are reserved for the candidates domiciled in Azad Jammu and Kashmir under this Self-Financing Scheme:

CE	EL	ME	ES	CS	TL	SW	CH	IN	MN	MT	PG	AR	CRP	TE	EE	BM	MTE	Total
2	1	1	-	1	1	1	-	-	-	-	-	-	-	-	1	-	-	8

The candidates are required to apply directly to the Directorate of Admissions in response to the advertisement. All the other conditions concerning eligibility and fees are same as described in **Clauses 9.2** and **9.22.5** also apply.

The saving seats of the above scheme, if any, may be allocated to the candidates of Sindh Province under Self-Financing Scheme (SFS) on open merit.

9.27 Other Information

- Admission fee is payable only once in the beginning.
- Candidates once admitted under these schemes shall not be allowed to change the discipline unless the seats in the desired disciplines are available.
- The University follows the National Level Fee Refund Policy at Higher Education Institutions of Pakistan which is as under:

% of Tuition Fee	Timeline for Semester
Full 100% fee refund	Up to 7th day of convene of classes
Half 50% fee refund	Up to 15th day of convene of classes
No Refund 0%	From 16th day of convene of classes

- The candidates applying under these schemes is also considered for admission under Regular Scheme, if they are in merit against their districts.
- The University also follows the Fee Refund Policy for the students admitted against Self-Financing Scheme which is as under:

% of Self-Finance Fee	Timeline for Refund
20% Penalty	Up to 7th day of convene of classes
40% Penalty	From 8th to 15th day of convene of classes
100% Penalty – No Refund	From 16th day of convene of classes.

9.28 Migration / Transfer

(i). Migration is only allowed to and from any Public Sector University accredited by PEC and foreign university(ies) recognized by Higher Education Commissions (HEC).

(ii). Migration / Transfer is not allowed to the students in the first and final years with less than 50% Credit Hours required for the degree.

(iii). Migration / Transfer is not allowed to the students admitted on reciprocal basis.

(iv). Migration / Transfer is allowed only in the cases of extreme hardship for the students or if it is considered in the best interest of the University by the competent authority. The decision of the University is final and binding in this regard.

(v). The students failing in previous semesters (i.e., less than 50% marks) shall not be eligible for admission on migration / transfer basis.

(vi). The migration / transfer of the local students would be allowed on the payment of Rs. 800,000/- (Rupees Eight Hundred Thousand Only) + Applicable Tax *currently 5%* (Total Rs. 840,000/-) to the Mehran UET; while foreign students would be required to pay Rs. 1,200,000/- (Rupees One Million Two Hundred Thousand Only) + Applicable Tax *currently* 5% (Total Rs. 1,260,000/-) as migration fee. The nominees are required to submit NO OBJECTION CERTIFICATE (NOC) of the nominating agency.

(vii). Admission on migration basis is made up to the fourth week of the start of the classes of a particular session.

B. BS Programs

9.29 Admission

As prescribed in **Clause 9.1** under Regular Scheme.

9.30 Eligibility for Admission

(i) The candidates who have passed their Higher Secondary School Certificate (HSC Part-II) Annual Examination of 2022under any of the following group or equivalent or have passed their HSC Part-II Annual Examination earlier up to 2019 and have secured at least 60% marks **(Grace marks shall not be considered)** from any recognized Board of Intermediate and Secondary Education in Pakistan or from foreign countries, are eligible to apply for admission in the disciplines mentioned against them in the table given below. Besides that, all the students of Engineering, B.Arch. and CRP Programs of the University can also apply for admission in any of BS programs, if they meet the eligibility criteria under **Clause 9.30.**

Name of Degree Program	Name of Group
Bachelor of Business Administration.	• Pre-Engineering • Pre-Medical • General Science • Commerce
Bachelor of Science in Computer Science.	• Pre-Engineering • Pre-Medical • General Science
Bachelor of Studies in English.	• All Groups.
Bachelor of Science in Mathematics.	• Pre-Engineering • General Science
Bachelor of Science in Environmental Science.	• Pre-Engineering • Pre-Medical

(ii) The candidates who have passed the above examinations or equivalent before Annual Examination 2019 shall not be eligible for admission. The provisional admission of any candidate, who would be unable to secure 60% or above marks in his / her Intermediate (HSC Part-II) will be cancelled immediately and his / her tuition fee will be reimbursed in full without deduction.

(iii) Those students, who were admitted to any other institutes / universities before applying for admission in Mehran UET and were rusticated, debarred or their admissions were cancelled, shall not be considered for admission in the University. Additionally, if the students withhold information regarding such a disciplinary action and they were granted admission; their admission will be cancelled immediately after ascertaining such facts. Those candidates who have been convicted involving moral turpitude shall also be refused admission in the University. Since the admission form is a legal document, any wrong information provided therein or tampering it in any other way is illegal and may result in rejection of the form out rightly.

9.31 Admission Form

As prescribed in **Clause 9.3** under Regular Scheme.

9.32 Pre-Admission Test

As prescribed in **Clause 9.4** under Regular Scheme.

9.33 Interviews

After the receipt of the result of Pre-Admission Test, a comprehensive merit list is prepared for each district/category and a number of candidates roughly equivalent to the reserved seats of concerned category are called for interview before the Admission Committee.

The candidates must be accompanied with his/her guardian declared in his/her admission form during interview. The interviews are held at Mehran UET, Jamshoro on the dates as announced in the newspapers and also on MUET website: **muet.edu.pk**.

The candidates will also be required to bring their original documents as mentioned below for verification:

(i) Marks Certificate of SSC – (Matriculation).
(ii) Marks Certificate of HSC Part-II (relevant to the BS program applied for as per **Clause 9.30**).
(iii) Domicile Certificate of candidate.
(iv) PRC on 'C' Form of candidate.
(v) National Identity Card / B-form (as applicable).
(vi) Medical Certificate on prescribed proforma*.
(vii) Undertaking Certificate on prescribed proforma*.

* Proformas can be downloaded from **admissions.muet.edu.pk**.

It is mandatory for the candidates to appear before the Admission Committee for interview. If any candidate fails to produce all or any of the above-mentioned documents, he / she shall not be allowed to appear in the interview and will be disqualified from the process of admission.

The admission in any of the disciplines shall be allowed on the day of interview; and if admitted, all the above original documents would be retained by the University for at least **one entire year**. The candidates are advised to keep a photocopy of all the documents with them. The candidate has to deposit the fees as mentioned in **Clause 9.21** at the time of interview.

9.34 Distribution of Seats

The distribution of seats for admission are strictly made according to the rules framed for the purpose by the authorities of the University on population basis among the rural and urban areas for the Hyderabad, Mirpurkhas, Larkana and Sukkur Divisions. Five (5) seats have also been reserved for the candidates of Karachi Division. The admission is given on quota basis among various districts / categories at Mehran UET, Jamshoro. However, the award of discipline shall be given on the interview day as per availability of seats of the district / category. Any saving seats from any district are given on open merit basis. The number of seats allocated to each district in various disciplines is given in the **Table 9.34.1** and the description of the seat under **Category-B** and **C** is given in **Table-9.34.2**.

Table-9.34.1: Distribution of Seats Discipline-wise for various Districts, Disciplines and Categories at Mehran UET, Jamshoro.

Cat.	Description	BBA	BSCS	BSE	BSM	BSES	Total
A-1	**Sukkur**	1	1	1	1	1	**5**
	Ghotki	1	1	1	1	1	**5**
	Khairpur	1	1	1	1	1	**5**
	Shaheed Benazirabad	1	1	1	1	1	**5**
	Naushahro Feroze	1	1	1	1	1	**5**
A-2	**Larkana**	1	1	1	1	1	**5**
	Kambar Shahdadkot	1	1	1	1	1	**5**
	Shikarpur	1	1	1	1	1	**5**
	Jacobabad	1	1	1	1	1	**5**
	Kashmore	1	1	1	1	1	**5**
A-3	**Hyderabad**	6	6	6	6	6	**6**
	Matiari	2	2	2	2	2	**2**
	Tando Muhammad Khan	2	2	2	2	2	**2**
	Tando Allahyar	2	2	2	2	2	**2**
	Dadu	3	3	3	3	3	**15**
	Jamshoro	4	4	4	4	4	**20**
	Thatta	3	3	3	3	3	**15**
	Sujawal	2	2	2	2	2	**10**
	Badin	3	3	3	3	3	**15**
A-4	**Mirpurkhas**	3	3	3	3	3	**15**
	Umerkot	2	2	2	2	2	**10**
	Tharparkar	3	3	3	3	3	**15**
	Sanghar	3	3	3	3	3	**15**
A-5	**Karachi**	1	1	1	1	1	**5**
B	MUE *	1	1	1	1	1	**5**
	Totals	**50**	**50**	**50**	**50**	**50**	**250**

BBA Bachelor of Business Administration.
BSCS Bachelor of Science in Computer
BSE Bachelor of Studies in English.
BSM Bachelor of Science in Mathematics
BSES Bachelor of Science in Environmental

***** The students of the University who have been selected on MUE Quota (under **Category-B** of the Prospectus) shall not be eligible to apply again in any program (BE or BS) of the University under MUE Quota.

Table-9.34.2: Description of Category B Candidates Seeking Admission.

Category	Description	Seats
(B)	Real sons/daughters/brothers/sisters of Mehran University employees (serving or retired, deceased, on lien or working on deputation with other Institutions) shall be considered for admission to first year class against the reserved seats on the following criteria: i. First preference is given to real sons/daughters of employees who are confirmed in the University service and have at least three years continuous university service at their credit. ii. Second preference is given to real sons/daughters of employees who are not confirmed in the University service but have at least three years continuous university service at their credit. iii. Third preference is given to real brothers/sisters of employees who are confirmed in the University service and have at least three years continuous university service at their credit. iv. Fourth preference is given to real brothers/sisters of employees who are not confirmed in the University service and have at least three years continuous university service at their credit. v. Fifth preference is given to real sons/daughters of employees who are confirmed in the University service and have less than three years continuous university service at their credit. vi. Sixth preference is given to real sons/daughters of employees who are not confirmed in the University service and have less than three years continuous university service at their credit. vii. Seventh preference is given to real brothers/sisters of employees who are confirmed in the University service and have less than three years continuous university service at their credit. viii. Eighth preference is given to real brothers/sisters of employees who are not confirmed in the University service and have less than three years continuous university service at their credit. **Note:** ▪ The merit with regard to the **Category-C** is determined as per policy of the University. A copy of the appointment order, confirmation order and Affidavit regarding relationship of the candidate with the employee be attached with the admission form. ▪ The students of the University who had already availed MUE Quota (under **Category-C** of the Prospectus) shall not be eligible to apply again under the same quota in any program (BE or BS).	**5**
	Total Seats (B)	**5**

Table-9.34.3: Distribution of Seats Discipline-wise for various Districts, Disciplines and Categories at Mehran UET, SZAB Campus, Khairpur Mirs'.

Cat.	Description	BSM
A-1	**Sukkur**	49
	Ghotki	
	Khairpur	
	Shaheed Benazirabad	
	Naushahro Feroze	
A-2	**Larkana**	
	Kambar Shahdadkot	
	Shikarpur	
	Jacobabad	
	Kashmore	
B	MUE *	1
	Totals	**50**

K-BSM Bachelor of Science in Mathematics at MUET, SZAB Campus, Khairpur.

***** The students of the University who have been selected on MUE Quota (under **Category-B** of the Prospectus) shall not be eligible to apply again in any program (BE or BS) of the University under MUE Quota.

Note: The above program shall not be started with less than 30 students.

9.35 Award of Discipline
As prescribed in **Clause 9.8** under Regular Scheme. Whereas, the saving seats of the above scheme, if any, may be allocated to the candidates of Sindh Province on open merit.

9.36 Rectification of Mistakes
As prescribed in **Clause 9.9** under Regular Scheme.

9.37 Admission of Candidates Who Fail to Deposit the Admission Fees on the Interview Day
As prescribed in **Clause 9.10** under Regular Scheme.

9.38 Additional Marks
As prescribed in **Clause 9.11** under Regular Scheme.

9.39 Deduction of Marks Due to Gap in Education
As prescribed in **Clause 9.12** under Regular Scheme.

9.40 Selection Procedure against Various Categories
As prescribed in **Clause 9.13** under Regular Scheme

9.41 Closing of Admissions Process
As prescribed in **Clause 9.14** under Regular Scheme

9.42 NOC and Study Leave Order for Candidates already in Service
As prescribed in **Clause 9.16** under Regular Scheme

9.43 Admission in any Other Institute
As prescribed in **Clause 9.17** under Regular Scheme

9.44 Identity Card
As prescribed in **Clause 9.18** under Regular Scheme

9.45 Re-Admission Policy
As prescribed in **Clause 9.19** under Regular Scheme

9.46 Enrolment Card
As prescribed in **Clause 9.20** under Regular Scheme

9.47 Roll Numbers
The roll numbers assigned to the successful candidates shall be as under:

i. 22BBA
ii. 22BSM
iii. 22BSE
iv. 22BSC
vi. 22BSES

9.48 Fees

Fees Payable at the Time of Admission:

Sr. No.	Description	Amount	
a).	Admission Fee (Per Year)	Rs.	20,000
b).	Student Identity Card Fee (Per Year)	Rs.	500
c).	Marks Certificate Verification Fee (Once)	Rs.	2,500
d).	Enrollment Card Fee (Once)	Rs.	1,200
e).	Tuition Fee (Per Quarter) *	Rs.	30,000
f).	Examinations fee (including Marks Certificate) for Regular Examinations (Per Quarter)	Rs.	1,000
g).	Transport Charges (Per Quarter)	Rs.	4,000
	Total Fee Payable:	**Rs.**	**59,200**
	University Caution Money Deposit – Refundable**	**Rs.**	**6,000**

* Tuition fee and other package fee per month is Rs. 10,000 which is payable quarterly (10,000 x 3 = 30,000). The deserving students are provided financial support for the payment of tuition fee.

** Refundable only after Completion of Degree Course, in case of cancellation of admission at any stage Caution Money will not be refunded.

10. REGULATIONS FOR SEMESTER SYSTEM

MEHRAN UNIVERSITY
OF
ENGINEERING AND TECHNOLOGY

Regulations (Revised) regarding **the General Scheme of Studies for the Bachelor's Degree Programs (including B.E, B.Arch., B.CRP., BS and BBA)** of the Mehran UET, under Section 47(1) (n) of the Act 1977.

1. **Short Title.** These Regulations may be called the Mehran UET Bachelor of Degree Courses Regulations 2019, repealing such regulations framed by the University authorities (if any).

2. These Regulations shall be subject to the Mehran UET General scheme of Studies for the Bachelor's degree courses Statutes 2012.

3. **Commencement.** These Regulations shall be deemed to have come into force with effect from **19-Batch.**

4. **Definitions.** In these Regulations unless otherwise expressly stated,

i. "University" means the Mehran University of Engineering and Technology, Jamshoro.
ii. "Academic Year" means the Academic Year of the University.
iii. "Spring / Fall Semester" means a Period of 21 weeks out of an academic year for teaching and evaluation and /or guidance of the students of the University.
iv. "Summer Semester" means a Period of 08 weeks out of an academic year forteaching and evaluation and /or guidance of the students of the University.
v. "Vice-Chancellor", "Pro Vice Chancellor", "Dean", "Director", "Chairman / Chairperson" "Teacher" and "Controller of Examinations" means respectively the Vice-Chancellor, the Pro Vice Chancellor, the Dean of Faculty, the Director of Institute, the Chairman/Chairperson of Teaching Department, the Teacher and the Controller of Examinations of the University.
vi. "Departmental Committee". Each Department/ Institute will have a Departmental Committee consisting of three senior most teachers of the Department / Institute including Chairman/ Chairperson/ Director as convener.
vii. "Credit Hours (C.H.)" have been defined in section 6.
viii. "Quality Point (Q.P.), Grade Point Average (G. P.A.), and "Cumulative Grade Point Average (C.G. P.A.) has been defined in section 17.

Approved by Academic Council in its 95th Special meeting held on 30th July, 2019, vide resolution No.95.2 and approved by the Syndicate in its 148th meeting held on 30thAugust, 2019, vide Resolution No.148.8 (iii).

5. Undergraduate Structure of Bachelor's Degree Course in Engineering, City & Regional Planning, Architecture, Business Administration, Mathematics, Computer Science and English is given below Table 5.1

Table-5.1

Total No. of Credit Hrs. (Minimum)	124
Total No. of Credit Hrs. (Maximum)	140
Semester Duration	Minimum of 16 weeks of teaching excluding examinations
Course Duration	Minimum of 8 semesters Maximum time limit of 6 years, further extendable for one year with the approval of Statutory Bodies
Summer Session	For deficiency / failure, repetition of courses up to 9 credit hours (08 Weeks duration)
Course Load per Fall/Spring Semester for Regular Full-Time Students	15-18 Credit Hours (In special cases 15 - 19 Credit Hours)
Minimum of 160 and Maximum 180- Credit hours for 5-year degree program	

6. Credit hours for undergraduate degrees

6.1 A credit hour means teaching/learning a theory course for one hour each week throughout the semester.

6.2 One credit hour in laboratory or practical work/project would require lab contact of three hours per week throughout the semester.

6.3 The credit hours are denoted by two digits within brackets with a plus in between. The first digit represents the theory part while the second (right side) digit represents the practical. Below Table 6.1 gives the possible distribution of Theory and Practical Credit hours.

Table 6.1 Distribution of Theory and Practical Credit Hours

Credit Hours	Distribution in Theory and Practical Hours
01	(0+1)
02	(2+0) / (0 + 2)
03	(3+0) / (2 + 1) / (0 + 3)
04	(3+1) / (0 + 4)

7. Course layout for undergraduate students

7.1 All undergraduate degree programs are composed of 124-140 Credit Hours in which 124 represents the minimum and 140 represents the maximum credit hours required to be completed.

7.2 5-year undergraduate degree program (Bachelor of Architecture) is composed of 160-180 Credit Hours in which 160 represents the minimum and 180 represents the maximum credit hours required to be completed, subject to meeting the requirements of the respective Accreditation Councils.

7.3 For Engineering Programs:

The courses for the Engineering programs will consist of 65 – 70 % of curriculum towards the discipline specific areas of concentration as required by Accreditation council. Non-Engineering courses will be of 30 – 35 %.

For Social and Basic Sciences:

The courses for Social and Basic Sciences disciplines will consist of 60-65% of curriculum towards the discipline specific areas and 35-40% minor/elective

7.4 Project: Every student should write a thesis project report/Business Plan in the final year, of 06 credit hours individually on approved research.
[to be adopted from F-16 Batch, max. 03 students in a group, further review will be made to reduce the no. of student].

7.5 **Internship:** Students should be encouraged to do internship in industry/ research/business organization.

8 Fall / Spring Semester

8.1 There will be two regular semesters (Fall, Spring) in an academic year. Following is the breakup:

i.	Teaching duration of Fall semester	16 Weeks
ii.	Conduct of Mid Semester Exam	01 Week
iii.	Preparation of final Fall Semester Exam	01 Week
iv.	Conduct of final Fall Semester Exam	02 Weeks
v.	Semester Break	01 Week
vi.	Teaching duration of Spring Semester	16 Weeks
vii.	Conduct of Mid Semester Exam	01 Weeks
viii.	Preparation of final Spring Semester Exam	01 Week
ix.	Conduct of final Spring Semester Exam	02 Weeks
x.	Semester Break	01 Week
xi.	Summer Break / Summer Semester	08 Weeks
xii.	Winter Break	02 Weeks
	Total:	**52 Weeks**

9 Summer Semester

9.1 Summer semester will be offered as an optional semester of 08 weeks duration. Students will be offered courses to remove deficiencies and can register up to 09 credit hours for summer semester.

9.2 Moreover, a student who has either failed or has been stopped to take the examination due to shortage of class attendance or wishes to improve his/her grade is allowed to register in summer semester.

9.3 The contact hours per week during the Summer Semester will be doubled to ensure that the course is completely taught in a summer session with half of the duration as compared to a regular (Fall/Spring) semester.

9.4 All the qualifying rules for Fall / Spring semester will be applicable to summer semester.

9.5 There will be no supplementary / special examination after the adoption of summer semester (for the batch with which it is going to be adopted).

9.6 The course in summer semester will be offered with the minimum course registration of 05 students (where intact of students is small, minimum course registration should be 50 % failure students)

10 Academic Calendar

10.1 The calendar will include the following information: to be adopted from next academic year.

a. Date of start of classes
b. Conduct of mid semester
c. Date of suspension of classes
d. Schedule of examination
e. Display of sessional marks

f. Examination preparation up to
g. Conduct of final semester exam
h. Announcement of results
e. Mark sheet / Transcript issues dates.

The academic calendar will be prepared for Fall semester and Spring semester of each academic year.

10.2 In case the University is closed due to unusual circumstances, then makeup classes must be arranged converting weekends or holidays or evening classes to working days or evening classes to cover the lapsed period of the students**.**

11 Withdrawal of Courses from Fall / Spring Semester

11.1 Students may be allowed to withdraw from a course during first 6 week of the semester. In such a case the transcript shall record that the student enrolled in the course and withdrew. Consequently, grade W will be awarded to the student which shall have no impact on the calculation of the CGPA of the student**.**

11.2 A student withdrawing after the 6th week shall be automatically awarded "F" grade which shall count in the GPA and stay on the transcript.

12 Repeating courses / improvement of CGPA

12.1 If a student gets 'F' grade, she/he will be required to repeat the course. However, “F” grade obtained earlier will also be recorded on the transcript.

12.2 Undergraduate students may be allowed to repeat a course in which she/he has obtained grade “C” & below. In such a case both the previous and new grade obtained will be recorded on the transcript, however, only the better grade shall be used in the calculation of CGPA.

12.3 In case of CGPA improvement, it would be recorded with (Imp) on the transcript.

13 Attendance

Minimum 75 % attendance in a course is required to appear in the examination of that course. (Condonation may be limited to 70%)

14 Examination

14.1 In each semester, students may be required to appear in quizzes, tests, mid semester, final semester examinations, presentations (individual/group), group discussion, and submit projects/assignments/lab reports etc. These assessment marks (to be determined by the teacher concerned) will have different weightage contributing towards the overall assessment in percent marks.

This weight age may be determined on the basis of following table:

THEORY

Sr. No.	Description	Theory of Maximum 100 marks	Theory of Maximum 50 marks
i.	Quizzes / Test(s)	**10**	**05**
ii.	Assignments / Project /Presentation	**10**	**05**
iii.	Mid Semester Exam: (with No Option)	**20**	**10**
iv.	Final Semester Exam:	**60**	**30**
	Total Marks	**100**	**50**

PRACTICAL
Max. Marks (100%)

i.	Lab Rubric	30%
ii.	Mini Project / Open ended lab	10%
iii.	Semester Lab Exam	60%
	(a) Objective type test (30%)	
	(b) Conduct of Pr/Viva voce (30%)	

PROJECT

Semester	Thesis Credit Hours	Thesis Credit Marks	Maximum Sessional Marks (By Supervisor)	Maximum Marks for Thesis Viva Voce / Exam		
				Internal	External	Chairman
7th	3	100	25	25	25	25
8th	3	100	25	25	25	25

14.2 In the beginning of a semester, the instructor of each course should hand out a syllabus providing information to the students about assessment criteria, paper specification, schedule of material to be taught (TTP and Lesson Plan), take home assignment policy, recommended reading materials and any other information important for the successful completion of the course and its requirements.

14.3 To implement semester system effectively the subject teacher must display his/her provisional result within five days after the conduct of final exam of that subject and submit the same to the controller of examination for final announcement.

14.4 External examination system will be only for Project/Thesis / Business Plan Examination.

15 Grade Equivalent

GRADE	GRADE POINT	PERCENTAGE OF MARKS
		THEORY / PRACTICAL / PROJECT
A+	4.0	> 90%
A	3.5	89% - 81%
B+	3.0	80% - 73%
B	2.5	72% - 65%
C+	2.0	64% - 60%
C	1.5	59% - 55%
C-	1.0	54% - 50%
F	0.0	< 50%
W*	N/A	N/A
I**	N/A	N/A

* *Withdrawn*
** *Incomplete*

16 Computation of semester grade point average (GPA) and cumulative grade point average (CGPA)

16.1 **Quality Point (Q.P.)**
For computation of the (G.P.A.) the quality point (Q.P) is first determine by the multiplying the value of the grade earned by the students with the Credit Hours of the that course, e.g., if a student obtain "A+" grade for a three credit hours course then this quality point will be calculated as follows: (Q.P.) = 4 x 3 = 12

16.2 **Grade Point Average (G.P.A).**

Grade point Average is an expression for the average performance of a student in the course he/she has been offered during a particular semester. This is calculated by adding the quality points of all the courses taken, divided by the total number of Credit hours offered:

$$\textbf{(G.P.A)} = \frac{\text{Sum of Quality Points}}{\text{Sum of the Credit Hours}}$$

16.3 **Cumulative Grade Point Average (C.G.P.A)**

The Cumulative Grade Point Average (C.G.P.A) is the expression describing the performance of a student in all semesters is determined by the following way:

$$\textbf{(C.G.P.A)} = \frac{\text{Sum of Quality Points for all the courses appeared}}{\text{Sum of the Credit Hours for all the courses appeared}}$$

17 CGPA required for the completion of undergraduate

17.1 For completion of the degree, the minimum qualifying CGPA for BE/BS Students is 2.00.

17.2 In case a student secures less than 2.00 CGPA (minimum qualifying CGPA) at the end of final Semester, she/he may be allowed to get re-admission in one or more courses, in which his/her Grade is below C, provided that she/he is not debarred under the CGPA Improvement (as defined in Section 12) and time duration specified for the program (as defined in table 5.1)

18 Transfer of credit hours for undergraduates

18.1 Credits are transferred on course-to-course basis i.e., a person taking course A at university X is allowed to transfer his/her credits to university Y provided that course A is equivalent to course B taught at the Y university.

18.2 No credit hour of a course will be transferred if the grade is less than C for undergraduate.

18.3 Credit hours may only be transferred between duly recognized HEIs and Internationally recognized Universities.

19 Format of final transcript

The final transcript for the award of degree includes following information:

Front Side:

- Name of Student
- Father's Name
- Surname/Last Name
- Date of Birth
- Roll No.
- Enrolment No
- Name of the Program
- Date of Admission into Degree Program
- Semester Wise Break-up
- Subjects Name along with Credit Hours
- Type of Enrolment – Full Time
- Picture of the Applicant be Printed on Transcript
- Date of Completion of Degree Requirements
- Mode of Study – Regular
- Medium of Instruction- English
- Online Result Verification Key/ID (Front Side at the End of the Transcript)
- GPA/CGPA (at the End of the front side of Transcript)

Back Side:

- Basic admission requirement of the program
- Previous degree held by the student along with institution name
- Credit hours exempted / transferred if any / applicable.
- CNIC number for Pakistani and passport number for foreign students
- Grading system must be mentioned on back side of the transcript
- Charter Date of the University/DAI may be mentioned
- Name of campus / college be mentioned along with HEC permission date
- Signature of issuing officer(s) (front and back side at the end of the transcript)
- The transcript must have the water-mark seal on it.
- For equivalence of CGPA to percentage, for transcript purpose only, below table be placed

CGPA	4.00	3.5–3.99	3.3–3.49	2.5–2.99	2.0–2.49	1.0–1.99
Equivalent %age	95	87	79	70	62	55

20 Departmental Committee

Each Department / Institute will have a Departmental Committee consisting of three senior most teachers of the Department / Institute including Chairman/ Director to assess the progress of the students during the semester and the results of all the examinations including the final semester examination. In case of any discrepancy in the results, during scanning process, the concerned committee will assign a subject expert (other than the Subject teacher) for rechecking the Scripts. The final recommendations of the Departmental Committee concerning the results will be submitted through the concerned Dean and Pro Vice Chancellor / Vice Chancellor for consideration and approval.

21 Course file

Maintaining the Course File is compulsory for all faculty members. It should have complete record of every activity that happens during the course. The course file should contain:

(For Theory)

1. Academic Calendar
2. Course contents with defined CLOs, taxonomy level and linking to PLOs
3. Tentative Teaching Plan
4. Lesson Plan
5. Classes Time Table and student counselling hours including record of makeup classes (if any)
6. Semester Progress Report
7. Student's attendance register
8. Teaching material
9. Class sessional activities and record (Tests/ Assignments / etc. with solutions)
10. Mid Semester and Final Exams Question papers and solutions
11. Sample of best, worst and average answer sheets of Tests / Assignment / Exams
12. Award Lists
13. Assessment Sheet conforming to the CLOs and PLOs
14. Course Evaluation Report

(For Practical)

1. Academic Calendar
2. List of Experiments
3. Tentative Teaching Plan
4. Laboratory Time Table
5. Student's attendance register
6. Laboratory Manual / Workbook
7. Rubrics Sheet
8. Sample of Objective type paper with solution

9. Sample of Best, Worst, and average Objective type test
10. Award Lists
11. Assessment Sheet conforming to the CLOs and PLOs
12. Course Evaluation Report

22 Freezing of Semester

22.1 If a student freezes a semester(s), she/he will resume his/her studies from the same stage where she/he left (froze). No freezing during the semester will be allowed. The maximum duration of the degree program shall remain the same.

22.2 The duration of Freezing is one year; a candidate who gets a semester freeze can get readmission next year with upcoming session.

23 Indiscipline in Examinations

23.1 Any candidate found guilty of following matters; his / her case will be submitted to Unfair Means Cases Committee constituted by the University. This committee is constituted of two (2) senior faculty members, Director Student's Affairs, headed by senior professor of the University.

i Removes a leaf from his/her answer book, the answer book shall be cancelled.
ii Submits forged or fake documents in connection with the examination.
iii Commits impersonation in the examination.
iv Copies from any paper book or notes.
v Mutilates the Answer Book.
vi Possesses any kind of material, which may be helpful to his/her in the examination.
vii Does anything that is immoral or illegal in connection with the examination and which may be helpful to him/her in the examination.
viii Refuses to obey the invigilation staff or refuses to follow the instructions issued by the University in connection with the examination.
ix misbehaves or creates any kind of disturbance in or around the examination center
x Uses abusive or obscene language on the answer script.
xi Possesses any kind of weapon in or around examination center.
xii Possesses any kind of electronic device which may be helpful in the examination

His/her case shall result in penalties keeping in view the nature and intensity of offence.

i. Cancellation of paper*.
ii. Suspension from program for one semester.
iii. Heavy and light Fine
iv. Expulsion forever from the University.
v. Any other.

* Unfair Means Cases Committee will decide that the student will have to appear in summer semester/with regular semester for the cancelled paper.

24. Appeal against the decision of the Unfair Means cases Committee

If a student is not satisfied with the decision of the Unfair Means Cases Committee, she/he can submit his/her appeal within a week after the decision of the Committee to the Vice Chancellor. No appeal shall lie against the decision of the Syndicate.

25. Probation

Probation is a status granted to the student whose academic performance falls below the minimum university standard.

i. The students acquiring less than 1.70/4.00 GPA in a semester but passing in all papers will be promoted with the condition to achieve more than 2.0 GPA in the next semester and she/he will be put on probation for the next semester**.**

ii. The students acquiring GPA 1.7 and above but failing in any paper(s) will be placed on probation and promoted to the next semester conditionally. They will have to be registered for summer semester to improve the grade.

iii. Students acquiring GPA less than 1.7 in two consecutive semesters and failing in any paper(s) even after attending summer semester for one academic year will have to seek re-admission. Re-admission will be allowed only twice during 4 years undergraduate degree program. Re-admission will be allowed after the payment of full admission fee.

26 Permission of writer for special students

26.1 A visually impaired student may be allowed to attempt the Mid / Final Examinations of the University on Braille / Computer / any other means of facilitation.

26.2 In case a student is physically handicapped / visually impaired, she/he may apply to the Chairperson of the respective department (with medical certificate as proof of her / his disability) for permission to engage a writer in Tests / Examinations of the University two weeks before the start of Tests / Examinations. She / he will be allowed 45 minutes (maximum) extra time to solve the question paper.

26.3 The qualification of the person who acts as writer of a handicapped student must be at least one step lower than that of the student. (e.g., for level 6 student, the writer should be at the most of level 5).

27 Damaged/ Lost Answer Script

In an exceptional case where an answer script is damaged, lost or destroyed due to unavoidable circumstances, then the student may be given the following options:

i Average marks shall be awarded to the student in that subject/course.

ii In case of Final Year Examination, if the candidate so desires, she/he shall be given another chance as a special case to take the Examination in that subject/course in the next examination and no examination fee shall be charged from the student.

28 Awards and Distinctions

i. Medals/Positions will be awarded to the students passing their courses/papers in Semester System in the first attempt only.

ii. In the Semester System, Letter Grades will be awarded on the basis of GPA / CGPA and Positions would be given on the basis of CGPA. In case two or more students are acquiring same CGPA only then the Positions will be shared among those students.

iii. No medal and position will be granted to candidates who passed the examination in 2^{nd} attempt.

iv. No Medal/Roll of Honor will be awarded in the case of improving CGPA.

v. The disciplines where number of students is less than 05, no position will be awarded in semester system.

11. STUDENTS CONDUCT AND DISCIPLINE REGULATIONS

The Regulations regarding the conduct and discipline of students of Mehran UET, under section 47(1) of the Act, 1977, as amended on 17.9.1986 and further amended on 06.07.2006 are given below:

11.1 Short Title

These Regulations may be called the Mehran UET Students Conduct and Discipline Regulations, 1978 as amended up to 6.7.2006.

11.2 Commencement and Applications

These Regulations shall come into force with immediate effect, and shall apply to all the students of the University, Centre of Excellence and the Colleges/Institutes constituted / affiliated to the University.

11.3 Definitions

i. "**University**" means the Mehran University of Engineering and Technology at Jamshoro.

ii. "**Campus**" means the Mehran UET, Khairpur Mir's Campus, and all areas and building structures including academic block / teaching departments, hostels or halls of residence of students, administration block, sports grounds-gymnasium and any staff residential area, recreational areas for students and staff and any other such areas, buildings or facilities created within the specified boundary of the University and likewise areas of affiliated / constituted colleges / institutes / Center of Excellence.

iii. "**Syndicate**" means the Syndicate of the University.

iv. "**Vice-Chancellor**" means the Vice-Chancellor of the University.

v. "**Discipline Committee**" means the Discipline Committee of the University constituted under the First Statutes appended to Mehran University Act, 1977, and / or constituted separately for the constituent or affiliated colleges / Institutes/Center of Excellence by the Governing Body or management of that college / Institute / Center of Excellence with the approval of the Vice-Chancellor, Mehran University of Engineering & Technology.

vi. "**Dean**", "Director of an Institute / Chairman of the Department", "Teacher Incharge of the Class", "Workshop Superintendent", "Provost", "Deputy Provost", "Warden", "Director Sports", "Games Incharge", "Officer Incharge of Students Affairs", and "Principal" / "Director" of the Constituted / Affiliated College / Institute / Center of Excellence. respectively, means the Dean, Director of Teaching Institute / Chairman of a Teaching Department, Teacher Incharge of the Class, Workshop Superintendent, Provost, Deputy Provost, Warden, Director Sports, Games Incharge, Director Students' Affairs, Students Welfare Officer, Students Advisor appointed as such by the competent authority and mutatis-mutandis officers / teachers in the affiliated college / institute / Center of Excellence.

11.4 Every student shall observe the following:

a) Hershel must be faithful in his/her religious duties and respect the convictions of other in matters of religion and customs.

b) Hershel must be loyal to his/her country and refrain from doing anything which might lower its honor and prestige.

c) He/She shall be truthful and honest in his/her dealings with all people.

d) He/She must respect the elders and be polite to all specially to the women, the children, the old people, the weak and the helpless.

e) He / She must respect his / her teachers and others in authority in the University / College.

f) He / She must keep his / her mind clean and be clean in speech, sports and habits.

g) He / She shall help his / her fellow beings especially those in distress.

h) He / She must devote himself / herself faithfully to his / her studies and obey and follow the rules, instructions, and guide lines issued by the University authorities from time to time.

i) He / She must observe thrift and protect property.

11.5 No Student Shall:

a) Smoke in his/her class room, laboratory, workshop, library, examination hall or convocation hall and during any academic functions.

b) Consume alcoholic liquor or other intoxicating drugs within the University / College or during the instructional, sports or cultural tours or survey camps or enter any such place or attend any such tour or camp while under the influence of such intoxicants.

c) Organize or take part in any function within the University/College, organize any club or society of students without permission of the University authorities.

d) Indulge into activities against the Islamic and Pakistan Ideology or national solidarity.

e) Indulge into activities promoting, prompting or involving violence or hatred or contempt.

f) Affiliate himself/herself with any political party or group and organize or take part in holding political gatherings and invite any politician, expelled or rusticated or debarred students, and anti-social elements in the University / College.

g) Use pressure tactics or political or personal influence in seeking academic concessions or financial benefits or in other matters concerning academic and administrative functions of the University authorities.

h) Copy or help others in copying in examination, or cause by any means any disturbance in examinations including harassment of any teacher or other staff member or staging of walkout/boycott by himself/ herself or by forcing others to do so or appear in examination in place of a bonafide eligible candidate or manage an outsider for impersonation or take unauthorized the whole or part of answer book / script out of an examination premises or tear scripts or any part thereof or indulge in substitution of Answer Books or influence any employee to indulge in any malpractices.

i) Bring, keep or use any kind of weapon or fire arms within the University / College.

j) Use or occupy fully or partially any room or any building of the University / College un-authorized.

k) Organize or take part in procession or meeting within the University / College, prejudicial to the peaceful atmosphere of the University.

l) Stage, incite, or participate in or abet any walk-out, strike, or any other form of agitation against the University/College or its teachers or officers.

m) Collect any money or receive donations or pecuniary assistance for or on behalf of the University or any organization except with the written permission of the Vice-Chancellor or any other person authorized by him in this regard.

n) Bring, keep, or use mobile phone with built-in camera and digital dictionary within the Academic and Examination buildings of the University/College.

o) Snatch mobile phones, use mobile phone during examination/ class/practical or in the library.

p) Tease the girl/boy students; demonstrate indecent or immoral gestures/attitude towards girl/boy students on the University/College.

q) Abuse/violate IT policies framed or to be framed from time to time

11.6 The teachers and officers of the University/College or committees formed under them for the purpose and others concerned with the students in the University/College are responsible for the maintenance of discipline and order among the students, while under their charge, and for dealing with any disorderly behavior promptly in the manner prescribed by these regulations.

11.7 The Discipline Committee shall deal with serious cases of indiscipline requiring such actions as prescribed by Regulation 10.

11.8 A teacher or an officer in whose presence or in relation to whom an act of indiscipline is committed or who obtains knowledge of such an act on report or otherwise, shall deal with the case himself/herself as he/she may be competent as provided under the Regulation 10

below, and in other case, he/she shall inform and recommend the case to the higher authorities/bodies for necessary action as prescribed.

11.9 Any one or more of the penalties mentioned in Regulation 10 may be impose on a student who is guilty of one or more of the following acts:

a) commits breach of any of the clauses specified in Regulations 4 or 5 above; or
b) disobeys the lawful order of a teacher or other person in authority in the University; or
c) habitually neglects his/her work or habitually absents himself/herself from the class without reasonable cause; or
d) willfully damages University/College property or the property of a fellow student or any teacher or any employee of the University/College; or
e) does not pay the fees, fines or other dues livable under the University Regulations; or
f) does not comply with the Regulations relating to the residence in the hostels or halls of residences.; or
g) uses indecent language, wears immodest dress, makes indecent remarks or gestures or behaves in a disorderly manner; or
h) commits any criminal, immoral or dishonorable act (whether committed within the University/ College or otherwise) which brings bad name to the University/College. Any one or more of the penalties mentioned in Regulation 10 may be imposed on a student who is guilty of one or more of the above acts/charges.
i) The penalty or penalties imposed shall be appropriate and proportional to the nature and gravity of the above act or acts.

11.10 The penalties which may be imposed and the authority or authorities competent to impose each kind of penalty are specified below:

PENALTY		**AN OFFICER OR AUTHORITY COMPETENT TO IMPOSE THE PENALTY**
(a)	(I) Exclusion from class room/ Laboratory/ Field work/ workshop up to four classes from his/ her own classes.	Class Teacher/Workshop Instructor
	(ii) Impose fine up to Rs. 1000/-	-do-
(b)	Exclusion from the games or the field for the day.	Games Incharge
(c)	Exclusion from Instructional or sports tour or survey camp.	Teacher/Officer Incharge
(d)	(I) Exclusion from the department/Institute for a period not exceeding one week.	Chairman of the Teaching Department/ Director of the Teaching Institute.
	(ii) Impose fine up to Rs. 2000/-	-do-
(e)	Exclusion from the Department/Institute for a period not exceeding two weeks.	Dean of the concerned Faculty /Principal of the College on the recommendations of the concerned Departmental Committee
(f)	Fine not exceeding Rs.1000/-	Teacher Incharge, or Superintendent of Workshop
(g)	Fine not exceeding Rs.10000/-	Dean of the Faculty Concerned/Principal of the College on the recommendation of the Concerned Departmental Committee.
	(i) Fine not exceeding Rs.20,000/-	Vice-chancellor on the Recommendations of the Dean concerned and concerned Departmental Committee
	(ii) Exclusion from the department/ Institute for a period not exceeding 3 weeks	-do-

	(iii) Fine up to Rs. 40,000/-	Vice-chancellor on the recommendations of the Discipline Committee.
(h)	With-holding of issue of character certificate	Chairman of the Teaching Department/ Director of the Teaching Institute.
(i)	Cancellation of examination or part there-of, or debarring from appearing in any examination or part there-of.	Vice-Chancellor on the recommendations of the Discipline Committee
(j)	Cancellation of remission of fee or university Scholarship	Vice-Chancellor on the recommendations of the Dean of the Faculty concerned/ Principal of the College.
(k)	Suspension or removal from position of authority in the University Sports Board.	Vice-Chancellor on the recommendations of the Executive Committee of the University Sports Board.
(l)	Suspension of admission from the University for a period specified or unspecified pending the final decision.	Dean/Principal of the concerned Faculty on the recommendations of the Departmental Committee.
(m)	Rustication/Expulsion from the University for a period not exceeding one year.	Vice-Chancellor on the recommendations of the Discipline Committee
(n)	Rustication/expulsion from the University for a period exceeding one year.	Syndicate on the recommendations of the Discipline Committee.
(o)	Cancellation of admission from the University.	Syndicate on the recommendations of the Discipline Committee.
(p)	With-holding issuance of any degree.	Syndicate on the Recommendations of the Discipline Committee.

Provided that the superior authorities shall be equally competent to impose lighter penalties with the competence of inferior authorities as prescribed above.

11.11 No student shall be rusticated or expelled from the University unless he/she has been allowed a reasonable chance of defending the accusation against him/her provided that if the competent authority is satisfied it may take such an action under emergency to avoid any grave consequences.

11.12 (i) An appeal against imposition of the penalties shall lie with the Vice- Chancellor, provided that where the penalty has been imposed by the Vice-Chancellor, himself, an appeal shall lie with the Syndicate.

Provided that when a penalty has been imposed by the Syndicate, an application for review can be made to the Syndicate.

(ii) No appeal by a student under these Regulations shall be entertained unless it is presented within two weeks from the date on which the decision is communicated to him/her, provided that the Vice-Chancellor may for valid reasons condone delay in any individual case.

11.13 The Vice-Chancellor or any teacher or officer duly authorized by the Vice Chancellor/ Principal/ Director of the Constituted/ Affiliated Colleges/Institutes/ Center of Excellence may direct a student to pay compensation for any loss or damage to property belonging to the University or to fellow student or to an employee of the University/ College, caused by willful act or gross negligence of the student and if the student does not pay such compensation within a reasonable time, competent authority, as the case may be, may take suitable action against him/her for indiscipline and impose upon him/her any of the penalties prescribed by Regulation 11.10 above.

GENERAL INSTRUCTIONS

In order to conduct the test efficiently and transparently, the candidate must follow the following instructions and the instructions given by the Invigilators:

1. The Test consists of 100 questions and is divided into four parts as follows:

   Total time to attempt all questions is 60 minutes (01 hour).
   Pre-Engineering group: Physics, Chemistry, Mathematics and English (25 questions each)
   Pre-Medical group: Physics, Chemistry, Biology and English (25 questions each)
   General Science group: Physics, Computer Science, Mathematics and English (25 questions each)
   Commerce / Humanities / Other groups: General Science (25 questions), General Mathematics (30 questions), Intelligent Quotient (20 questions) and English (25 questions)

2. The request of group change (Pre-Engineering, Pre-Medical, General Science or Others) will not be allowed on the Test Day.
3. There will be no negative marking on wrong answer. Each correct answer carries one mark.
4. The Computer Based Test (CBT) credentials shall be provided to the candidate.
5. The candidate shall follow the instructions by Invigilators for login and commencement of the test.
6. All rough work must be done only on the provided rough-work sheet. The rough work sheet is the property of the University, and each candidate will have to return the rough work sheet at the end of the Test. **If any candidate takes away the rough work sheet for any reason, he/she will be treated according to the law and his/her name will be removed from the list of the candidates for admission.**
7. The selected answer can be changed any time before termination of the Test.
8. Opening of any other website or software is strictly prohibited.
9. **During the Test, if any candidate terminates the test intentionally or unintentionally, he/she will not be allowed to continue the Test.**
10. **During the Test, do not talk, whisper, or turn eyes away from your dedicated screen. Candidate(s) found doing so will be removed from the list of the candidates for admission.**
11. **Any evidence of impersonation, cheating or non-compliance with instructions will disqualify the candidate(s) and will be removed from the list of the candidates for admission.**
12. Don't leave your seats unless and until allowed.

PRE-ADMISSION TEST
SAMPLE TEST PAPER

(A) FOR PRE-ENGINEERING, PRE-MEDICAL AND GENERAL SCIENCE GROUPS

General Instructions

The test is divided into following four parts and sub-parts:

Part I: English 25 Questions

- Vocabulary
- Grammar
- From Text
- Sentence correction

Part II: Physics 25 Questions

- All chapters (XI and XII)

Part III: Mathematics/Biology 25 Questions

- All chapters (XI and XII)

Part IV: Chemistry/Computer Science 25 Questions

- All chapters (XI and XII)

Part I

English

Vocabulary

1. A week before the MUET exam, Ahmad started to _____ vocabulary, which he had not studied yet.

a) Underscore
b) Betroth
c) Inundate
d) Martinet

Grammar

2. I _____ tennis every Sunday morning.

a) playing
b) play
c) am playing
d) am play

From Text

3. How were Quaid's feelings even though he drove through the unceasing shouts of People?

a) Gay and Gaiety
b) Calm and serene
c) Quite happy
d) Quite gloomy

4. Who wrote the novel "The Prisoner of Zenda"?

a) Shakespeare
b) Words Worth
c) Anthony Hope
d) John Milton

Sentence Correction

5. Jeans *was* not permitted in out college.

a) were
b) had
c) will
d) have

Part II

Physics

1. The product of mass and velocity is called:

a) Acceleration
b) Moment Arm
c) Negative Accelerations
d) Momentum

2. The production of X-Rays can be regarded as an inverse of:

a) Electromagnetic effect
b) Photoelectric effect
c) Compton's effect
d) Photon effect

Part III

Mathematics

1. If $\sqrt{\sqrt{cos}\emptyset\ \sqrt{cos}\emptyset\ \sqrt{cos}\emptyset}$ ..... $= 1, then\ \ \emptyset =$

a) $n\pi/2$
b) $2n\pi$
c) $n\pi$
d) $2n\pi/3$

2. If y =f (x), then $\frac{dy}{dx}$ *is defined as*_____

a) $\frac{dy}{dx} = \lim_{\delta x \to 0} \frac{f(x+\delta x) - f(x)}{\delta x}$

b) $\frac{dy}{dx} = \lim_{\delta x \to 0} \frac{f(x-\delta x) - f(x)}{\delta x}$

c) $\frac{dy}{dx} = \lim_{\delta x \to 0} \frac{f(x-\delta x) + f(x)}{\delta x}$

d) $\frac{dy}{dx} = \lim_{\delta x \to 0} \frac{f(x+\delta x) + f(x)}{\delta x}$

Biology

1. Presence of one of the followings made evolution of respiration possible.

a) Carbon dioxide
b) Oxygen
c) Nitrogen
d) Inert gasses

2. If non-protein part is covalently bonded, it is known as:

a) Co-enzyme
b) Activation
c) Prosthetic group
d) Product

Part IV

Chemistry

a. The Chemistry of Carbon is Called:

i. Organic Chemistry
ii. Inorganic Chemistry
iii. Physical Chemistry
iv. Pharmaceutical Chemistry

b. How many moles of Sulphur are there in 64 grams of the element?

i. 1
ii. 2
iii. 3
iv. 4

Computer Science

1. Keyboard is a:

a) Input device
b) Output device
c) Important device
d) Plastic device

2. Personal Computer consist of:

a) Central Processing Unit
b) Input
c) Output
d) All of the above

----------GOOD LUCK----------

(B) FOR OTHER GROUPS

General Instructions

The test is divided into following four parts and sub-parts:

Part I:	**English**	**25 Questions**

- Vocabulary
- Grammar
- Comprehension
- Sentence correction

Part II:	**General Mathematics**	**30 Questions**

- Sets and series problems
- Algebraic problems
- Arithmetic problems
- Geometric and trigonometric problems

Part III:	**General Science**	**25 Questions**

- Physics
- Chemistry
- Biology
- Computer Science

Part IV:	**Intelligence Quotient (IQ)**	**20 Questions**

Part I

English

Vocabulary

1. A week before the MUET exam, Ahmad started to _____ vocabulary, which he had not studied yet.

a) Underscore
b) Betroth
c) Inundate
d) Martinet

Grammar

1. I _____ tennis every Sunday morning.

a) playing
b) play
c) am playing
d) am play

Comprehension

A man is known by the book he reads as well as by the company he keeps; for there is a companionship of books as well as of men and one should always live in the best company, whether it be of books or of men.

A good book may be among the best of friends. It is the same today that it always was, and it will never change. It is the most patient and cheerful of companions. It does not turn its back upon in times of adversity or distress. It always receives us with the same kindness; amusing and interesting us in youth, comforting and consoling us in age.

1. Which of the following would be the most appropriate title for the given passage?

a) Books show the reader's character
b) Books as man's abiding friends
c) Books are useful in the youth
d) The importance of books in old age

Sentence Correction

1. Jeans *was* not permitted in out college.

a) were
b) had
c) will
d) have

Part II

General Mathematics

Sets and Series Problems

1. If A = {a, b, c, d} then how many subsets of A can be formed?

a) 16
b) 32
c) 12
d) 8

Algebraic Problems

2. If P(x) = 3x2+(k-1)x+9 and P(3) = 0; then k = ?

a) – 13
b) 11
c) 13
d) – 11

Arithmetic Problems

3. If the ratio of two numbers is 8:3, and their difference is 25. Then what are the two numbers?

a) 15 and 40
b) 17 and 42
c) 20 and 45
d) 22 and 47

Geometric and Trigonometric Problems

4. In a right-angle triangle, the highest possible measure of an angle is ___ degrees.

a) 90
b) 180
c) 60
d) 180

Part III

General Science

Physics

1. The product of mass and velocity is called:

a) Acceleration
b) Moment Arm
c) Negative Accelerations
d) Momentum

Chemistry

2. The Chemistry of Carbon is Called:

a) Organic Chemistry
b) Inorganic Chemistry
c) Physical Chemistry
d) Pharmaceutical Chemistry

Biology

3. Which blood cells are called 'Soldiers' of the body?

a) WBC
b) Platelets
c) RBC
d) All of the above

Computer Science

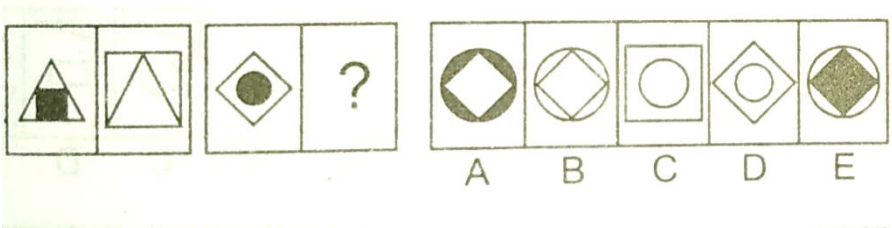
4. Keyboard is a:

a) Input device
b) Output device
c) Important device
d) Plastic device

Part IV

Intelligence Quotient (IQ)

1. Find the missing pattern in the next pair.



2. Which three words have the same meaning?

i. Information; ii. Indoctrinate; iii. Brainwash; iv. Convince; v. Class

a) ii; iii; iv
b) i; iii; iv
c) iii; iv; v
d) i; ii; iv

----------GOOD LUCK----------

MEHRAN UNIVERSITY OF ENGINEERING & TECHNOLOGY, JAMSHORO

INSTRUCTIONS & ADMISSION SCHEDULE SESSION 2022-23

Undergraduate Program (22-Batch)

All the candidates who have qualified the Pre-admission Test of this University, are hereby advised in their own interest to **read the following INSTRUCTIONS very carefully**. Those having their names appear in the Interview Call List / First Provisional Merit List should also note down the schedule for their personal appearance to submit their original documents, interview and admission.

1. Merit-wise **Data Record** (Provisional General Merit List) of all the candidates has been displayed on the website of the Directorate of Admissions (admissions.muet.edu.pk) on **19-09-2022**. If any of the candidates wants to make **corrections(s)** in his / her Data Record; he / she may contact Admissions Office on or before **21-09-2022 up to 3:00 p.m.**

2. The Interview Call Lists / First Provisional Merit List for each category under Regular and Self-Finance Schemes will be notified on **September 22, 2022** and displayed on the University website(s) (admissions.muet.edu.pk; muet.edu.pk).

3. Each candidate would then be required to appear before the Admission Committee for an interview on specific date and time as per schedule to choose the discipline from the available seats in their respective category. The interviews shall be conducted from **26-09-2022** at Mehran UET, Jamshoro (District-wise schedule shall be displayed on the University website). **Each candidate according to the order of Interview Call List should personally report for an interview along with a parent / a guardian (Please note that only one parent / guardian will be allowed to enter the premises with the candidate due to COVID-19 SOPs).**

4. All the candidates must bring **ALL** the following **ORIGINAL** documents (including previous and improved/changed group marks certificates, if available) along with photocopies of the documents as mentioned on the date and time according to the schedule. Candidate should come prepared to choose the discipline. No candidate in any circumstances will be entertained with short of the any of the following documents:

a)	**S.S.C. or Equivalent Mark Certificate**	**Original – (to be retained) and one attested photocopy**
b)	**H.S.C. or Equivalent Mark Certificate**	**Original – (to be retained)** and one attested photocopy
c)	**IBCC Equivalent Certificate** *(For foreign examinations)*	**Original – (to be retained)** and one attested photocopy
d)	**Domicile Certificate of Candidate**	**Original – (to be retained)** and one attested photocopy
e)	**PRC (Form C) of Candidate**	**Original – (to be retained)** and one attested photocopy
f)	**CNIC / B. Form**	**Original** and one attested photocopy
g)	**Affidavit and Physical Fitness Certificate***	**Original – (to be retained)**
h)	**Hifz-e-Quran Sanad** (*for Hafiz*)	**Original – (to be retained)** and one attested photocopy

* The specimen of the Affidavit and Physical Fitness Certificate proformas can be downloaded from Admissions Website.

5. If any of the candidates is unable to attend the interview in case of ***exceptional circumstances*** **e.g., *being COVID-19 positive***' should contact the Directorate of Admissions at least 24 hours prior to his / her interview date. He/she will be required to present the proof of his absence i.e., result of COVID-19 test. The candidate if allowed, must authorize (authority letter) any one of his parents / guardians to appear and carryout all decisions / formalities in the interview on his / her behalf. The authority letter must contain specimen signature of the candidate and a copy of CNIC.

6. All the candidates/parents shall bear in mind that they are appearing in the interview with their own consent and they are expected to follow the SOPs while traveling to / from the university, during interview, and after they leave the university premises.

7. **All the candidates must comply with the following COVID-19 SOPs:**

   a) All the candidates and parents should get their hand sanitized at the entryways of the interview venue.
   b) Face mask is mandatory for the all the candidates, parents, faculty and staff.
   c) The candidates, parents, faculty and staff are required to carry their own mask and pocket-sized hand sanitizers.
   d) The candidates, parents, faculty and staff are required to maintain social distancing protocols (at least 6 feet) distance from each other and avoid handshaking, physical contact, spitting and touching faces.
   e) The temperature of the candidates, parents, faculty and staff will be checked with an infrared thermal gun/gadget before entering interview hall / venue.
   f) All the candidates, parents, faculty and staff who have symptoms of COVID-19 are required to undergo the COVID-19 test.
   g) An ambulance will be available during interviews to transfer the COVID-19 positive cases to the nearby hospital.
   h) Maximum 140 candidates will be allowed during the conduct of interviews.
   i) Failure to comply these SOPs will lead to disciplinary action.
   j) All the candidates / guardians are strictly advised to follow COVID-19 SOPs issued by the Health Departments, Govt. of Sindh / Pakistan from time to time.

8. If any of the candidates reports after his / her scheduled final reporting time, University authority may consider him / her for admission on merit against leftover seats under respective category at the end of the day.

9. If any of the candidate does not report on his / her scheduled day, the University authority may consider him / her for admission on merit against leftover seats in subsequent lists of respective categories.

10. The candidates who do not appear for interview on the specified schedule dates for any category shall not be considered for admission and his / her name shall be deleted from the Merit List.

11. All candidates should bring **CASH (Payment shall be made on spot)** to deposit the following fees (whichever applicable) on the day of interview:

Discipline	Regular Scheme*	Self-Finance Scheme*	BS Programs*
Fee	Rs. 58,500/-	Rs. 42,500/-	Rs. 65,500/-

* Library fee amounting to Rs. 300 is also included in the total fee at the time of admission.

Note: For the purpose of reference the printed documents related to admission (e.g., Prospectus, Merit List, and Admission Schedule etc.) shall be quoted in case of any objections / claims. No telephonic or personal statements shall be considered relevant in any of such claims. The University will not be responsible for COVID-19 infection to any of the candidates / parents / guardians appear in the interview.

Director Admissions

Contact: 022 2771704
Email: admissions@admin.muet.edu.pk

NOTES FOR THE STUDENTS