



MEHRAN UNIVERSITY
OF ENGINEERING & TECHNOLOGY
JAMSHORO, SINDH - PAKISTAN

2020-21 PROSPECTUS

Bachelor's Degree Program

**APPLY
ONLINE**

admissions.muet.edu.pk
www.muet.edu.pk



ISO 9001 Certified

Acknowledgment

All Photographs in this Prospectus feature our current students.
We'd like to thank them for their involvement.

Disclaimer

The information in this prospectus is correct at the time of publishing.
The Institute reserves the right to add or remove courses and to make changes in syllabuses, courses options and modules, fees etc. without prior notice. 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 or for alternative formats of this prospectus please contact us on admissions@admin.muft.edu.pk



ISO 9001 Certified

PROSPECTUS 2020-21

For Undergraduate Studies
in
Engineering, Architecture and
City & Regional Planning
SESSION 2020-21
and
BS Programs
in
BBA, BSCS, BSGM, BSM, BSE
at
MEHRAN UNIVERSITY OF
ENGINEERING & TECHNOLOGY,
JAMSHORO



MEHRAN UNIVERSITY OF ENGINEERING & TECHNOLOGY, JAMSHORO



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 ensure 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 consider 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 2014 have been adopted by the Department of Electronic Engineering MUET Jamshoro as the PLOs for its Bachelor in Electronic Engineering Program. It is ensured that these PLOs are achieved by respective CLOs of Electronic Engineering curriculum as assessed through both direct and indirect methods.

LIST OF PLOs

The twelve PLOs for BE Electronic Engineering Program are:

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

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

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

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

5. Modern Tool Usage: An ability to create, select and apply appropriate techniques, resources, and modern engineering

and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.

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

7. Environment and Sustainability: 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. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

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

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

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

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



OUR MAJOR ACHIEVEMENTS

UNIVERSITY OF TODAY – WORKING FOR TOMORROW

- Ranked amongst top 400 engineering universities of the world in 2010
- Ranked 2nd best public sector engineering university of country and 1st in Sindh province
- 14 Patents registered
- Lifelong Learning Resource Centre Established
- FM Radio Frequency 96.2 Allotted
- Five start-up Companies Registered
- Launching of Mechatronics Engineering Program
- 150+ 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.muett.edu.pk)
- US-Pak center for advanced studies in Water (USPCAS-W) Established (Water.muett.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.muett.edu.pk))
- Gender policy introduced (www.muett.edu.pk/sites/default/files/MUET-Gender-Policy-Statement.pdf)





ACADEMIC CALENDAR 2020-21 FOR BACHELOR'S DEGREE PROGRAMS

**Duration of a Semester:**

| | |
|---|-----------------|
| Teaching (including Mid Semester Exam): | 16 Weeks |
| Final Semester Exam Preparation | 01 Week |
| Final Semester Exam Conduct | 03 Week |
| Semester Break | 01 Weeks |
| Total Duration: | 21 Weeks |

Duration of a Year:

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

Minimum attendance requirement to be eligible to appear in the Semester Examination is 75%.
Minimum number of Lectures during the Semester in a subject of 3 CH shall be 45.
Minimum number of contact hours for a practical of 1 CH per Semester is 45.

FALL SEMESTER

| Batch & Semester | 20-Batch (1st Semester) 19-Batch (3rd Semester) 18-Batch (5th Semester) 17-Batch (7th Semester) F16-Batch – Arch. (9th Semester) |
|---|--|
| Date of Start of Classes | 26-10-2020 |
| Conduct of Mid Semester Exam | 14-12-2020 |
| Winter Vacation 21-12-2020 to 03-01-2021 | |
| Date of Suspension of Classes | 26-02-2021 |
| Schedule of Examination | 03-03-2021 |
| Display of Sessional Marks | 05-03-2021 |
| Examination Preparation up to | 05-03-2021 |
| Conduct of Final Semester Exam | 06-03-2021 |
| Semester Break 27-03-2021 to 04-04-2021 | |
| Announcement of Result (Expected) | 16-04-2021 |
| Marksheet Issuance (Expected) | 23-04-2021 |

SPRING SEMESTER

| Batch & Semester | 20-Batch (2nd Semester) 19-Batch (4th Semester) 18-Batch (6th Semester) 17-Batch (8th Semester) F16-Batch – Arch. (10th Semester) |
|---|---|
| Date of Start of Classes | 05-04-2021 |
| Conduct of Mid Semester Exam | 31-05-2021 |
| Summer Vacation 07-06-2021 to 01-08-2021 | |
| Date of Suspension of classes | 17-09-2021 |
| Schedule of Examination | 22-09-2021 |
| Display of Sessional Marks | 24-09-2021 |
| Examination Preparation up to | 24-09-2021 |
| Conduct of Final Semester Exam | 25-09-2021 |
| Semester Break 18-10-2021 to 24-10-2021 | |
| Announcement of Result (Expected) | 05-11-2021 |
| Marksheet / Transcript Issuance (Expected) | 12-11-2021 |

SUMMER SEMESTER

| | |
|--------------------------------|--------------------------|
| Registration | 17-05-2021 to 28-05-2021 |
| Date of Start of Classes | 07-06-2021 |
| Conduct of Mid Semester Exam | 03-07-2021 |
| Date of Suspension of classes | 30-07-2021 |
| Conduct of Final Semester Exam | 31-07-2021 |

The classes for the Academic Session 2021-22 (21-Batch) shall be started with effect from **Monday, October 25, 2021**.
113-08-2020-Academic Calendar for the Session 2020-21 (20-Batch) - Attachment

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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". In 2004, the Centre of Excellence in Arts & Design was established in the University. 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'.

In 2013 HEC ranked, Mehran University of Engineering and Technology as the 4th best engineering degree awarding institution in Pakistan, number one Engineering University of Sindh Province that attracts a number of students from

all around Pakistan and from foreign countries, mostly from South Asia, Middle East and North Africa.

The University has a mission to produce high quality engineering graduates with extraordinary skills to fulfill the rising demand of the industry. The University is focusing on establishing stronger linkages with the industry in order to better understand their present and future engineering requirements. As of 2016, it is ranked among the top ten institutions of higher engineering learning in Pakistan by HEC. The University offers various engineering degree programs to undergraduate, postgraduate and doctoral students.

Mehran UET has the honor of being the first Public Sector Engineering University of the country to have successfully obtained the ISO 9000 Certification, when accreditation and quality standards certification was seen as unimportant to many higher education institutes. Mehran University of Engineering and Technology is a member of Association of Commonwealth Universities of the United Kingdom.

MUET has switched its paradigm from conducting research to its commercialization. Number of research projects are filed for patent, number of student startups are started through ORIC-IEC departments. Furthermore, the University has started to organize conferences and workshops globally.



1.2. Officers of the University

Following are the main Officers of the University, responsible for overall administration, academic activities and development work in the University.

| Sr.No. | Post | Name | Phone |
|--------|---|--|-------------|
| 1. | Vice-Chancellor | Prof. Dr. Muhammad Aslam Uqaili | 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 | 0234-714005 |
| 4. | Dean, Faculty of Architecture and Civil Engineering | Prof. Dr. Khan Mohammad Brohi | 022-2771638 |
| 5. | Dean, Faculty of Electrical, Electronic & Computer Engineering | Prof. Dr. Mukhtiar Ali Unar | 022-2771558 |
| 6. | Dean, Faculty of Engineering | Prof. Dr. Khanji Harijan | 022-2771312 |
| 7. | Dean, Faculty of Science, Technology & Humanities | Prof. Dr. Aneel Kumar | 022-2771352 |
| 8. | Registrar | Prof. Dr. Abdul Waheed Umrani | 022-2771371 |
| 9. | Director Finance | Mr. Muneer A. Shaikh | 022-2771442 |
| 10. | Controller of Examinations | Mr. Khalid Feroz Channa | 022-2771631 |
| 11. | Director Admissions | Prof. Dr. Agha Faisal Habib | 022-2771704 |
| 12. | Provost (Hostels) | Prof. Ghulam Abbas Mahar | 022-2772299 |
| 13. | Director Works & Strategic Planning | Mr. Saghir Ahmed Memon | 022-2771311 |
| 14. | Director Services / Incharge Transport Section | Mr. Qazi Riaz Hassan Qureshi | 022-2109073 |
| 15. | Resident Auditor | Mr. Muhammad Ashraf Abro | 022-2772285 |
| 16. | Incharge Librarian | Mr. Azam Ali Halepoto | 022-2771169 |



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. Muhammad Hashim Jokhio
Phone: 022-2772293, Ext: 3100

Assistant Professors:

| | |
|----------------------------|------------------|
| Mr. Muhammad Hashim Jokhio | B.Arch. Pakistan |
| Mr. Moazam Ali Pathan | PGDip. Pakistan |
| Mr. Irfan Ahmed Memon | PGDip. Pakistan |
| Dr. Sabeen Qureshi | Ph.D. Malaysia |
| Ms. Raheela Laghari | M.E. Pakistan |
| Ms. Shahnaila Ansari | M.E. Pakistan |

Lecturers:

| | |
|------------------------|------------------|
| Ms. Khalida Baloch | PGDip. Pakistan |
| Ms. Fareeda Mughari | B.Arch. Pakistan |
| Mr. Abdul Waheed Memon | PGDip. Pakistan |
| Ms. Naheed Rohail | M.E. Pakistan |
| Mr. Abdul Salam Talpur | PGDip. Pakistan |
| Ms. Firdous Parveen | PGDip. Pakistan |

Studio Architect:

| | |
|----------------------------|-----------------|
| Mr. Jam Zeeshan Ali Korejo | PGDip. Pakistan |
|----------------------------|-----------------|

Lab: Supervisors:

| | |
|------------------------|------------------|
| Ms. Sania Rehman Memon | PGDip. Pakistan |
| Ms. Sabeen Shah Jilani | PGDip. 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 |
| 1ST SEMESTER | | | |
| 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 |
| 2ND SEMESTER | | | |
| 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 |
| 3RD SEMESTER | | | |
| 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 |
| 4TH SEMESTER | | | |
| 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 |
| G4Total | | 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) | 02 | 04 |
| AR 522 | Disaster Management | 00 | 05 |
| AR 523 | Professional Practice & Management | 03 | 00 |
| Total | | 04 | 10 |

2.1.5 Career Opportunities Govt. Organization + Private & Self)

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 have multimedia accessories. 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 moved on 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 industry 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 thesis project assigned to them. The thesis projects may be specific to a particular branch of Civil Engineering like Structural Engineering, Geotechnical Engineering, Irrigation Engineering, Highway Engineering and Construction Management 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 involve themselves with various Civil Engineering projects in the form of internship to the organizations such as WAPDA, NESPAK, NHA, C&W Department, Irrigation Department, etc. These internships help them to gain practical engineering knowledge.

The Department of Civil Engineering has a well-organized student's based society. 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.), Master of Philosophy (M.Phil.) 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 Department:

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. Our graduates should solve civil engineering problems faced by the industry by utilizing their theoretical, technical and professional knowledge.
2. Our graduates should function in team-oriented activities considering the societal, environmental and economic impacts.
3. Our graduates should continue professional growth through ethical, moral and learning attitude.

2.2.2 The Faculty

Chairman of the Department:

Dr. Rizwan Ali Memon
Phone: 022-2772254-72, Ext. 7100

Professors:

| | |
|---------------------------|--------------------------|
| Dr. Tauha Hussain Ali | Ph.D. Australia |
| Dr. Abdul Sami Qureshi | Ph.D. Germany |
| Dr. Aneel Kumar | Ph.D. Japan |
| Dr. Rizwan Ali Memon | Ph.D. Pakistan |
| Dr. Khalifa Qasim Laghari | Ph.D. Pakistan |
| Dr. Nafees Ahmed Memon | Ph.D. Romania |
| Dr. Safi Muhammad Kori | Ph.D. Pakistan |
| Dr. Zubair Ahmed Memon | Ph.D. Malaysia (On Lien) |
| Dr. Ashfaq Ahmed Memon | Ph.D. Pakistan |
| Dr. Agha Faisal Habib | Ph.D. United Kingdom |
| Dr. Zaheer Ahmed Almani | Ph.D. United Kingdom |
| Dr. Pervez Shaikh | Ph.D. Pakistan |
| Dr. Fareed Ahmed Memon | Ph.D. Malaysia |
| Dr. Naeem Aziz Memon | Ph.D. United Kingdom |

Associate Professors:

| | |
|-------------------------|----------------|
| Dr. Ashfaq Ahmed Pathan | Ph.D. Pakistan |
|-------------------------|----------------|

Assistant Professors:

| | |
|-------------------------|---------------|
| Mr. Jawaid Kamal Ansari | M.E. 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 | M.E. Pakistan (On Study Leave Abroad) |
| Mr. Ali Raza Khoso | M.E. Pakistan (On Study Leave Abroad) |
| Mr. Fahad Ali Shaikh | M.E. Pakistan |
| Mr. Fida Hussain Siddiqui | M.E. Pakistan (On Study Leave Abroad) |
| Mr. Anees Raja | M.E. Pakistan (On Study Leave Abroad) |
| Mr. M. Rehan Hakro | M.E. Malaysia |
| Mr. Lal Chand | M.E. Pakistan |
| Mr. Shankar Lal Meghwar | M.E. Pakistan (On Study Leave Abroad) |
| Mr. Muhammad Ali Moriyani | B.E. Pakistan |
| Mr. Awais Ahmed Mirza | B.E. Pakistan |
| Mr. Anees Ahmed Vighio | M.E. Pakistan |
| Mr. Manoj Kumar Sutehar | M.E. Pakistan |
| Mr. Rabinder Kumar Lohano | M.E. Malaysia |
| Mr. Hafiz Usama Imad | M.E. Pakistan |
| Mr. Abdul Qudoos Malano | M.E. Pakistan |
| Mr. Izat Ali Sahito | M.E. Pakistan |

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 Courses

| Course Code | Subject Name | 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 Name | Credit Hours | |
|------------------------|---------------------------|--------------|-----------|
| | | Theory | Practical |
| Second Semester | | | |
| CE111 | Surveying-I | 03 | 01 |
| MTH108 | Applied Calculus | 03 | 00 |
| SS111/SS104 | Engineering Mechanics | 02 | 00 |
| PS106 | Pakistan Studies | 02 | 00 |
| CE121 | Civil Engineering Drawing | 02 | 01 |
| CE125 | Engineering Geology | 03 | 01 |
| Total | | 15 | 03 |

| Course Code | Subject Name | Credit Hours | |
|-----------------------|---|--------------|-----------|
| | | Theory | Practical |
| Third Semester | | | |
| CE202 | Surveying-II | 03 | 01 |
| CE206 | Transportation Engineering | 03 | 00 |
| CE211 | Strength Materials-I | 03 | 00 |
| MTH204 | Differential Equations, Fourier Series and Laplace Transforms | 03 | 00 |
| CE226 | Fluids Mechanics and Hydraulics | 03 | 01 |
| Total | | 15 | 02 |

| Course Code | Subject Name | Credit Hours | |
|------------------------|---|--------------|-----------|
| | | Theory | Practical |
| Fourth Semester | | | |
| CE221 | Theory of Structures | 03 | 00 |
| CE240 | Applied Hydraulics | 03 | 01 |
| CE231 | Construction Engineering | 03 | 00 |
| CE250 | Strength of Materials- II | 03 | 00 |
| MTH206 | Complex Analysis, Statistical Methods and Probability | 03 | 00 |
| CE246 | Architectural and Town Planning | 02 | 00 |
| Total | | 17 | 01 |

| Course Code | Subject Name | 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 |
| CE350 | Environmental Engineering –I | 02 | 01 |
| CE355 | Project Management | 02 | 00 |
| Total | | 13 | 03 |

| Course Code | Subject Name | Credit Hours | |
|-----------------------|--------------------------------------|--------------|-----------|
| | | Theory | Practical |
| Sixth Semester | | | |
| CE375 | Hydrology | 03 | 01 |
| CE326 | Soil Mechanics | 03 | 00 |
| CE336 | Reinforced and Pre-Stressed Concrete | 03 | 00 |
| CE316 | Steel Structures | 03 | 00 |
| CE341 | Quantity Surveying and Estimation | 03 | 01 |
| Total | | 14 | 03 |

| Course Code | Subject Name | Credit Hours | |
|-------------------------|---------------------------------|--------------|-----------|
| | | Theory | Practical |
| Seventh Semester | | | |
| CE406 | Structural Design and Drawing | 03 | 01 |
| CE411 | Geotechnical Engineering | 03 | 01 |
| CE416 | Irrigation Engineering | 03 | 01 |
| CE401 | Highway and Traffic Engineering | 03 | 01 |
| CE498 | Project / Thesis-I | 00 | 03 |
| Total | | 12 | 07 |

| Course Code | Subject Name | Credit Hours | |
|-----------------------|------------------------------------|--------------|-----------|
| | | Theory | Practical |
| Eight Semester | | | |
| CE426 | Foundation Engineering | 03 | 00 |
| CE431 | Environmental Engineering-II | 03 | 00 |
| CE436 | Construction Planning & Management | 03 | 00 |
| CE441 | Drainage Engineering | 02 | 00 |
| CE499 | Project / Thesis-II | 00 | 03 |
| Total | | 11 | 03 |

2.2.5 Career Opportunities

The BE program at MUET, Jamshoro provides a clear route to a professional career in 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 skills 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 from 13-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 F-2016, 2017, 2018 and 2019 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:

Dr. Imtiaz Ahmed Chandio
Tel: 022 2772294, Ext: 7200

Associate Professors:

| | |
|------------------------------|----------------|
| Dr. Imtiaz Ahmed Chandio | Ph.D. Malaysia |
| Dr. Mir Aftab Hussain Talpur | Ph.D. Malaysia |

Assistant Professors:

| | |
|------------------------|-----------------|
| Dr. Saima Kalwar | Ph.D. Malaysia |
| Mr. Fahad Ahmed Shaikh | M.CRP. Pakistan |
| Dr. Irfan Ahmed Memon | Ph.D. Malaysia |

Lecturers:

| | |
|----------------------------|-----------------------------------|
| Mr. Noman Sahito | M.CRP. Pakistan On Study Leave |
| Mr. Naveed Agro | B.CRP. Pakistan On Study Leave |
| Mr. Taufique Ahmed Qureshi | B.CRP. Pakistan On Study Leave |
| Mr. Muhammad Yousif Mangi | M.CRP. Pakistan On Study Leave |
| Mr. Ubedullah Soomro | B.CRP. Pakistan |
| Mr. Shahbaz Khan | M.CRP. Pakistan |

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 Courses

| Course Code | Subject Name | Credit Hours | |
|-----------------------|--------------------------------|--------------|-----------|
| | | Theory | Practical |
| First Semester | | | |
| CRP111 | Introduction to Planning | 03 | 01 |
| CRP112 | Technical Drawing | 02 | 02 |
| MATH110 | Calculus & Statistical Methods | 03 | 00 |
| SS111 | Islamic Studies / Ethics | 02 | 00 |
| PS106 | Pakistan Studies | 02 | 00 |
| AR154 | Model Making | 00 | 02 |
| Total | | 12 | 05 |

| Course Code | Subject Name | Credit Hours | |
|------------------------|------------------------------------|--------------|-----------|
| | | Theory | Practical |
| Second Semester | | | |
| CRP121 | Socio-economic Aspects of Planning | 03 | 00 |
| CRP122 | Architectural Design for Planners | 02 | 02 |
| CE120 | Surveying-I | 03 | 01 |
| MATH 114 | Planning Data Analysis | 03 | 00 |
| ENG 111 | Functional English | 03 | 00 |
| Total | | 14 | 03 |

| Course Code | Subject Name | Credit Hours | |
|-----------------------|---------------------------------------|--------------|-----------|
| | | Theory | Practical |
| Third Semester | | | |
| CRP 211 | History of Urban Planning | 03 | 00 |
| CRP212 | Transportation Engineering | 03 | 01 |
| CRP213 | Construction Technology | 03 | 01 |
| CE 201 | Surveying-II | 03 | 01 |
| CRP214 | Communication Skills & Report Writing | 02 | 00 |
| Total | | 14 | 03 |

| Course Code | Subject Name | Credit Hours | |
|------------------------|--------------------------|--------------|-----------|
| | | Theory | Practical |
| Fourth Semester | | | |
| CRP 221 | Planning Law | 03 | 00 |
| CRP 222 | Housing | 03 | 00 |
| CRP223 | Transportation Planning | 03 | 01 |
| CRP224 | Mapping & Remote Sensing | 03 | 01 |
| CRP 225 | Computer Aided Design | 02 | 01 |
| Total | | 14 | 03 |

| Course Code | Subject Name | Credit Hours | |
|-----------------------|-----------------------------------|--------------|-----------|
| | | Theory | Practical |
| Fifth Semester | | | |
| CRP 311 | Urban Renewal | 02 | 01 |
| CRP 312 | Planning Techniques | 03 | 00 |
| CRP313 | Site Planning and Urban Design | 03 | 01 |
| CRP314 | Environmental Engineering | 03 | 01 |
| CRP315 | Information & Database Management | 02 | 01 |
| Total | | 13 | 04 |

| Course Code | Subject Name | Credit Hours | |
|-----------------------|---|--------------|-----------|
| | | Theory | Practical |
| Sixth Semester | | | |
| CRP 321 | Research Methods | 03 | 00 |
| CRP 322 | Planning of New Towns | 03 | 01 |
| CRP 323 | Rural Planning | 02 | 01 |
| CRP 324 | Environmental Planning & Management | 03 | 01 |
| CRP 325 | Introduction to Geographical Information System | 02 | 01 |
| Total | | 13 | 04 |

| Course Code | Subject Name | Credit Hours | |
|-------------------------|---------------------------------|--------------|-----------|
| | | Theory | Practical |
| Seventh Semester | | | |
| CRP 411 | Master Planning-I | 02 | 01 |
| CRP 412 | Landuse & Building Control | 02 | 01 |
| CRP 413 | Project Planning and Management | 03 | 01 |
| CRP 414 | District & Regional Planning | 03 | 01 |
| CRP 415 | Community Development | 02 | 01 |
| CRP 499 | Thesis/Project* | 00 | 03 |
| Total | | 12 | 05 |

| Course Code | Subject Name | Credit Hours | |
|-----------------------|-------------------------------|--------------|-----------|
| | | Theory | Practical |
| Eight Semester | | | |
| CRP 421 | Master Planning-II | 03 | 02 |
| CRP 422 | Estate Management | 03 | 00 |
| CRP 423 | Finance Planning & Management | 03 | 00 |
| CRP 424 | Planning Practice | 02 | 00 |
| CRP 425 | Thesis/Project | 00 | 03 |
| Total | | 11 | 08 |

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 with an aim of creating new ideas and finding innovative solutions related to local 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 task to implement environmental standards that will provide the need for large number of qualified experts in the field of Environmental Engineering. The scope of Environmental Engineer goes beyond the community and regional levels to global level.

The Bachelor of Engineering (B.E.) program is based on sound theoretical knowledge and thorough practical training supported by field visits and industrial training. The syllabus of B.E degree program includes variety of subjects related within the scope of environmental engineering. The faculty members of Institute of Environmental Engineering &

Management (IEEM) are highly qualified having PhD and M.E in the relevant field.

a. Mission of the Program:

This program is aimed to impart high quality education with the vision of developing professionals to provide innovative solutions to the engineering challenges of future and nurture personal growth skills as creative and entrepreneurial minds along with professional ethics to begin their career as successful engineers, researchers, consultants, regulators and managers.

b. 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 3 to 5 years of graduation, our students will be:

1. Apply engineering knowledge to design, build and improve environmental engineering based systems to address the technical and socio-economic problems.
2. Demonstrate their professional and societal obligation by promoting the safety, occupational health, and welfare of the public and environment through professional practice and civic leadership.
3. Work effectively as a team member or lead multidisciplinary teams to serve the community as ethical and responsible professionals and in addition, engage in profession development for continual improvement through certification.

2.4.2 The Faculty

Director of the Institute:

Dr. Sheeraz Ahmed Memon
Phone: 022-2772253, Ext:7300

Professors:

| | |
|-------------------------|-----------------------|
| Dr. Khan Muhammad Brohi | Ph.D. Japan |
| Dr. Rasool Bux Mahar | Ph.D. China (On lien) |

Associate Professors:

| | |
|--------------------------|----------------|
| Dr. Abdul Razaque Sahito | Ph.D. Pakistan |
| Dr. Sheeraz Ahmed Memon | Ph.D. Korea |

Assistant Professors:

| | |
|--------------------------|----------------|
| Dr. Muhammad Safar Korai | Ph.D. Pakistan |
| Mr. Azizullah Channa | M.E. Pakistan |
| | On Study Leave |
| Ms. Maryam | M.E. Pakistan |

Lecturers:

| | |
|---------------------------|--------------------------|
| Engr. Sajid Hussain Mangi | M.E. Pakistan |
| Engr. Barkatullah Kandhro | M.E. Pakistan (Contract) |
| Engr. Kundan Kumar | M.E. Pakistan (Contract) |

2.4.3 Laboratory Facilities

The department is also equipped with the laboratories are listed below, having 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 Courses

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 1st Semester | | | |
| EE101 | Introduction to Environmental Engineering | 03 | 01 |
| CS146 | Introduction to Computing and Programming | 02 | 02 |
| CE137 | Surveying | 03 | 00 |
| ENG101 | Functional English | 02 | 00 |
| EE110 | Environmental Physics | 02 | 00 |
| Total | | 13 | 02 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 2nd Semester | | | |
| IS111/SS104 | Socio-economic Aspects of Planning | 2 | 0 |
| PS106 | Islamic Studies/Ethics | 2 | 0 |
| MTH108 | Pakistan Studies | 3 | 0 |
| EE121 | Applied Calculus | 2 | 1 |
| CE116 | Engineering Mechanics | 3 | 1 |
| EE131 | Introduction to Microbiology | 2 | 1 |
| Total | | 14 | 03 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 3rd Semester | | | |
| EE204 | Ecological Management | 2 | 0 |
| CE277 | Engineering Drawing Practices | 2 | 1 |
| MTH211 | Linear Algebra & Analytical Geometry | 3 | 0 |
| CE263 | Fluid Mechanics | 2 | 1 |
| MT250 | Engineering Materials and Environment | 2 | 1 |
| EE203 | Water Supply Engineering | 3 | 1 |
| Total | | 14 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 4th Semester | | | |
| EE242 | Environmental Economics | 2 | 0 |
| ME276 | Applied Thermodynamics | 3 | 1 |
| MTH202 | Differential Equations & Fourier Series | 3 | 0 |
| CE276 | Computer Aided Design (CAD) | 2 | 1 |
| EE272 | GIS & Remote Sensing | 2 | 1 |
| EE233 | Wastewater Engineering | 3 | 1 |
| Total | | 14 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| ENG310 | Communication Skills & Technical Writing | 3 | 0 |
| MTH319 | Numerical Analysis | 3 | 1 |
| EL301 | Electrical Technology | 2 | 1 |
| CE372 | Water Resources Engineering and Management | 3 | 1 |
| EE331 | Environmental Biotechnology | 2 | 1 |
| Total | | 13 | 04 |

| 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 |
| EE323 | Entrepreneurship | 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 | | | |
| CE461 | Soil Mechanics for Environmental Engineers | 3 | 1 |
| EE414 | Modelling of Environmental Systems | 3 | 1 |
| EE494 | Natural Resources Management | 3 | 0 |
| CE471 | Project Planning & Management | 3 | 0 |
| EE434 | Environmental Management System & Standards | 2 | 0 |
| EE499 | Design Project - I / Thesis - I | 0 | 3 |
| Total | | 14 | 05 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| EE465 | Hazardous Waste Risk Assessment & Management | 3 | 0 |
| EE424 | Health, Safety & Environment | 3 | 0 |
| EE454 | Environmental Impact Assessment | 3 | 0 |
| EE484 | Cleaner Production Techniques | 2 | 1 |
| EE404 | Professional Ethics | 2 | 1 |
| EE499 | Design Project - II / Thesis - II | 0 | 3 |
| Total | | 13 | 04 |

2.4.5 Career Opportunities

Environmental Engineering undergraduate and postgraduate programs offer you opportunities to work in any aspect of environmental protection. The major areas include air pollution control; hazardous waste management; toxic materials control; water supply and wastewater treatment; stormwater management; solid waste disposal; industrial hygiene; radiation protection; health; safety and environment (HSE), environmental impact assessment (EIA); cleaner production; natural resource management; public health and land pollution control. Environmental engineers are also leaders of the development, planning, and implementation of 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 exceptional hands-on and pragmatic approaches by arranging internships abroad such as Turkey, China, to help students become aware of environmental problems encompassed by the world.

Environmental Engineering provides opportunities as to 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.





FACULTY OF ELECTRICAL, ELECTRONICS AND COMPUTER ENGINEERING



3.1 Department of Biomedical Engineering

3.1.1 The Department

Mehran university of Engineering and technology 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 the newly built beautiful edifice 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, Diagnostics, Radio and laser surgery, Biotechnology, Nano technology, Computer Science, Electronics, Telemedicine, and other related domains.

The Department aims to produce engineers who can serve as drug designers, prosthetic device engineers, biomedical equipment designers, maintenance engineers, sales managers, after-sale service managers, telemedicine engineers and researchers.

The Department of Biomedical Engineering at MUET also commenced its journey towards OBE from October 2017, with effect from the 1st semester of 17BM. The following five Program Educational Objectives (PEOs) of B.E. Biomedical Engineering degree program are presented below:

To produce engineers with the capabilities of:

- i. working as Prosthetic Product Designers
- ii. working as Biomedical Equipment Designer
- iii. working as Medical Diagnostic Equipment Procurement Experts / Sales Promotion Managers
- iv. working as Telemedicine and E-health Experts
- v. pursuing higher education/research careers in Biomedical and E-health Engineering related fields

The Department of Biomedical Engineering has all the necessary infrastructure to support its vibrant academic, research and extra-curricular activities, including spacious and airy edifice, seminar library, adequate laboratory

equipment, efficient administrative staff, free internet (both Ethernet and WiFi), and the printing and scanning facilities.

Students of the Department are trained in the industry, hospitals and other national and international healthcare institutions, through study visits and internships. 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 with out of the box solutions to address the problems of the suffering humanity. The Department has also signed the Memoranda of Understanding with Atomic Energy Commission of Pakistan, Liaquat University of Medical and Health Sciences Jamshoro, Hashmani Hospital Karachi along with many others (<https://www.mueta.edu.pk/departments/biomedical-engineering/industrial-linkages/mous>).

Currently, the Department of Biomedical Engineering is accredited under Outcome Based Education system with the Pakistan Engineering Council. We have devised Program Educational Objectives, Course Learning Outcomes, mapped them to the Program Learning Outcomes, worked out rubrics for OBE assessment, worked out key performance indicators, and have prepared the Self-Assessment Report.

3.1.2 The Faculty

Chairman of the Department:

Prof. Dr. Ahsan Ahmad Ursani
Phone: 022-2772279

Professors:

Dr. Ahsan Ahmad Ursani Ph.D. France

Associate Professors:

Dr. Syed Amjad Ali Shah Ph.D. China
Dr. Abdul Qadir Ansari Ph.D. Pakistan

Assistant Professors:

Engr. N.P. Chowdhry M.S. United Kingdom
Dr. Muhammad Arif Ph.D. United Kingdom
On Study Leave

Ms. Rabia Chandio M.E. Pakistan
 Dr. Maheen Mahwish Surahio Ph.D. China

Lecturers:

Mr. Syed Faisal Ali B.E. Pakistan
 Mr. Salman Afridi M.E. Pakistan
 On Study Leave
 Mr. M. Aamir Panhwar M.E. Pakistan
 On Study Leave
 Ms. Kandeel Fatima M.E. Pakistan

3.13 Laboratory Facilities

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

1. Biomedical Instrumentation lab
2. Biomedical Sciences Lab
3. Biomedical Computing Lab
4. Biomedical Engineering lab
5. Telemedicine and Research Lab

3.1.4 Courses

| Course Code | Subject Name | Credit Hours | |
|----------------|-----------------------------------|--------------|-----------|
| 1st Semester | | Theory | Practical |
| 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 | Subject Name | Credit Hours | |
|--------------|---------------------------------|--------------|-----------|
| 2nd Semester | | Theory | Practical |
| 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 | Subject Name | Credit Hours | |
|--------------|--|--------------|-----------|
| 3rd Semester | | Theory | Practical |
| 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 |
| IS111/ SS104 | Islamic Studies / Ethics | 2 | 0 |
| Total | | 14 | 4 |

| Course Code | Subject Name | Credit Hours | |
|--------------|----------------------------|--------------|-----------|
| 4th Semester | | Theory | Practical |
| 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 | Subject Name | Credit Hours | |
|---------------------|------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| 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 | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| 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 | Subject Name | Credit Hours | |
|---------------------|-------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| BM401 | Digital Signal and Image Processing | 3 | 1 |
| BM411 | Biomechanics | 3 | 1 |
| ES432 | Control Systems | 3 | 1 |
| BM421 | Modeling and Simulation | 2 | 1 |
| BM499 | BM Engineering Project | 0 | 3 |
| Total | | 11 | 7 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| 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 | 0 | 3 |
| BM490 | Internship | 0 | 0 |
| Total | | 11 | 4 |

3.1.5 Career Opportunities

Biomedical Engineering is a broad and multidisciplinary field that encompasses industry ranging from Pharmaceuticals to Genetics, and from Diagnostics to Rehabilitation. Therefore, its 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.

There is a growing demand for biomedical engineers in Pakistan. Biomedical engineers who monitor and maintain the databases of electronic patient records, medical instrumentation and work with physicians to adapt instrumentation for the specific needs of the physician and hospitals are most wanted in hospitals in Pakistan. Biomedical engineers who develop hardware, software, computer adaptations and provide cognitive aids to assist patients with memory impairment are also sought after. Our graduates are serving at national and international organizations of high repute here and abroad such as National Specialty Alloys Inc. USA, Siemens, Almosawiq Al-Arabia SA, Al-Sharq Hospital, Fujairah Hospital Dubai, Al-Noor Hospital Bahrain, and many others.

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.

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.

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 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:

Department of Computer Systems Engineering (CSE) permeates all modern endeavors in academia, industry and government, and this role will continue to grow. Through education and research, the department of CSE will be recognized universally as a promoter of the essence and diversity of computing in society.

Mission of the Department:

The mission of the department of Computer Systems Engineering is to educate undergraduate and graduate majors as well as the broader campus community in the fundamental concepts of the computing disciplines, to create and disseminate computing knowledge and technology, and to use our expertise in computing to help society solve problems.

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.

1. To produce graduates having strong computer engineering knowledge leading towards the development of technical competency and to participate in professional engineering practices with appropriate consideration for health and safety, environmental, legal, social and cultural aspects
2. To prepare graduates to attain success in technical careers and demonstrate professional skills in the field of computer systems engineering.

3. To prepare graduates to become responsible citizens with high ethical and professional standards as well as awareness of the societal impact of computer and information technologies.

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

Prof. Dr. Shahnawaz Talpur (In charge)
Phone: 92- 2772250-73, Ext. 4201

Meritorious Professors:

Dr. Mukhtiar Ali Unar Ph.D. United Kingdom

Professor Emeritus:

Dr. A. Q. K. Rajput Ph.D. USA

Professors:

Dr. T.J. Saifullah Khanzada Ph.D. Germany (Lien)

Associate Professors:

Dr. Sheeraz Memon Ph.D. Australia
On Ex-Pakistan leave
Dr. Shahnawaz Talpur Ph.D. China
Mr. M. Moazzam Jawaid Ph.D. United Kingdom

Assistant Professors:

Mr. Naveed Ahmed Jaffari M.E. Pakistan
Mr. Arbab Ali Samejo M.E. Pakistan
Ms. Zartasha Baloch M.E. Pakistan

Mr. Rizwan Badar Baloch
Dr. Adnan Ashraf
Dr. Sammer Zai
Dr. M. Ahsan Ansari
Mr. Ali Asghar Manjotho

Dr. Bushra Naz
Dr. Sanam Narejo
Dr. Irfan Ali Bhacho

Lecturers:

Mr. Salahuddin Jokhio
Mr. Fawad Ali Mangi

M.E. Pakistan
Ph.D. Pakistan
Ph.D. South Korea
Ph.D. South Korea
M.E. Pakistan
On Study Leave
Ph.D. China
Ph.D. Italy
P.h.D. South Korea

M.E. Pakistan
On Study Leave
M.E. Pakistan
On Study Leave

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 Courses

| Course Code | Subject Name | Credit Hours | |
|---------------------|------------------------------|--------------|-----------|
| | | Theory | Practical |
| 1st Semester | | | |
| CS-101 | Computer Fundamentals | 3 | 1 |
| EL-101 | Basic Electrical Engineering | 3 | 1 |
| ES-121 | Electronic Engineering | 3 | 1 |
| ENG-101 | Functional English | 3 | 0 |
| MTH-102 | Applied Calculus | 3 | 0 |
| Total | | 15 | 03 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 2nd Semester | | | |
| CS-151 | Computer Programming | 3 | 1 |
| CS-152 | Digital Logic and Design | 3 | 1 |
| ENG-102 | Communication Skills | 2 | 0 |
| MTH-112 | Linear Algebra and Analytical Geometry | 3 | 0 |
| ISS-111/SS-104 | Islamic Studies/Ethics | 2 | 0 |
| PS-106 | Pakistan Studies | 2 | 0 |
| Total | | 15 | 02 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 3rd Semester | | | |
| CS-201 | Computer Architecture and Assembly Programming | 3 | 1 |
| CS-202 | Object Oriented Programming | 3 | 1 |
| CS-204 | Computer Graphics | 2 | 1 |
| EL-103 | Electrical Circuits | 3 | 1 |
| MTH-224 | Differential Equations | 3 | 0 |
| PS-106 | Pakistan Studies | 2 | 0 |
| Total | | 14 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 4th Semester | | | |
| CS-251 | Data Structure and Algorithm Analysis | 3 | 1 |
| CS-252 | Microprocessors & Interfacing Techniques | 3 | 1 |
| CS-254 | Discrete Structures | 2 | 0 |
| CS-255 | Database Management Systems | 3 | 1 |
| MTH-226 | Fourier Series and Transforms | 2 | 0 |
| Total | | 13 | 03 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| CS-309 | Signals and Systems | 3 | 1 |
| CS-302 | Operating Systems Design Concepts | 3 | 1 |
| CS-305 | Technical Report Writing | 3 | 0 |
| CS-308 | Engineering Economics and Project Management | 3 | 0 |
| MTH-311 | Statistics and Probability | 3 | 0 |
| Total | | 15 | 02 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--------------------------------|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| CS-351 | Communication Systems | 3 | 1 |
| CS-354 | Embedded Systems | 2 | 1 |
| CS-355 | Professional Ethics | 2 | 0 |
| CS-356 | Mobile Application Development | 2 | 1 |
| CS-370 | Web Engineering | 3 | 1 |
| Total | | 12 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|-------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| CS-401 | Digital Image Processing | 3 | 1 |
| CS-403 | Computer Communication and Networks | 3 | 1 |
| CS-404 | Software Engineering | 3 | 1 |
| CS-499 | Computer Engineering Project* | 0 | 3 |
| Total | | 09 | 06 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|-----------------------------------|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| CS-451 | Mobile and Wireless Communication | 2 | 1 |
| CS-452 | Artificial Intelligence | 3 | 1 |
| CS-453 | Entrepreneurship and Leadership | 2 | 0 |
| CS-454 | Data Science and Analytics | 3 | 1 |
| CS-499 | Computer Engineering Project | 0 | 3 |
| Total | | 10 | 06 |

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. 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.



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 25 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. Currently 557 undergraduate, 104 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
Ph. 022-2771351

Professors:

| | |
|-----------------------------|----------------------|
| Dr. Muhammad Aslam Uqaili | Ph.D. United Kingdom |
| Dr. Ashfaque Ahmed Hashmani | Ph.D. Germany |
| Dr. Abdul Sattar Larik | Ph.D. Pakistan |
| Dr. Zubair Ahmed Memon | Ph.D. Pakistan |
| Dr. Syed Asif Ali Shah | Ph.D. Austria |
| Dr. Mukhtiar Ahmed Mahar | Ph.D. Pakistan |
| Dr. Ali Asghar Memon | Ph.D. United Kingdom |

Associate Professors:

| | |
|---------------------------|----------------|
| Dr. Amir Mahmood Soomro | Ph.D. China |
| Dr. Anwar Ali Sahito | Ph.D. Pakistan |
| Dr. Nayyar Hussain Mirjat | Ph.D. Pakistan |
| Dr. Faheemullah Shaikh | Ph.D. China |
| Dr. Mahesh Kumar Rathi | Ph.D. Malaysia |

Assistant Professors:

| | |
|----------------------------|-------------------------|
| Mr. Anwar Ahmed Memon | M.E. Pakistan |
| Mr. Noor Nabi Shaikh | B.E. Pakistan |
| Mrs. Mokhi Maan | M.E. Pakistan |
| | On Study Leave |
| Mr. Muhammad Rashid Memon | M.E. Pakistan |
| Mr. Mansoor Ahmed Soomro | M.E. Pakistan |
| | On Study Leave |
| Mr. Shah Murad Tunio | M.E. Pakistan (On Lien) |
| Mr. Abdul Jabbar Memon | M.E. Pakistan |
| Dr. Abdul Hakeem Memon | Ph.D. China |
| 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 |
| Mr. Zohaib Ahmed Leghari | M.E. Pakistan |
| | On Study Leave |
| Mr. Faheem Shafeeque Channar | M.E. Pakistan |
| Mr. Shoaib Shaikh | M.E. Pakistan |
| Mr. Mustafa Memon | M.E. Pakistan |
| Ms. Rabail 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 Courses

| Course Code | Subject Name | Credit Hours | |
|--------------|---|--------------|-----------|
| 1st Semester | | Theory | Practical |
| 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 | 4 |

| Course Code | Subject Name | Credit Hours | |
|----------------|--|--------------|-----------|
| 2nd Semester | | Theory | Practical |
| 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 | 3 |

| Course Code | Subject Name | Credit Hours | |
|--------------|---|--------------|-----------|
| 3rd Semester | | 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 and Fourier series | 3 | 0 |
| ME-271 | Applied Thermodynamics | 3 | 0 |
| Total | | 15 | 2 |

| Course Code | Subject Name | Credit Hours | |
|--------------|----------------------------------|--------------|-----------|
| 4th Semester | | 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 | 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-499 | 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 |
| EL-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 Factor
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.

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, Microprocessors & Interfacing, Automation and Robotics, Analog & Digital Communication, Optoelectronics, Wired & Wireless Communications, Signal Processing, Industrial Electronics, Integrated Electronics, Instrumentation & Control, Embedded System, Sequential Circuit Design, Laser & Fiber Optics, Microwave Engineering, FPGA, Electromagnetic Fields, Computer Communication & Networking, Mechatronic Applications, Advanced Communication Systems, 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 Erasmus Mundus Program and US Fulbright 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 IEEE student seminar, A.Q. Khan Software at national level software competition held annually on and around campus. The department has centrally air-conditioned seminar library named after the late Professor M.D. Makhdoom.

Vision of the 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 the 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 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 DBoS, FBoS and ACM. 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 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.

3.4.2 The Faculty

Chairperson of the Department:

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

Emeritus Professors:

Dr. B.S Chowdhry Ph.D. United Kingdom

Professors:

Dr. Wajiha Shah Ph.D. Austria
Dr. Arbab Nighat Kalhoro Ph.D. China

Associate Professors:

Dr. Tayab Din Memon Ph.D. Australia
(Chairman- On Ex-Pakistan Leave)
Dr. Irfan Ahmed Halepoto Ph.D. Pakistan

Dr. Farzana Rauf Abro Ph.D. Pakistan
Dr. Farida Memon Ph.D. Pakistan
Dr. Attiya Baqai Ph.D. Pakistan

Assistant Professors:

Mr. Tufail Ahmed Waseer M.E. Pakistan
Dr. Khalil-ur-Rehman Dayo Ph.D. Pakistan
Mr. Mehboob Khuwaja M.E. Pakistan
Ms. Kehkashan Asma M.E. Pakistan
Mr. Kamran Kazi M.E. Pakistan
Ms. Saba Baloch

Ms. Shakila Memon On Study Leave
Ms. Yasmeen Naz Panhwar M.E. Pakistan

Mr. Khuhed Memon On Study Leave
Mr. M. Zaigham Abass Shah M.E. Singapore

Mr. Aamir Ali Patoli On Study Leave
Ms. Sara Qadeer Rajput M.E. Pakistan
Mr. Mansoor Ali Teevno M.E. Pakistan
Dr. Shoaib Rehman Soomro Ph.D. Turkey

Lecturers:

Mr. Qurban Ali Memon M.E. Pakistan
Engr. Qudsia Memon M.E. Pakistan
Engr. Komal Khuwaja M.E. Pakistan
Engr. Bharat Lal M.E. Pakistan

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
- Embedded Systems 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 due practical experience, provide ample job opportunities to our graduates in both public and private sector organizations, national & multinational companies. There is a huge job market of Electronic Engineers in Middle East, Europe, USA and Canada.

3.4.4 Courses

| Course Code | | Subject Name | Credit Hours | |
|--------------|--|---------------------------|--------------|-----------|
| 1st Semester | | | Theory | Practical |
| ENG 101 | | 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 | | Subject Name | Credit Hours | |
|--------------|--|--------------------------------------|--------------|-----------|
| 2nd Semester | | | Theory | Practical |
| MTH 112 | | Linear Algebra & Analytical Geometry | 3 | 0 |
| CS113 | | Computer Programming | 2 | 1 |
| ES 112 | | Basic Electronics | 3 | 1 |
| EL 107 | | Electrical Circuits | 3 | 1 |
| PS 106 | | Pakistan Studies | 2 | 0 |
| IS111/SS 104 | | Islamic Studies/Ethics | 2 | 0 |
| Total | | | 15 | 3 |

| Course Code | | Subject Name | Credit Hours | |
|--------------|--|---|--------------|-----------|
| 3rd Semester | | | Theory | Practical |
| 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 |

| Course Code | | Subject Name | Credit Hours | |
|--------------|--|--------------------------------|--------------|-----------|
| 4th Semester | | | Theory | Practical |
| ES 243 | | Electromagnetic Fields | 3 | 0 |
| ES253 | | Integrated Electronics | 3 | 1 |
| EL202 | | Electrical Machines | 2 | 1 |
| MTH 213 | | Complex Variables & Transforms | 3 | 0 |
| ENG201 | | Communication Skills | 2 | 0 |
| Total | | | 13 | 2 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|----------------------------------|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| ES 304 | Signals & Systems | 3 | 1 |
| ES 314 | Introduction to Embedded Systems | 3 | 1 |
| SS338 | Sociology for Engineers | 2 | 0 |
| ES 319 | Power Electronics | 3 | 1 |
| MTH 310 | Numerical Methods | 3 | 1 |
| Total | | 14 | 2 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--------------------------------|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| TL 385 | Communication Systems | 3 | 1 |
| ES 353 | Control System | 3 | 1 |
| ES 324 | Probability and Random Signals | 3 | 0 |
| ES 384 | FPGA-Based System Design | 3 | 1 |
| TL 397 | Optoelectronics | 2 | 1 |
| Total | | 14 | 4 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| 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 | 6 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|-------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| SS411 | 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 workshops in routine e.g. "Interviewing Skills", "Resume Writing", "Effective Job Hunting" and "Study Abroad".

With acquired educational and technical skill set, an Electronic engineer can find a competitive position in well reputed public and private sector organizations for last several years. Highly recognized organizations such as SUPARCO, KE, Anglo Pakistan, PTCL, etc. arranges on campus recruitment test hiring candidates straightaway.



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 Industrial Advisory Board and have been approved through statutory bodies DBoS, FBoS and ACM respectively. The PEOs of B.E. Software Engineering degree program are:

PEO 1 Engineering Knowledge: A graduate who performs his/her professional role based on acquired fundamental engineering knowledge and analytical skills.

PEO 2 Ethical and Societal Responsibilities: A graduate who adheres to professional responsibilities with societal aspects and ethical conduct in multicultural environment with continual improvement.

PEO 3 Leadership Qualities: A graduate who works effectively as a team lead or team member in challenging ventures.

PEO 4 Communication Skills: A graduate who conveys technical and managerial information efficiently in oral and written communication.

3.5.5 The Faculty

Chairman of the Department:

Prof. Dr. Naeem Ahmed Mahoto
Ph. 022-2772255, Ext. 6900

Associate Professors:

| | |
|-------------------------|----------------------|
| Dr. Sania Bhatti | Ph.D. United Kingdom |
| Dr. Naeem Ahmed Mahoto | Ph.D. Italy |
| Dr. Mohsin Ali Memon | Ph.D. Japan |
| Dr. Isma Farah Siddiqui | Ph.D. South Korea |
| Dr. Qasim Ali Arain | Ph.D. China |

Assistant Professors:

| | |
|-----------------------------|--|
| Mr. Din Muhammad Sangrasi | M.E. Pakistan On study leave |
| Mr. Salahuddin Sadar | M.E. Pakistan |
| Ms. Amirita | M.E. Pakistan |
| Ms. Areej Fatemah | M.E. Pakistan On study Leave |
| Mr. S. M. Shehram Shah | M.Sc. United Kingdom On study Leave |
| Mr. Zahid Hussain Khaskheli | 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:

| | |
|--------------------|---------------------------------|
| Mr. Zubair Sangi | M.E. Pakistan |
| Ms. Anoud Shaikh | M.E. Pakistan On Study Leave |
| Mr. Vijdan Khaliq | M.E. Pakistan On Study leave |
| Ms. Rabeea Jaffari | M.E. Pakistan On Study leave |
| Ms. Mariam Jawaid | M.E. Pakistan |
| Ms. Rabia Iftikhar | M.E. Pakistan |

3.5.6 Laboratory Facilities

To meet the latest trends 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 |
| 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 |
| SW499 | Thesis/Project | 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 | 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 department has four essential committees namely Departmental CQI (Continuous Quality Improvement) Committee, Industrial Advisory Board, Departmental Curriculum Review Committee and Departmental Board of Studies. The overall monitoring of administrative as well as teaching activities are monitored through senior faculty under the chair of chairman termed as Departmental Management Review Committee in accordance with ISO requirements.

Departmental CQI Committee (DCQI): This committee monitors the OBE based activities and is responsible for Curriculum revision according to the suggestions given by stakeholders (employer, alumni, and industrial representatives). The committee is also responsible to prepare corrective action request forms with CQI suggestions for further discussion/ approval.

Industrial Advisory Board (IAB): Key responsibilities of this board include providing recommendations for B.E (Software) Course Curriculum, improvement of technical and communication skills, review of FYP ideas and suggestions to meet with the trends of the hour for the degree program.

Departmental Curriculum Review Committee (DCRC): The major responsibility of this committee includes the design of course curriculum for the degree program in accordance with need of the hour and incorporating HEC/PEC and IAB members suggestion within the curriculum whenever desired.

Departmental Board of Studies (DBoS): DBoS is responsible to provide the recommendations for B.E (Software) Course Curriculum, check attainment of CLOs and PLOs and to discuss any changes / improvements as suggested by the faculty.

Additional Committees: Industrial Liaison Committee (ILC): This committee is responsible to establish link between academia and Industry. In particular, it would help in making arrangements for internships, job interviews, seminars, trainings, workshops for the students of our department.

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 Mobile and Wireless Communication, Terrestrial Satellite Communication, Multimedia and Broadband Communication etc. The department is under the establishment of Institute of Communication Technologies (ICT). In last 12 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.

Vision of Department

To provide the highest quality of learning and research opportunities for the students in the field of Telecommunication Engineering as well as make them competent professionals with high professional ethics to compete on a global scale.

Mission of Program

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

Program Educational Objectives

1. Aimed at training students for successful careers as qualified system designers/analysts, managers, academic professionals and researchers.

2. To produce graduates having in-depth discipline knowledge, and the necessary skills, innovation and creativity to formulate and solve problems through scientific and intuitive methods.
3. To inculcate professional ethical values and principles in the graduates to function electively as an individual and in a group to lead the society.

3.6.2 The Faculty

Chairman of the Department:

Dr. Faisal Karim Shaikh
Phone: +92-22-2772277, Ext. 6000

Meritorious Professor:

Dr. Aftab Ahmed Memon Ph.D. Japan

Professors:

Dr. Abdul Waheed Umrani Ph.D. Singapore
Dr. Faisal Karim Shaikh Ph.D. Germany

Associate Professor:

Dr. Fahim Aziz Umrani Ph.D. United Kingdom
Dr. Abdul Latif Memon Ph.D. China
Dr. Sajjad Ali Memon Ph.D. China
Dr. Faheem Yar Khuhawar Ph.D. Italy
Dr. Imran Ali Qureshi Ph.D. China
Dr. Badar Munir Ph.D. China
Dr. Nasrullah Pirzada Ph.D. Malaysia

Assistant Professors:

Engr. Nafeesa Bohra M.E. Pakistan
Engr. Naeem Aijaz Yousfani M.E. Pakistan
Engr. Shanzah Mohsin M.E. Pakistan
Dr. Zafi Sherhan Shah Ph.D. United Kingdom
Engr. Mehran M. Memon M.E. Malaysia
Engr. Shakeel A. Laghari M.E. Pakistan
Engr. Syed Rizwan Ali Shah M.E. Pakistan
Engr. Hyder Bux Mangrio M.E. Pakistan

Dr. Abi Waqas Memon
Dr. Faisal Ahmed Memon
Engr. Zulfiqar Ali Arain

Engr. Syed Mohsin Ali Shah

Engr. Riaz Ahmed Soomro

Engr. Saima Hafeez

Engr. Saadullah Kalwar

Ph.D. Italy
Ph.D. Italy
M.E. Pakistan
On Study Leave
M.E. Pakistan
On Study Leave
M.E. Pakistan
On Study Leave
M.E. Pakistan
On Study Leave
M.E. Pakistan
On Study Leave

8. Advanced Computing Laboratory
9. Digital Signal Processing Laboratory
10. Radio Communication Laboratory
11. Internet of Things (IoT) Laboratory

Lecturers:

Dr. Umair Ahmed Korai
Engr. Umair M. Qureshi

Engr. Zuneera A. Memon

Engr. Anum Talpur

Ph.D. United Kingdom
M.E. Pakistan
On Study Leave
M.E. Pakistan
On Study Leave
M.E. Pakistan
On Study Leave

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



3.6.4 Courses

| Course Code | Subject Name | Credit Hours | |
|---------------------|-----------------------------|--------------|-----------|
| | | Theory | Practical |
| 1st 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 |
| 2nd 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 |
| 3rd 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 |
| 4th 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 |
| 5th 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 |
| 6th 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 |
| 7th 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 |
| TL499 | Thesis/Project | 00 | 03 |
| Total | | 11 | 07 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 8th 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 a number of 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 (PTA)
- Wateen Telecom
- Jazz
- Telenor
- Zong
- Ufone
- SCO (Special Communication Organization initially started from Azad Kashmir and Gilgit Baltistan, now available throughout Pakistan)

• WLL Companies in Pakistan

- PTCL
- Cyber Internet Services Limited
- Telecard Limited
- Wi-Tribe Pakistan Limited
- WorldCall Telecom Ltd.
- Wateen WiMax (Pvt.) Ltd
- 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.

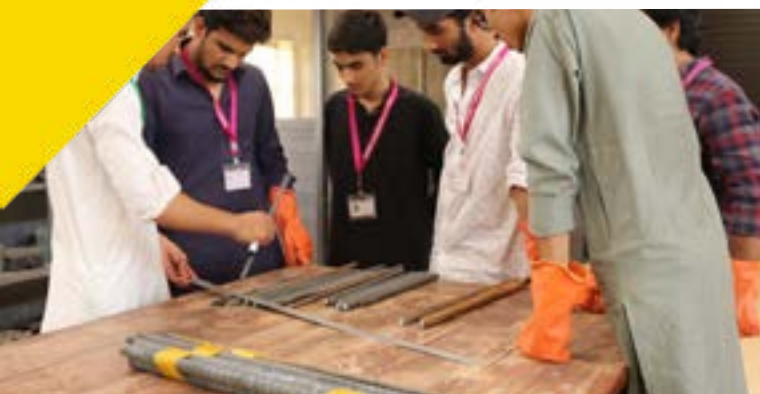
• Pakistan Forces

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

• Aeronautical Companies

- Civil Aviation Authority of Pakistan
- Civil Aviation Training Institute
- Pakistan International Airline (PIA) and other Airlines





FACULTY OF ENGINEERING



4.1 Department of Chemical Engineering

4.1.1 The Department

Chemical Engineering is a discipline that focuses on the application 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, bioproducts, 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 at national and international level. Due to booming demand of chemical engineers, the Department of Chemical Engineering at Mehran University of Engineering and Technology 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 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 thirteen well-maintained laboratories with sophisticated equipments where the students are provided with hand-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 softwares such as ASPEN PLUS, SIMULINK, FLUENT, MATLAB, and others for students. In the later years of undergraduate program, the department also provides internships to its students to get industrial experience as part of their academic activity. Moreover, the department also 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 from times to time organizes various professional forums for betterment of students. The Department of Chemical Engineering at MUET Jamshoro has various 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 DeIPHE 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 Polyacrylonitrile 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"

Department has organized a couple of International event such as; First and Second Workshops on Food and Bioprocessing, International Workshop on Women Professionals, three International Conferences on Chemical Engineering and Advanced Materials and Processing. The department provides academic cooperation to other institutions in training their students and conduct Laboratory Practical's. 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 remained main beneficiary of this academic support. Laboratory facilities has been provided to 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.

The department also organizes Professional training courses for students of the department and other Universities and institutes 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. A new trend has been developed by the department that Professional Seminars for the Professional Engineers and managers at their industries and respective fields are organized by the Resource Persons of International repute. Recently two Seminars have been organized by the department at SSGC Hyderabad Region and Archroma Pakistan at Jamshoro. A close linkage

have been developed with the industry and as result SSGC has financed our 04 energy related Research Projects at Masters and PhD level through formal agreement. Mehran University Chemical Engineers' Society (MUCES) has been established in 2010 by this department. Graduates from all over the world are members of this Society. MUCES serves as a bridge between academia and industry. Chapters of two international bodies' i.e.; American Institute of Chemical Engineers (AIChE) and American Chemical Society are initiated in the department to work with the international community.

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 of 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 | Ph.D. Pakistan Post Doctorate USA |
| Dr. Suhail Ahmed Soomro | Ph.D. Pakistan |
| Dr. Shaheen Aziz | Ph.D. Pakistan |
| Dr. Abdul Rehman Memon | Ph.D. United Kingdom |
| Dr. Zeenat Muhammad Ali | Ph.D. Pakistan |
| Dr. Aziza Aftab | Ph.D. Pakistan |

Associate Professors:

| | |
|----------------------------|----------------|
| Dr. Muhammad Shuaib Shaikh | Ph.D. Malaysia |
| Dr. Imran Nazir Unar | Ph.D. Pakistan |

Assistant Professors:

| | |
|--------------------------------|---------------------------------|
| Engr. Ashfaque Hussain Pirzada | M.E. Pakistan |
| Dr. Manzoor Ul Haq Rajput | Ph.D. Pakistan |
| Engr. Khan M. Qureshi | M.E. Pakistan |
| Dr. Zulfiqar Ali Bhatti | Ph.D. Pakistan |
| Engr. Aisha Kousar Effendi | M.E. Pakistan |
| Engr. Sikander Mustafah Almani | M.E. Pakistan On Study Leave |

Lecturers:

| | |
|----------------------------|---------------|
| Engr. Masroor Ahmed Abro | M.E. Pakistan |
| Engr. Zulfiqar Ali Solangi | M.E. Pakistan |

4.1.3 Laboratory Facilities

1. Water Quality Research Laboratory
2. Computer Laboratory
3. Polymer Research Laboratory
4. Biochemical and Food Processing Laboratory
5. Particulate Technology Laboratory

6. Mass Transfer Laboratory
7. Analytical Research Laboratory
8. Chemistry Laboratory
9. Fluid Mechanics Laboratory
10. Heat Transfer Laboratory
11. Fuel and Energy Laboratory
12. Coal Research Laboratory
13. Instrumentation and Control Laboratory



4.1.4 Courses

| Course Code | Subject Name | 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/SS104 | 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 | Subject Name | 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 | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 3rd Semester | | | |
| CH201 | Physical and Analytical Chemistry | 2 | 1 |
| CH205 | Chemical 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 | Subject Name | 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 | Subject Name | 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 | Subject Name | 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 | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| MTH216 | Transport Phenomena | 3 | 0 |
| CH212 | Instrumentation & Process Control | 3 | 1 |
| CH213 | Biochemical Engineering | 2 | 1 |
| CS228 | Pollution Control Engineering | 2 | 1 |
| MTH216 | Technical Report Writing & Presentation Skills | 2 | 0 |
| MTH216 | Final Year Project-I | 0 | 3 |
| Total | | 12 | 6 |

| Course Code | Subject Name | 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

TA chemical engineer may be involved in industry or university research where they are tasked in designing and performing experiments to create new and better ways of production, controlling pollution, conserving resources and making these processes safer. They may be involved in designing and constructing plants as a project engineer. In this field, the chemical engineer uses their knowledge in selecting plant equipment and the optimum method of production to minimize costs and increase profitability. After its construction, they may help in upgrading its equipment. They may also be involved in its daily operations. Chemical engineers may be permanently employed at chemical plants to manage operations. Alternatively, they may serve in a consultant role to troubleshoot problems, manage process changes and otherwise assist plant operators. Many graduates of the chemical engineering department are now serving in important public as well as private sector organizations within Pakistan for example 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, etc. and even outside the country.



4.2 Department of Industrial Engineering

4.2.1 The Department

This department was established in the year 1975 under the umbrella of Department of Mechanical Engineering and Full-fledged Department was shifted to new building in 1987. 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.

Industrial Engineering is a rapidly developing and broad professional discipline. It deals with 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 especially deals with managerial problems requiring knowledge of fundamental science and engineering practice for their solutions.

While manufacturing industry has a wide scope and demand for Industrial Engineering, increasing numbers are finding satisfying employment in other kinds of business, hospitals, Hotels, Banks, Air Lines are availing the services of Industrial Engineers.

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 Industrial Engineers who design, install, and improve the complex engineering operations in services, industry, technology, business and government and to foresee future development

Program Education Objectives (PEOs)

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

- PEO-1:** strong foundation in Engineering and Management fundamentals which lead them for a successful career as an Industrial Engineer in manufacturing and service industry.
- PEO-2:** ability to function at technically competent level within realistic constraints in economic, environmental and social context.
- PEO-3:** ability to effectively lead, work and communicate in cross functional teams or to be able to develop entrepreneurial skill to operate their own business.

4.2.2 The Faculty

Chairman of the Department:

Prof. Dr. Abdul Salam Soomro
Ph. +92 22 2771247

Professor:

| | |
|---------------------------|---------------------------|
| Dr. Abdul Salam Soomro | Ph.D. Pakistan / Malaysia |
| Dr. Ghulam Yasin Shaikh | Ph.D. Pakistan |
| Dr. Muhammad Saleh Jumani | Ph.D. United Kingdom |

Associate Professor:

| | |
|--------------------------|----------------------|
| Dr. Shakeel Ahmed Shaikh | Ph.D. United Kingdom |
|--------------------------|----------------------|

Assistant Professors:

| | |
|----------------------------|-------------------|
| Mr. Abdul Qayoom Lakhair | Pg.D. Pakistan |
| Mr. Hafiz Karim Bux Indhar | M.E. Pakistan |
| Dr. Sonia Irshad Mari | Ph.D. South Korea |
| Dr. Muhammad Saad Memon | Ph.D. South Korea |
| 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 Courses

| Course Code | Subject Name | Credit Hours | |
|--------------|---|--------------|-----------|
| 1st Semester | | Theory | Practical |
| MTH102 | Applied Calculus | 03 | 00 |
| SS111 | Islamic Studies/Ethics | 02 | 00 |
| PS106 | Pakistan Studies | 02 | 00 |
| INM101 | Industrial Economics and Management | 03 | 00 |
| INM111 | Engineering Drawing & Computer Graphics | 03 | 01 |
| EL102 | Electrical Technology | 03 | 01 |
| Total | | 16 | 02 |

| Course Code | Subject Name | Credit Hours | |
|--------------|---|--------------|-----------|
| 2nd Semester | | Theory | Practical |
| MTH103 | Linear Algebra Differential Equations & Analytical Geometry | 03 | 00 |
| INM121 | Basic Business Management | 02 | 00 |
| ENG111 | Functional English | 03 | 00 |
| CE | Mechanics of Materials | 03 | 01 |
| INM131 | Manufacturing Processes | 02 | 02 |
| Total | | 13 | 03 |

| Course Code | Subject Name | Credit Hours | |
|--------------|---------------------------------------|--------------|-----------|
| 3rd Semester | | Theory | Practical |
| MT220 | Materials & Processes | 03 | 01 |
| INM201 | Management Information Systems | 02 | 00 |
| INM211 | Mechanics of Machines | 02 | 01 |
| INM221 | Basic Thermodynamics | 02 | 01 |
| CS218 | Introduction to Com & C++ Programming | 03 | 01 |
| Total | | 12 | 04 |

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

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| INM301 | Entrepreneurship | 03 | 00 |
| MTH336 | Numerical Analysis & Com. Application (N.A.C.A) | 03 | 01 |
| INM311 | Basic Operations Research | 03 | 01 |
| INM321 | Manufacturing Strategy | 03 | 00 |
| ES361 | Instrumentation & Control | 03 | 01 |
| Total | | 15 | 03 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|----------------------------------|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| INM331 | Organizational Behavior | 03 | 00 |
| INM341 | Work Study & Methods Engineering | 03 | 01 |
| INM351 | Production Systems Design | 03 | 00 |
| INM361 | Project Management | 03 | 01 |
| INM371 | Environmental Management | 02 | 00 |
| Total | | 14 | 02 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| INM401 | Human Resources Management | 03 | 00 |
| INM411 | Human Factors Engineering | 02 | 01 |
| INM421 | Advanced Operations Research | 02 | 01 |
| INM431 | Industrial Maintenance and Safety | 03 | 00 |
| INM441 | Supply Chain and Logistical Management | 03 | 00 |
| INM499 | Dissertation/Project | 00 | 03 |
| Total | | 13 | 05 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| INM451 | Quality and Reliability Control | 03 | 00 |
| INM461 | Marketing Principles and Practices | 03 | 00 |
| INM471 | Principles of Decision Making | 03 | 00 |
| INM481 | Computer Integrated Manufacturing | 03 | 01 |
| INM499 | Dissertation/Project | 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 work place 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 prominent departments of the university with student's strength of about 600. With devoted faculty and staff, the department strives to produce the engineers, which are capable to contribute in exploration of affordable and sustainable development of the country.

Vision

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

Mission

Mechanical Engineering Department strives to produce engineers and researchers with sound knowledge of traditional and emerging areas of engineering together with the ability of having critical and innovative thinking and make them globally competitive.

Mechanical Engineering Department offers two undergraduate programs of four-year duration, leading to the degree of Bachelor of Engineering.

- 1- Mechanical Engineering
- 2- Mechatronics Engineering

The goal of the undergraduate programs is to produce the graduates that are globally competitive for the requirements of industries. The student, graduated from this department, becomes capable of taking leading positions in industry, academia and government in both Pakistan and abroad. The department also offers the PhD and post graduate programs in Energy System Engineering, Manufacturing Engineering and Mechatronics Engineering.

4.3.1.1 Mechanical Engineering Undergraduate Program

Mechanical engineering department strives 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.

Program Education Objectives (PEOs): Mechanical Engineering

- 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.

4.3.1.2 The Faculty

Chairman of the Department:

Prof. Dr. Dur Muhammad Pathan

Phone: +92-022- 2771275, +92-22772250-70, Ext: 2300

Professor:

| | |
|--------------------------------|------------------------------------|
| Dr. Dur Muhammad Pathan | Ph.D. Pakistan |
| Dr. Memon Mujeeb-u-ddin Sahrai | Ph.D. United Kingdom. (On Lien) |
| Dr. Khanji Harijan | Ph.D. Pakistan |
| Dr. Rizwan Ahmed Memon | Ph.D. Hong Kong |
| Dr. Abdul Fatah Abbasi | Ph.D. Pakistan |
| Dr. Tanweer Hussain | Ph.D. United Kingdom |

Associate Professor

| | |
|-------------------------|----------------|
| Dr. Abdul Ghafoor Memon | Ph.D. Pakistan |
|-------------------------|----------------|

Assistant Professors:

| | |
|---------------------------|---------------|
| Engr. Ghulam Yasin Mughal | M.E. Pakistan |
| Engr. Abdul Samad Memon | M.E. Pakistan |

Engr. Muhammad Sharif Jamali M.E. Pakistan
 Engr. M. Atif Qaim Khani M.E. Pakistan
 Engr. Imfiaz Ali Memon M.E. Pakistan
 Engr. Shoukat Ali Memon B.E. Pakistan
 Engr. Muhammad Jurial Sangi B.E. Pakistan

Lecturers:

Engr. Javed Rehman Larik M.E. Pakistan
 Engr. Laveet Kumar M.E. Pakistan
 (On Study Leave)
 Engr. Roshan Kumar M.E. Pakistan
 Engr. Samiullah Qureshi M.E. Pakistan
 Engr. Abdul Hafeez Khoharo M.E. Pakistan
 Engr. Farhan Haider Joyo M.E. Pakistan
 Engr. Samiullah Qureshi M.E. Pakistan
 Engr. Ans Memon M.E. Pakistan
 Engr. Waqas Ali Chandio M.E. Pakistan
 Engr. Intizar Ali Tunio M.E. Pakistan
 Engr. Zain-ul-Abdin Qureshi PG.D. Pakistan



4.3.1.3 Courses

| Course Code | Subject Name | Credit Hours | |
|------------------|---|--------------|-----------|
| 1st Semester | | Theory | Practical |
| (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 | |
|--------------|--|--------------|-----------|
| 2nd Semester | | Theory | Practical |
| (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 | |
|--------------|--------------------------------|--------------|-----------|
| 3rd Semester | | Theory | Practical |
| (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 | |
|--------------|--|--------------|-----------|
| 4th Semester | | Theory | Practical |
| (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 | 0 |
| (ME 498) | Project/Thesis -I | 0 | 3 |
| Total | | 11 | 05 |

| 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 |

4.3.1.4 Workshop Instructors

| | |
|-----------------------------|-------------------------------|
| Engr. Aafaque Rafique Memon | M.E China (on study leave) |
| Engr. Jamaluddin Veenjher | B.E Pakistan |
| Ameer Ali Memon | B.E Pakistan |
| Jawaid Ahmed Serhandi | B.E Pakistan |
| Aurangzeb Halepoto | B.E Pakistan |
| Abdul Qadir Jamali | B.Tech Hons |
| Jameel Ahmed Mangi | B.Tech Hons |

4.3.1.5 Laboratory Facilities

- Instrumentation Laboratory
- Robotics & Control Laboratory
- Computer Laboratory
- Modeling & Simulation Laboratory
- Mechatronic System Design Laboratory
- Circuit Design & Project Laboratory
- Engineering Drawing Laboratory
- Engineering Mechanics Laboratory
- Fluid Mechanics Laboratory
- Material Testing Laboratory
- Thermodynamics Laboratory
- Mechanics of Machines Laboratory
- Mechanical Vibrations Laboratory
- Mechanical Engineering Workshop
- Equipment and Training Laboratory
- Electrical Circuit and Measurement Laboratory
- Power Electronics and Control Laboratory
- Digital System Design Laboratory
- Analog Electronics Laboratory
- Embedded Systems Laboratory

4.3.2 Mechatronic Engineering Undergraduate Program

The Mechatronics Engineering undergraduate program is administered by the Department of Mechanical Engineering. 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. A Mechatronic system is composed of integration of mechanical and electronic components, sensors, actuators and controllers.

The courses in Mechatronics undergraduate program are offered by Mechanical Engineering department in collaboration with Electrical Engineering, Electronics Engineering, Telecommunication engineering and Computer System Engineering departments. This makes it an ideal choice for students, who would prefer a broad interdisciplinary engineering education to counter the challenges of demanding technological horizons.

Program Education Objectives (PEOs): Mechatronic Engineering

- 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.

4.3.2.1 The Faculty

Chairman of the Department:

Prof. Dr. Dur Muhammad Pathan
Phone:+92-22772250-70, Ext. 2300

a- Dedicated Faculty:

Professor:

Dr. Jawaid Daudpoto Ph.D. United Kingdom

Assistant Professors:

| | |
|-----------------------------|-------------------|
| Dr. Saifullah Samo | Ph.D. China |
| Dr. Shadi Khan Baloch | Ph.D. Turkey |
| Dr. Sufyan Ali Memon | Ph.D. South Korea |
| 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:

Associate Professor:

| | |
|-----------------------|----------------|
| Dr. Farzana Rauf Abro | Ph.D. Pakistan |
|-----------------------|----------------|

Assistant Professors:

| | |
|---------------------------|----------------|
| Mr. Arbab Ali Samejo | M.E. Pakistan |
| Mr. Muhammad Rashid Memon | M.E. Pakistan |
| Dr. Khalil Ur Rehman Dayo | Ph.D. Pakistan |
| Mr. Mehboob Khuwaja | M.E. Pakistan |

Lecturer:

| | |
|-----------------------------|----------------|
| Dr. Mahesh Kumar Rathi | Ph.D. Malaysia |
| Mr. Faheem Shafique Channar | B.E. Pakistan |

4.3.2.2 Laboratory Facilities

Following lab facilities are available to students of Mechatronics Engineering.

1. Mechatronics Laboratory
2. Computer Laboratory
3. Electrical Measurements and Circuit Laboratory
4. Electrical Workshop
5. Instrumentation and Control Laboratory
6. Digital Electronics and Microprocessor Laboratory
7. Power Electronics Laboratory
8. Drawing Hall

9. Engineering Mechanics Laboratory
10. Fluid Mechanics Laboratory
11. Heat Transfer Laboratory
12. Automobile Laboratory
13. Mechanical Vibrations Laboratory
14. Mechanics of Machines Laboratory
15. Refrigeration and Air Conditioning Laboratory
16. Thermodynamics Laboratory

4.3.2.3 Courses

| Course Code | Subject Name | Credit Hours | |
|---------------------|-----------------------|--------------|-----------|
| | | Theory | Practical |
| 1st Semester | | | |
| MTH 108 | Applied Calculus | 3 | 0 |
| EN 101 | Functional English | 3 | 0 |
| EL 117 | Applied Physics | 2 | 1 |
| CS 191 | Computer Programming | 2 | 1 |
| ME 106 | Engineering Statics | 3 | 1 |
| ME 116 | Engineering Materials | 2 | 0 |
| Total | | 15 | 03 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 2nd Semester | | | |
| ME 126 | 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 | | | |
| ME 206 | Mechanics of Materials | 2 | 1 |
| MTE 201 | Actuating Systems | 3 | 1 |
| ME 216 | Engineering Dynamics | 3 | 0 |
| CS 291 | Data Structures and Object Oriented Programming | 2 | 1 |
| ES 216 | Digital Logic Design | 2 | 1 |
| MTH 227 | Ordinary and Partial Differential Equations | 3 | 0 |
| Total | | 15 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 4th Semester | | | |
| MTH 217 | Laplace Transforms and Discrete Mathematics | 3 | 0 |
| ME 226 | Fundamentals of Thermal Sciences | 3 | 1 |
| ES 246 | Electronic Devices and Circuits | 3 | 1 |
| ME 236 | Mechanics of Machines | 3 | 1 |
| MTE 211 | Instrumentation and Measurements | 3 | 1 |
| Total | | 15 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| MTH 336 | Numerical Analysis and Computer Applications | 3 | 1 |
| ES 316 | Microcontroller and Embedded Systems | 3 | 1 |
| TL 301 | Signals and Systems | 2 | 1 |
| ME 306 | Mechanical Vibrations | 3 | 1 |
| Total | | 11 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|------------------------------|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| MTH 317 | Statistics and Probability | 3 | 0 |
| MTE 301 | Control Systems | 3 | 1 |
| ME 316 | Machine Design and CAD / CAM | 3 | 1 |
| EN 113 | Communication Skills | 2 | 0 |
| EL 329 | Power Electronics | 3 | 1 |
| Total | | 14 | 03 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| ME 406 | Engineering Economics and Project Management | 3 | 1 |
| MTE 401 | Robotics | 3 | 0 |
| CS 492 | Digital Signal & Image Processing | 3 | 1 |
| ME 416 | Manufacturing Processes | 3 | 1 |
| MTE 499 | Project / Thesis -I | 0 | 3 |
| Total | | 12 | 06 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--------------------------------|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| CS 491 | Machine Intelligence | 3 | 1 |
| MTE 411 | Mechatronic System Design | 2 | 1 |
| MTE 421 | Industrial Automation | 2 | 1 |
| EE 425 | Safety, Health and Environment | 3 | 0 |
| STD 951 | Entrepreneurship | 2 | 0 |
| MTE 499 | Project / Thesis -II | 0 | 3 |
| Total | | 12 | 06 |

4.3.2.4 Career Opportunities

Mechatronic Engineers have opportunities to work in emerging fields in public and private sectors. 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.

Mechatronic Engineers are in demand in the following sectors:

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



4.4 Department of Metallurgy and Materials Engineering

4.4.1 The Department

The Department of Metallurgy & Materials Engineering is one of the leading department in the engineering disciplines at Mehran University of Engineering & Technology. 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 University of Engineering & Technology which is equipped with advanced research equipment and highly qualified academics staff of around 09, 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 to impart practical knowledge among students' 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 Department:

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

Mission of 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.

4.4.2 The Faculty

Chairman of The Department:

Prof. Dr. Muhammad Ishaque Abro
Phone: 0333-2705953, Ext. 4500 - 4501

Professor:

Dr. Muhammad Ishaque Abro Ph.D. Pakistan

Assistant Professors:

| | |
|---------------------------|---------------------------------|
| Mr. Nisar Ahmed Memon | M.E. Pakistan |
| Mr. Ashfaque Ahmed Issani | M.E. Pakistan |
| Dr. Muhammad Wasim Akhtar | Ph.D. Korea |
| Mr. Umair Aftab | M.E. Pakistan |
| Mr. Shafique Ahmed | M.E. Pakistan on study leave |

Lecturer:

| | |
|-------------------------|---------------------------------|
| Mr. Muddassir Ali Memon | M.E. Pakistan |
| Mr. Imtiaz Ali Soomro | M.E. Pakistan On study leave |
| Mr. Ayatullah Qureshi | M.E. Pakistan |
| Mr. Mukesh Kumar | M.Phil. Pakistan |

4.4.3 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

4.4.4 Courses

| Course Code | Subject Name | Credit Hours | |
|---------------------|---------------------------------------|--------------|-----------|
| | | 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 | | 16 | 01 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | 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 | 2 | 1 |
| ME176 | Workshop Practice | 0 | 2 |
| Total | | 12 | 5 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | 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 Hours | |
|---------------------|----------------------------------|--------------|-----------|
| | | 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 Hours | |
|---------------------|-------------------------------------|--------------|-----------|
| | | 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 Hours | |
|---------------------|-----------------------------------|--------------|-----------|
| | | 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 Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| 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 Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| 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 |

4.4.5 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 Pakistan Steel Mill, Bolan Casting limited, Agha Steel Mill, Pakistan Machine tool factory, Heavy Mechanical Complex, Pakistan Ordinance Factory, Sui Southern Gas, Super cop, Suzuki Plant Karachi. 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.



4.5 Department of Mining Engineering

4.5.1 The Department

"If it is not Grown, it has to Mine", Mining may well have been the second of humankind's earliest endeavors, granted that agriculture was the first. The two industries ranked together as the primary or basic industries of early civilization.

Mineral sector always plays a vital role for industrial development and economic growth of nations. The demand for minerals of all kinds is higher today than ever before, and it continues to increase as the nations of the world strive to improve their standards of living. Mining Engineering is a highly technical field. Today the challenges of mining are greater than before. Now high-tech techniques are being designed to make tomorrow's mines more productive, safer, and economically successful. Mining engineers are seeking ways to extract essential raw materials without causing undue disturbance to the environment.

Mining provides the mineral resources for society, including coal, metallic & non-metallic minerals, ores, gemstones as well as basic products such as; gravel, limestone, sandstone etc., that are essential for the construction of highways, bridges, power plants, and building foundations. Wherever productive minerals deposits are found in our country, the technical skills of Mining and mineral processing engineers are required. The Department of Mining Engineering offers degrees in B.E. in Mining Engineering, M.E. in Mining Engineering and Ph.D. in Mining Engineering

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, and have developed 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.

Program Learning Outcomes (PLOs)

BE Mining Engineering Program at MUET aims to instill in our graduates the following attributes:

1. **Engineering Knowledge:** Ability to apply the knowledge of mathematics, science, engineering fundamentals and engineering specialization to the solution of complex engineering problems.
2. **Problem Analysis:** An ability to identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

3. **Design/Development of Solutions:** An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
4. **Investigation:** An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions.
5. **Modern Tool Usage:** An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.
6. **The Engineer and Society:** An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.
7. **Environment and Sustainability:** 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. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
9. **Individual and Teamwork:** An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.
10. **Communication:** An ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project Management:** An ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.
12. **Lifelong Learning:** ability to recognize importance of, and pursue lifelong learning in the broader context of innovation and technological developments.

4.5.2 The Faculty

Chairman of the Department:

Dr. Fahad Irfan Siddiqui

Phone: 022-2771391, 022-2772260-73, Ext. 4600

Professor:

Dr. Abdul Ghani Pathan

Ph.D. United Kingdom

Associate Professors:

Dr. Fahad Irfan Siddiqui

Ph.D. Pakistan

Mr. Parvez Ahmed Shakeel

MSc. Pakistan
(Honorary)

Assistant Professors:

Mr. Ahsan Ali Memon

B.E. Pakistan

Mr. Muhammad Hashim Rind

B.E. Pakistan

Mr. Muhammad Yaqoob Behan

M.E. Pakistan

Mr. Saeed Ahmed Memon

B.E. Pakistan

Mr. Sikandar Ali Channa

M.E. Pakistan

Mr. Safiullah Memon

M.E. Pakistan

Lecturer:

| | |
|--------------------------------|----------------|
| Dr. Munawar Ali Pinjaro | Ph.D. China |
| Mr. Agha Shafi Muhammad Pathan | M.E. Pakistan |
| Mr. Muhammad Raheel Memon | M.E. Pakistan |
| | On Study Leave |
| Mr. Mairaj Hyder Soomro | M.E. Pakistan |
| | On Study Leave |
| Mr. Sultan Ahmed Khoso | M.E. Pakistan |
| | On Study Leave |
| Mr. Muhammad Burhan Memon | M.E. Malaysia |
| Mr. Saleem Raza Baloch | M.E. Pakistan |

4.5.3 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



4.5.4 Courses

| Course Code | Subject Name | 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 | Subject Name | 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 | Subject Name | 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 | Subject Name | 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 | Subject Name | 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 | Subject Name | 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 | Subject Name | 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 | Subject Name | 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 |

4.5.5 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.

4.6 Institute of Petroleum and Natural Gas Engineering

4.6.1 About 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 life line of country's development. The exploration and production of these reserves offer broad spectrum of challenges and opportunities for the graduates and post graduates 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 back ground of Sindh, Pakistan. Most of the graduates have been employed by oil and gas operating companies, services companies, refinery 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 Post graduate 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 Department:

The visionary approach of our Institute is concentrated in Petroleum 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 IPNGE 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 petroleum industry.

Program Educational Objectives:

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 dynamic petroleum graduates capable of practicing advanced knowledge to promote oil and gas industry.
2. To provide the leadership and communication skills to promote teamwork for strengthening the petroleum industry.

- To provide quality research for innovative strategies to enhance environmentally sustainable oil and gas production to meet the global fuel demand.

4.6.2 The Faculty

Director of the Institute:

Prof. Dr. Abdul Haque Tunio
Ph: 022-2771241, 2772250-73, Ext. 4300

Professor:

| | |
|--------------------------|----------------|
| Dr. Abdul Haque Tunio | Ph.D. Pakistan |
| Dr. Sarfraz Ahmed Jokhio | Ph.D. USA |

Assistant Professors:

| | |
|--------------------------|----------------|
| Mr. Shahzad Ali Baladi | M.E. Pakistan |
| Mr. Allah Dino Samoon | B.E. Pakistan |
| Dr. Muhammad Khan Memon | Ph.D. Malaysia |
| Mr. Aftab Ahmed Mahesar | M.E. Pakistan |
| | On Study Leave |
| Mr. Khalil Rehman Memon | M.E. Malaysia |
| | On Study Leave |
| Mr. Naveed Ahmed Ghirano | M.E. Pakistan |
| Mr. Habib U Zaman Memon | M.E. Pakistan |
| Mr. Muhammad Zubair | M.E. Pakistan |

Lecturer:

| | |
|--------------------------|-----------------------|
| Engr. Abdul Qadir Shaikh | B.E. Pakistan |
| Mr. Mukhtiar Ali Talpur | M.E. Pakistan |
| Mr. Ubedullah Ansari | M.E. Pakistan |
| | On Study Leave Abroad |
| Mr. Irshad Ali Gopang | M.E. Pakistan |
| Mr. Faisal Najam Abro | B.E. Pakistan |
| Mr. Muhammad Ali Memon | B.E. Pakistan |
| Mr. Sohail Nawab | M.E. Pakistan |
| Mr. Imran Ahmed Hullio | M.E. Pakistan |

Lab. Engineers:

| | |
|---------------------------|---------------|
| Mr. Ghulam Mustafa Kamboh | B.E. Pakistan |
| Mr. Sheeraz Ahmed Soomro | B.E. Pakistan |
| Mr. Habibullah Sargani | M.E. Pakistan |

4.6.3 Laboratory Facilities

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

- Petroleum Refinery Engineering
- Gas Engineering
- Drilling & Reservoir Simulation
- Production Engineering
- Drilling Fluids
- Computer
- General / Oil Testing
- PVT laboratory

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.



4.6.4 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 | 5 |

| 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 | 3 | 0 |
| CE-261 | Fluid Mechanics | 2 | 1 |
| Total | | 14 | 1 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--------------------------------|--------------|-----------|
| | | Theory | Practical |
| 4th Semester | | | |
| PG-201 | Petrophysics | 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 |
| 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 |

4.6.5 Career 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.

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.



4.7 Department of Textile Engineering

4.7.1 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

Tur 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.

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, 3-5 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.

4.7.2 The Faculty

Chairman of the Department:

Dr. Rafique Ahmed Jhatial
Ph. 022-2771565

Professor:

| | |
|---------------------------|----------------------|
| Dr. Rafique Ahmed Jhatial | Ph.D. United Kingdom |
| Dr. Zeeshan Khatri | Ph.D. Japan |
| Dr. Farooq Ahmed | Ph.D. Pakistan |

Associate Professors:

| | |
|-----------------------------|---|
| Dr. Mazhar Hussain Peerzada | Ph.D. United Kingdom On Sabbatical Leave |
| Dr. Awais Khatri | Ph.D. Australia |
| Dr. Iftikhar Ali Sahito | Ph.D. South Korea |
| Dr. Shamshad Ali Shaikh | Ph.D. South Korea |
| Dr. Samander Ali Malik | Dr. Eng. Germany |

Assistant Professors:

| | |
|------------------------|---------------------------------|
| Dr. Raja Fahad Qureshi | Ph.D. Pakistan |
| Ms. Sanam Irum Memon | M.E. Pakistan |
| Dr. Alvira Ayoub Arbab | Ph.D. South Korea |
| Mr. Abdul Wahab Memon | M.E. Pakistan On Study Leave |
| Dr. Anam Ali Memon | Ph.D. South Korea |
| Dr. Naveed Mengal | Ph.D. South Korea |
| Dr. Noor Ahmed Sanbhal | Ph.D. China |
| Dr. Abdul Wahab Jatoi | Ph.D. Japan |

Lecturer:

| | |
|-------------------------|---------------------------------|
| Ms. Sadaf Aftab Abbasi | M.E. Pakistan On Study Leave |
| Ms. Rabia Almas Arain | M.E. Pakistan |
| Mr. Nadir Ali Rind | M.E. Pakistan On Study Leave |
| Ms. Umaima Saleem | M.E. Pakistan On Study Leave |
| M. Abdul Khaliq Jhatial | M.E. Pakistan |

4.7.3 Laboratory Facilities

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, 3-5 years after graduation, should be able to:

- | | |
|--|--------------------------------|
| 1. Yarn Manufacturing | 2. Weaving |
| 3. Knitting | 4. Textile Chemical Processing |
| 5. Colour research | 6. Garment Manufacturing |
| 7. Textile Testing and Quality Control | 8. Textile Composites |
| 9. Nano-materials | 10. Non-Wovens |



4.7.3 Courses

| Course Code | Subject Name | Credit Hours | |
|---------------------|-------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 1st Semester | | | |
| TE111 | Introduction to Textile Engineering | 03 | 00 |
| TE112 | Applied Chemistry | 03 | 01 |
| TE113 | Engineering Drawing | 00 | 02 |
| EL112 | Electrical Engineering | 02 | 01 |
| MTH116 | Calculus | 02 | 00 |
| IS111/SS104 | Islamic Studies/Ethics | 02 | 00 |
| PS106 | Pakistan Studies | 02 | 00 |
| Total | | 14 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 2nd Semester | | | |
| TE121 | Textile Raw Materials | 03 | 00 |
| TE122 | Textile Mechanics | 03 | 01 |
| ES122 | Electronics Engineering | 03 | 01 |
| MTH115 | Differential Equations and Laplace Transform | 02 | 00 |
| ENG101 | Functional English | 03 | 00 |
| TE123 | Workshop Practice | 00 | 02 |
| Total | | 14 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 3rd Semester | | | |
| TE211 | Fiber Science | 02 | 01 |
| TE212 | Yarn Manufacturing – I | 03 | 01 |
| TE213 | Applied Physics | 02 | 01 |
| CS240 | Introduction to Computers and C++ Programming | 02 | 01 |
| TE214 | Textile Engineering Utilities and Services | 02 | 01 |
| Total | | 11 | 05 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 4th Semester | | | |
| TE221 | Synthetic Fiber Manufacturing | 02 | 00 |
| TE222 | Yarn Manufacturing – II | 03 | 01 |
| TE223 | Fabric Manufacturing – I | 03 | 01 |
| TE224 | Textile Pretreatment | 03 | 01 |
| MTH220 | Numerical Analysis and Computer Applications | 03 | 01 |
| Total | | 14 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| TE311 | Yarn Manufacturing – III | 03 | 01 |
| TE312 | Fabric Manufacturing – II | 03 | 01 |
| TE313 | Textile Dyes and Dyeing | 03 | 01 |
| TE314 | Automation and Control Engineering | 02 | 01 |
| ENG301 | Communication Skills | 02 | 00 |
| Total | | 13 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|-------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| TE321 | Yarn Manufacturing – IV | 02 | 01 |
| TE322 | Fabric Design and Structure | 02 | 01 |
| TE323 | Textile Testing and Quality Control | 03 | 01 |
| TE324 | Colour Physics | 02 | 01 |
| TE325 | Environmental Engineering | 02 | 00 |
| MTH311 | Statistics and Probability | 03 | 00 |
| Total | | 14 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|-------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| TE411 | Fabric Manufacturing – III | 02 | 01 |
| TE412 | Textile Printing | 03 | 01 |
| TE413 | Textile Marketing and Merchandising | 02 | 00 |
| | Technical and Scientific Writing | 03 | 00 |
| TE414 | Entrepreneurship | 03 | 00 |
| TE499 | Thesis/Project - I * | 00 | 03 |
| Total | | 13 | 05 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---------------------------|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| TE421 | Yarn Manufacturing - V | 02 | 00 |
| TE422 | Fabric Manufacturing - IV | 02 | 00 |
| TE423 | Textile Finishing | 03 | 01 |
| INM487 | Production Management | 02 | 00 |
| TE499 | Thesis/Project -II | 00 | 03 |
| Total | | 09 | 03 |

4.7.4 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 1000 books and Research Journal on Textile and Garments.

4.7.5 Career Opportunities

After graduation, the candidate will be:

- able to join any textile manufacturing and processing industry in Pakistan and abroad as a management trainee or at similar position.
- able to join textile services sector such as testing, merchandising and auditing...etc.
- eligible for admission in Master 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, Materials, Environment, Medical, Automobile and Aerospace, Defense, and so on.





**FACULTY OF SCIENCE,
TECHNOLOGY & HUMANITIES**



5.1 (a) Department of Basic Sciences & Related Studies (BSRS)

Introduction of the Department

The faculty of this department teaches/offers various fundamental and 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 Ph.D. and M.Phil. students in the field of Mathematics.

The department, commenced a 2-year M.Phil. and 4-year Ph.D. program in Applied Mathematics from the year 2014. Presently, Department running three batches of M.Phil. in Applied Mathematics, which comprises of about 40 students. whilst in 2019, BS (Mathematics) program 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 Ph.D. 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 38 M.Phil. students and 01 Ph.D. student in applied Mathematics and 09 Ph.D. 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.

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.



The Faculty

Chairman of the department:

Prof. Dr. Muhammad Anwar Solangi

Phone: +92-22772250-70, Ext-2200

Email: chairman.bsrs@admin.muet.edu.pk

Professor:

| | |
|----------------------------|-------------------------|
| Dr. Muhammad Anwar Solangi | PhD (Maths). Pakistan |
| Dr. Syed Feroz Shah | Ph.D. (Maths). China |
| Dr. Asif Ali Shaikh | Ph.D. (Maths). Pakistan |

Assistant Professors:

| | |
|-----------------------------|--|
| Mr. Saifullah Abro | M.Phil. (Maths). Pakistan |
| Mr. Ghulam Abbas Mehar | M.A (Pak Study). Pakistan |
| Mr. Abdul Saleem Memon | M.Phil. (Maths). Pakistan |
| Dr. Sania Qureshi | Ph.D. (Maths). Pakistan |
| Ms. Zaib-un-Nisa 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 |
| Dr. Kashif Ali Abro | Ph.D. (Maths). Pakistan |
| Mr. Hammeer Abro | M.Phil. (Maths). Pakistan |
| Mr. Ayaz Ali Siyal | M.Phil. (Maths). Pakistan |
| Mr. Ali Asghar Sangah | M.Phil. (Maths). Pakistan |
| Dr. Muhammad Mujtaba Shaikh | Ph.D. (Maths). Pakistan |
| Ms. Sara Mahasar | M.Phil. (Maths). Pakistan |

Lectures:

| | |
|----------------------------|-------------------------------------|
| Ms. Naseem Khalid Memon | M.Sc. (Maths). Pakistan |
| Dr. Raheem Bux Khokhar | Ph.D. (Maths). UK On Study Leave |
| Hafiz Abdul Aziz Memon | M.Phil. (Islamic Culture). Pakistan |
| Mr. Shafqat Chandio | M.Phil. (Maths). Pakistan |
| Hafiz Shoaib Ahmed Kalhoro | M.Phil. (Islamic Culture). Pakistan |
| Mr. Mansoor Ali Bhagat | B.S (Maths). Pakistan |
| Mr. Javed Iqbal Larik | M.A .(Pakistan Studies). Pakistan |

Mr. Sarfraz Ali Banbhan
Mr. Sher Khan Awan
Hafiz Abdul Waheed Channa
Mr. Prem Kumar

M.Sc. (Pakistan Studies). Pakistan
M.Phil. (Maths). Pakistan
M.Phil. (Islamic Culture). Pakistan
M.Phil. (Maths). Pakistan

The Courses

SUBJECT LIST FROM FIRST SEMESTER TO SIXTH SEMESTER

| Course Code | Subject Name | Credit Hours | |
|---------------------|----------------------------------|--------------|-----------|
| | | Theory | Practical |
| 1st Semester | | | |
| MTH 108 | APPLIED CALCULUS | 03 | 00 |
| MTH 107 | BASIC MATHEMATICS | 03 | 00 |
| MTH 110 | CALCULUS AND STATISTICAL METHODS | 03 | 00 |
| MTH 116 | CALCULUS | 02 | 00 |
| PS 106 | PAKISTAN STUDIES | 02 | 00 |
| IS 111 | ISLAMIC STUDIES | 02 | 00 |
| SS 104 | ETHICS | 02 | 00 |
| Total | | 17 | 00 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 2nd Semester | | | |
| MTH 112 | LINEAR ALGEBRA AND ANALYTICAL GEOMETRY | 03 | 00 |
| MTH 103 | LINEAR ALGEBRA DIFFERENTIAL EQUATIONS AND ANALYTICAL GEOMETRY | 03 | 00 |
| MTH 125 | LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS | 03 | 00 |
| MTH 114 | PLANNING AND DATA ANALYSIS | 03 | 00 |
| MTH 115 | DIFFERENTIAL EQUATIONS AND LAPLACE TRANSFORMS | 02 | 00 |
| MTH 108 | APPLIED CALCULUS | 03 | 00 |
| PS 106 | PAKISTAN STUDIES | 02 | 00 |
| IS 111 | ISLAMIC STUDIES | 02 | 00 |
| SS 104 | ETHICS | 02 | 00 |
| Total | | 23 | 00 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 3rd Semester | | | |
| MTH 212 | DIFFERENTIAL EQUATIONS AND FOURIER SERIES | 03 | 00 |
| MTH213 | COMPLEX VARIABLES AND TRANSFORMS | 03 | 00 |
| MTH204 | DIFFERENTIAL EQUATIONS LAPLACE TRANSFORMS AND FOURIER SERIES | 03 | 00 |
| MTH224 | DIFFERENTIAL EQUATIONS | 03 | 00 |
| MTH223 | DIFFERENTIAL EQUATIONS AND COMPLEX VARIABLES | 03 | 00 |
| MTH227 | ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS | 03 | 00 |
| MTH236 | LINEAR ALGEBRA AND ANALYTICAL GEOMETRY | 03 | 00 |
| Total | | 21 | 00 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 4th Semester | | | |
| MTH206 | COMPLEX ANALYSIS STATISTICAL METHODS AND PROBABILITY | 03 | 00 |
| MTH 212 | DIFFERENTIAL EQUATIONS AND FOURIER SERIES | 03 | 00 |
| MTH224 | DIFFERENTIAL EQUATIONS | 03 | 00 |
| MTH241 | APPLIED STATISTICS | 03 | 00 |
| MTH226 | FOURIER SERIES AND TRANSFORMS | 02 | 00 |
| MTH220 | NUMERICAL ANALYSIS AND COMPUTER APPLICATIONS | 03 | 01 |
| MTH216 | COMPLEX VARIABLES AND LAPLACE TRANSFORMATIONS | 03 | 00 |
| MTH214 | STATISTICS AND PROBABILITY | 03 | 00 |
| MTH215 | NUMERICAL METHODS AND COMPUTATIONS | 03 | 01 |
| MTH213 | COMPLEX VARIABLES AND TRANSFORMS | 03 | 00 |
| MTH217 | LAPLACE TRANSFORMS AND DISCRETE MATHEMATICS | 03 | 00 |
| Total | | 32 | 02 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| MTH303 | LINEAR ALGEBRA AND NUMERICAL METHODS | 03 | 01 |
| MTH306 | COMPLEX VARIABLES AND TRANSFORMS | 03 | 00 |
| MTH317 | STATISTICS AND PROBABILITY | 03 | 00 |
| MTH336 | NUMERICAL ANALYSIS AND COMPUTER APPLICATIONS | 03 | 01 |
| MTH310 | NUMERICAL METHODS | 03 | 01 |
| MTH301 | NUMERICAL ANALYSIS AND COMPUTER PROGRAMMING | 03 | 01 |
| MTH 319 | NUMERICAL ANALYSIS | 03 | 01 |
| Total | | 21 | 05 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| MTH321 | APPLIED NUMERICAL METHODS | 02 | 01 |
| MTH317 | STATISTICS AND PROBABILITY | 03 | 00 |
| MTH336 | NUMERICAL ANALYSIS AND COMPUTER APPLICATIONS | 03 | 01 |
| Total | | 08 | 02 |

5.1 (b) Bachelor of Science in Mathematics (BSM)

Introduction:

The four-year Bachelor degree program in Mathematics is launched in 2019 by the department of Basic Sciences and related studies and the first batch is in progress, which intends to produce graduates with foundational knowledge, competency in critical thinking and proficient in using mathematical tools and techniques to model and solve complex problems. Due to the learned skills of critical thinking, mathematical modeling and problem solving make Mathematicians versatile and adaptable to work in areas including but not limited to academia, energy and environment, communications, business and finance, medical and health industry. New areas in science and engineering are constantly emerging where application of mathematical tools and techniques is required. The program, thus, is crucial to impart education and produce graduates with an understanding of mathematical theory, techniques and skills for their implementation to various fields of human interest.

Mission of Program

To provide an environment, where students can learn and become good Mathematicians and to be equipped

with insight and research skills potent to survive in the field of Mathematics, so as to inculcate them with strong communication, management and leadership skills.

Why BS in Mathematics at Department of Basic Sciences & Related Studies?

Department launched a 4-year BS (Mathematics) program in 2019. The program aims to provide students with a strong foundation and extensive knowledge in core mathematical areas – calculus, algebra, geometry, analysis, number theory, differential and integral equations, mathematical physics, numerical methods, fluid dynamics, statistics, operations research, optimization, modelling and simulation. Aim of BSRS is to inculcate creative thinking, make them capable of critical analysis and equip them with problem-solving skills; being the prime objectives of this program. Students would be given appropriate training to prepare them to render significant contribution towards the field as academicians, researchers, data analysts and decision makers. The entire program is in line with the mission and vision of Higher Education Commission of Pakistan with the intent to promote mathematical knowledge among students so that they realize the importance and use of mathematics in modern sciences.



The Courses:

| Course Code | Subject Name | Credit Hours | |
|---------------------|------------------------|--------------|-----------|
| | | Theory | Practical |
| 1st Semester | | | |
| MATH 105 | Calculus-I | 3 | 0 |
| MATH 110 | Set Theory | 3 | 0 |
| ENG 101 | Functional English | 3 | 0 |
| IS 111/ SS 104 | Islamic Studies/Ethics | 2 | 0 |
| MEBP 101 | Physics-I | 3 | 0 |
| PS106 | Pakistan Studies | 2 | 0 |
| Total | | 16 | 00 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|-------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 2nd Semester | | | |
| MATH 150 | Calculus II | 3 | 0 |
| MATH 155 | Discrete Mathematics & Graph Theory | 3 | 0 |
| MATH 160 | Statistics & Probability | 3 | 0 |
| ENG 102 | Communication Skills | 3 | 0 |
| CS 130 | Introduction to Computers | 3 | 0 |
| EL 127 | Physics-II | 3 | 0 |
| Total | | 18 | 00 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 3rd Semester | | | |
| MATH 205 | Differential Equations & Fourier Series | 3 | 0 |
| MATH 210 | Linear Algebra | 3 | 0 |
| ECO 230 | Economics | 3 | 0 |
| ENG 215 | Technical Report Writing & Presentation Skills | 3 | 0 |
| MATH 250 | Statics & Vector Analysis | 3 | 0 |
| Total | | 15 | 00 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|-----------------------------------|--------------|-----------|
| | | Theory | Practical |
| 4th Semester | | | |
| MATH 255 | Dynamics | 3 | 0 |
| MATH 270 | Number Theory | 3 | 0 |
| MATH 260 | Computer Programming C++ , Matlab | 3 | 0 |
| MATH 265 | Group Theory | 3 | 0 |
| MATH 275 | Topology | 3 | 0 |
| Total | | 15 | 00 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| MATH 305 | Algebraic Topology | 3 | 0 |
| MATH 310 | Differential Geometry & Tensor Analysis | 3 | 0 |
| MATH 315 | Partial Differential Equations | 3 | 0 |
| MATH 320 | Real Analysis- I | 3 | 0 |
| MATH 350 | Rings & Fields | 3 | 0 |
| Total | | 15 | 00 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| MATH 370 | Introduction to Simulator Software | 2 | 1 |
| MATH 355 | Transforms | 3 | 0 |
| MATH 360 | Complex Analysis | 3 | 0 |
| MATH 375 | Analytical Dynamics | 3 | 0 |
| MATH 365 | Real Analysis-II | 3 | 0 |
| Total | | 14 | 01 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|-------------------------|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| MATH 405 | Numerical Analysis-I | 3 | 1 |
| MATH 410 | Functional Analysis | 3 | 0 |
| MATH 415 | Fluid Mechanics | 3 | 0 |
| MATH 420 | Optimization Techniques | 3 | 0 |
| MATH 425 | Mathematical Physics | 3 | 0 |
| MATH 499 | Research Project | 0 | 03 |
| Total | | 15 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|------------------------|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| MATH 470 | Inferential Statistics | 3 | 0 |
| MATH 480 | Numerical Analysis-II | 3 | 1 |
| MATH 465 | Integral Equations | 3 | 0 |
| MATH 455 | Econometrics | 3 | 0 |
| MATH 460 | Operation Research | 3 | 0 |
| MATH 499 | Research Project | 0 | 03 |
| Total | | 15 | 04 |

Career Opportunities:

The program builds the students' potential for future and enables them with ability to apply mathematical tools / techniques for solution of engineering and scientific problems along with recognition of the need to remain engaged in life-long learning which ultimately will be beneficial for the department, University and the country.

5.2 Bachelor of Business Administration (BBA)

Mehran University Institute of Science, Technology and Development

Introduction

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 framework and their strategic management to achieve these objectives. It is established to be a centre 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.



The Faculty

Co-Director of MUISTD :

Prof. Dr. Arabella Bhutto
Ph: 022-2772255, Ext. 6700 - 04

Professor:

| | |
|-----------------------------------|---------------------------|
| Prof. Dr. Arabella Bhutto | Ph.D. (UK), Postdoc (USA) |
| Prof. Dr. Zahid Ali Memon | Ph.D. (China) |
| Prof. Dr. Iqbal Panhwer (Adjunct) | Ph.D. (SAU) |

Assistant Professors:

| | |
|--------------------------|--------------------------|
| Dr. Iffat Batool Naqvi | Ph.D. Austria |
| Dr. Kamleshwer Lohana | MS. Australia, Ph.D. UoS |
| Dr. Adnan Pitafi | Ph.D. China |
| Dr. Shah Muhammad Kamran | Ph.D. China |
| Dr. Arifa Talpur | Ph.D. UoS |

Lectures:

| | |
|------------------------|------------------------|
| Mr. Waqar Sether | MPA. UoS, MS. MUET |
| Ms. Mahvish Khakhely | MBA. Bahria University |
| Mr. Abdul Salam Mallah | MBA. IBA |
| Ms. Tooba A.Hashmi | MBA. SZABIST |
| Ms. Ghazala Tunio | MBA. SZABIST |



The Courses

| Course Code | Subject Name | Credit Hours | |
|---------------------|-----------------------------------|--------------|-----------|
| | | Theory | Practical |
| 1st Semester | | | |
| 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

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 2nd Semester | | | |
| 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 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 3rd Semester | | | |
| 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 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 4th Semester | | | |
| 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 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| 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 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| 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 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|------------------------------|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| 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 |
| | Financial Management | 03 | 00 |
| Total | | 15 | 00 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---------------------------------|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| 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, Saylani Welfare Trust, etc.

| Course Code | Subject Name | Credit Hours | |
|---------------------------------|-------------------------------------|--------------|-----------|
| | | Theory | Practical |
| Finance Elective Courses | | | |
| 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 |

| Course Code | Subject Name | Credit Hours | |
|-----------------------------|--|--------------|-----------|
| | | Theory | Practical |
| HRM Elective Courses | | | |
| 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 |

| Course Code | Subject Name | Credit Hours | |
|-----------------------------------|------------------------------|--------------|-----------|
| | | Theory | Practical |
| Marketing Elective Courses | | | |
| 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 | | 18 | 00 |

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.

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.



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.

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)

Directorate of English Language Development Center

Introduction

In 1988 a Directorate, named English Language Development Centre was established in collaboration with the British Council and the University Grant's Commission (Presently the Higher Education Commission of Pakistan) at Mehran University Jamshoro. This Directorate 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 MrBamber, Prof. Bodlo M Hassan took over as Director who received ELT training from UK and administrative training from USA. MrBodlo contributed the best way he could in field of research and development and helped the Directorate 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 Directorate was amongst five (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 since 2019-2020.



ELDC Objectives:

- 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.

Role of the Directorate/ Center / Section / Office Academic Programs

Directorate offers following courses for Undergraduate Studies

- i. Functional English/EAP
- ii. Communication skills for Engineers/ESP
- iii. Technical Report writing & Presentation skills
- iv. Technical & Scientific Writing

Directorate of Postgraduate Studies offers following research degrees

- MS/MPhil in Applied Linguistics

Approved Academic Programs started in 2019-2020

- BS in English Linguistics

Other Programs

- i. Teachers' training- ELT teachers' education
- ii. Computer Assisted Language Learning and Internet Mediated Language Learning
- iii. IELTS
- iv. Speaking classes
- v. TOEFL
- vi. GRE
- vii. GMAT
- viii. SAT
- ix. CSS/PCS Preparatory Classes

Achievements of the Directorate / Center / Section / Office:

BS in English Linguistics at English Language Development Center

ELDC has started four years BS English program. The major aim of the program is to help students understand core concepts of linguistics. The focus is on introducing the seminal work in the discipline of Linguistics. The 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. The entire program is in line with the vision of Higher Education Commission of Pakistan with intent to produce prospective leadership and knowledge building among our students.

The Faculty

Dr. Habibullah Pathan, Director

Phone: 022-2771286, Ext. 6600

Email: dir.eldc@admin.muuet.edu.pk

Associate Professor:

Dr. Habibullah Pathan,

Director

M. Ed. ELT. (Glasgow),
Ph.D. (Glasgow),
Postdoc. (MIT),
Cert Higer Ed. (Boston)
Ph.D. England

Dr. Shumaila Aijaz Memon

Assistant Professors:

Ms. Quratul Ain Mirza,

B.A Hons., M.A, M.Phil. (Pak),
Ph.D. Scholar (Sindh)
(On Study Leave)
M.A, M.Phil. (Pak),
Ph.D. Scholar (Malaysia)
(On Study Leave)
M.A, M.Phil (Pak)

Ms. Sahib Khatoon,

Mr. Shaukat Lohar,

Adjunct Faculty:

Dr. Ambreen Shahriar
Dr. Shabana Tunio,
Ms. Rosy Ilyas,

Ph.D. (UK)
Ph.D. (Malaysia)
M.Ed. TESOL (Leeds)

Lectures:

Ms. Sadia Aftab Memon,

MS English in Applied
Linguistics (MUET)

Ms. Sania Sachal Memon,

MS English in Applied
Linguistics (MUET)

Syed Waqar Ali Shah,
Ms. Um-e-FarwaThalho

Ph.D. Scholar, (Pakistan)
MPhil in English
(in progress), Pakistan

Mr. Jam Khan Mohammad,

B.A Hons., M.A, PGDip. (TEFL),
Ph.D. Scholar (Sindh)
(On Study Leave)

Ms. Shazia Muheodin
Mr. Ali Raza Khoso

MS English Linguistics (MUET)
MS English in Applied
Linguistics (MUET)

Ms. Shamshad Junejo

MS English in Applied
Linguistics (MUET)



Curriculum Structure

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

(a) BS Core Courses

| Sr. # | Name of the Subject | Credit Hours |
|-------|---|--------------|
| 1 | Functional English –I | 3 |
| 2 | Pakistan Studies | 2 |
| 3 | Basic Mathematics | 3 |
| 4 | Introduction to Philosophy | 3 |
| 5 | Introduction to English literature | 3 |
| 6 | Introduction to linguistics | 2 |
| 7 | Functional English-II | 3 |
| 8 | Islamic Studies | 3 |
| 9 | Introduction to literature (Medieval to Romantic Times) | 3 |
| 10 | Phonetics & phonology | 2 |
| 11 | Communication skills | 3 |
| 12 | Introduction to Syntax | 3 |
| 13 | Semantics | 3 |
| 14 | Introduction to Morphology | 2 |
| 15 | Sociolinguistics | 3 |
| 16 | Academic Reading & Writing | 3 |

(b) BS Specialization Courses

Courses (Please see details in Annexure-IB)

| Sr. # | Name of the Subject | Credit Hours |
|-------|---|--------------|
| 1 | Introduction to Critical Pedagogy | 3 |
| 2 | Introduction to Research Methodology | 3 |
| 3 | Pedagogical Grammar | 3 |
| 4 | English for Specific Purposes (ESP) | 3 |
| 5 | Language and Education | 3 |
| 6 | Introduction to Computational Linguistics | 3 |
| 7 | Lexical Studies | 3 |
| 8 | Discourse Studies | 3 |
| 9 | Psycholinguistics | 3 |
| 10 | Issues in Applied Linguistics | 3 |
| 11 | Language and Education II | 3 |
| 12 | Language & Gender | 3 |
| 13 | Language Teaching Methodologies | 3 |
| 14 | Pragmatics | 3 |
| 15 | Second Language Acquisition | 3 |
| 16 | World English | 3 |
| 17 | Corpus Linguistics | 3 |
| 18 | Syllabus Design and Testing | 3 |
| 19 | Stylistics | 3 |
| 20 | Language, Culture & Identity | 3 |
| 21 | Genre Analysis | 3 |
| 22 | Research Project in Linguistics | 3 |

General Courses

| Social Science | Management Sciences | Applied Sciences |
|--------------------|---------------------------|-----------------------------|
| Psychology | Entrepreneurship | Environment Science |
| Philosophy | Market & Finance | Introduction to statistics |
| Mass Communication | Human Resource Management | Health & Physical Education |
| Sociology | Organizational Behavior | Any other |
| Political Science | Total Quality Management | |
| Geography | Any other | |
| International | | |
| Relation | | |
| Education History | | |
| Economics | | |
| Social Work | | |
| Human Rights | | |
| Gender Studies | | |
| Anthropology | | |
| Law | | |
| Any other | | |

First Year (1st Semester)
(Please see details in Annexure-IA)

| Freshman-I | Course Title | Course Type | Credit Hours |
|--------------|--|----------------|--------------|
| 1 | Functional English | Compulsory | 3 |
| 2 | Pakistan Studies | Compulsory | 2 |
| 3 | Basic Mathematics | General Course | 3 |
| 4 | Introduction to Philosophy | General Course | 3 |
| 5 | Introduction to Lit. I: (Poetry & Drama) | Major | 3 |
| 6 | Introduction to Linguistics | Major | 3 |
| Total | | | 17 |

First Year (2nd Semester)
(Please see details in Annexure-IA)

| Freshman-II | Course Title | Course Type | Credit Hours |
|--------------|--|-------------|--------------|
| 1 | Academic and reading writing I | Compulsory | 3 |
| 2 | Islamic Studies | compulsory | 2 |
| 3 | GC I | General | 3 |
| 4 | GC II | General | 3 |
| 5 | Introduction to Lit. II: (Medieval to Romantics) | Major | 3 |
| 6 | Phonetics & Phonology | Major | 3 |
| Total | | | 17 |

Second Year (3rd Semester)
(Please see details in Annexure-IA)

| Sophomore-I | Course Title | Course Type | Credit Hours |
|--------------|------------------------|-------------|--------------|
| 1 | Communication skills I | Compulsory | 3 |
| 2 | CC-I | Compulsory | 2 |
| 3 | GC I | General | 3 |
| 4 | GC II | General | 3 |
| 5 | Introduction to syntax | Major | 3 |
| 6 | Semantics | Major | 3 |
| Total | | | 17 |

Third Year (6th Semester)
(Please see details in Annexure-IA)

| Junior-II | Course Title | Course Type | Credit Hours |
|--------------|-------------------------------|-------------|--------------|
| 1 | Lexical Studies | Major | 3 |
| 2 | Discourse Studies | Major | 3 |
| 3 | Psycholinguistics | Major | 3 |
| 4 | Issues in applied linguistics | Major | 3 |
| 5 | Language & Education II | Major | 3 |
| 6 | Language & Gender | Major | 3 |
| Total | | | 18 |

Second Year (4th Semester)
(Please see details in Annexure-IA)

| Sophomore-II | Course Title | Course Type | Credit Hours |
|--------------|-------------------------------|-------------|--------------|
| 1 | Academic reading & writing II | Compulsory | 3 |
| 2 | CC II | Compulsory | 2 |
| 3 | GC I | General | 3 |
| 4 | GC II | General | 3 |
| 5 | Introduction to Morphology | Major | 3 |
| 6 | Sociolinguistics | Major | 3 |
| Total | | | 17 |

Fourth Year (7th Semester)
(Please see details in Annexure-IA)

| Senior- I | Course Title | Course Type | Credit Hours |
|--------------|---------------------------------|-------------|--------------|
| 1 | Language Teaching Methodologies | Major | 3 |
| 2 | Pragmatics | Major | 3 |
| 3 | Second Language Acquisition | Major | 3 |
| 4 | Corpus Linguistics | Major | 3 |
| 5 | World English's | Major | 3 |
| Total | | | 15 |

Third Year (5th Semester)
(Please see details in Annexure-IA)

| Junior-I | Course Title | Course Type | Credit Hours |
|--------------|--------------------------------------|-------------|--------------|
| 1 | Critical pedagogy | Major | 3 |
| 2 | Introduction to Research Methodology | Major | 2 |
| 3 | Computational Linguistics | Major | 3 |
| 4 | Language and education I | Major | 3 |
| 5 | Pedagogical Grammar | Major | 3 |
| 6 | English for specific purpose (ESP) | Major | 3 |
| Total | | | 17 |

Elective Subjects

- i. Translation Studies Media
- ii. Discourse Analysis
- iii. World English

Fourth Year (8th Semester)
(Please see details in Annexure-IA)

| Senior- I | Course Title | Course Type | Credit Hours |
|-----------|------------------------------|-------------|--------------|
| 1 | Syllabus Designing & Testing | Major | 3 |
| 2 | Stylistics | Major | 3 |

| | | | |
|--------------|------------------------------|-------|-----------|
| 3 | Language, Culture & Identity | Major | 3 |
| 4 | Genre Analysis | Major | 3 |
| 5 | Research Project | Major | 6 |
| Total | | | 18 |

Elective Subjects

- i. Research Project
- ii. Language in
- iii. Education
- iv. English for Specific Purposes
- v. Anthropological Linguistics

Note:

1. The foundation courses in the Scheme of Study are mandatory for all Linguistics students.
2. A minimum of 5 courses are to be selected from the list in the 3rd Year (Semester 5 & 6).
3. Courses covering 30 Credit Hours are to be selected from the list in the final Year (Semester 7&8)
4. Universities may offer Electives other than those suggested in the Scheme of Study as per available expertise and resources.
5. General Courses (GC) are offered by the departments concerned.
6. Depending upon the results of need-based analyses the universities concerned are advised to design non-credit courses of up to two (02) semesters to improve the language skills of the students. It will be mandatory for students to pass these courses.

List of areas from which general courses (GC)

1. Information & Communication Technology in ELT & Education
2. EFL in Classroom-I (Reading & Writing)

3. EFL in Classroom-II (Listening & Speaking)
4. Introduction to Management
5. Introduction to Human Resources Management
6. Organizational Behavior
7. Introduction to Language Philosophy
8. Education Psychology

Laboratory Facilities:

TELDC has well established language laboratory with following facilities:

- Spacious laboratory room
- IT equipment, computers (25),
- Multimedia projector
- Boards

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 English Linguistics.

Career opportunities

After graduation, the candidate will be::

- able to join any school/college/university in Pakistan and abroad as a Linguistics or English teacher.
- eligible for admission in postgraduate programs in any reputed university in the country and around the globe.

Name and complete contact information of the contact person for further information

| | |
|--|---|
| Key Contact person – Name & Designation: | Dr. Habibullah Pathan, Director ELDC |
| Postal Address: | English Language & Development Center (ELDC), MUET, Jamshoro |
| Office phone numbers: | +92 2771286 |
| Office extension number(s) | 6600 |
| Official Email: | dir.eldc@admin.mueta.edu.pk, pathanhabibullah@yahoo.com |
| Cell number (organization head): | +92 3033399301 |
| Fax: | +92 22 277 1382 |





5.4 BACHELOR OF SCIENCE IN GARMENTS MANUFACTURING (BSGM)

Department of Textile Engineering

Introduction

In the recent decade, the Government of Pakistan has taken an initiative to build three garment cities in the country. The site has already been located in Karachi, Lahore and Faisalabad. Keeping in view the need of garment manufacturing graduates with concrete theoretical concepts and skill personnel who fulfil the requirement of Garment and denim industry, the department of textile engineering is launching 04-year B.S program in Garment manufacturing along with existing

programs. This program will provide graduates with specialized knowledge and skill (in the fields of denim manufacturing, garment fitting, comfort requirements, computerized apparel and garment designing, dyeing and finishing of garments) required for Garment and Denim industry.

Mission Statement of the Program

To establish conducive learning environment through excellence in education and industrial experience to produce professionals for garment and denim industries.



The Faculty

Chairman of the Department:

Prof. Dr. Rafique Ahmed Jhatial

Phone. 022-2771565, Ext. 6100

Email: chairman.te@admin.muett.edu.pk

Professor:

Dr. Rafique Ahmed Jhatial

Ph.D. UK

Dr. Eng. Zeeshan Khatri

Ph.D. Japan

Dr. Farooq Ahmed Arain

Ph.D. Pakistan

Associate Professor:

Dr. Mazhar Hussain Peerzada

Ph.D. UK

on sabbatical leave.

Dr. Awais Khatri

Ph.D. Australia

Dr. Iftikhar Ali Sahito

Ph.D. S. Korea

Dr. Shamshad Ali Shaikh

Ph.D. S. Korea

Dr. Samander Ali Malik

Ph.D. Germany

Assistant Professors:

Dr. Raja Fahad Qureshi

Ph.D. Pakistan

Ms. Sanam Irum Memon

M.E. Pakistan

(Ph.D. in progress)

Dr. Alvira Ayoub Arbab

Ph.D. S. Korea,

on sabbatical leave

Mr. Abdul Wahab Memon

M.E. Pakistan

on study leave abroad

Dr. Anam Ali Memon

Ph.D. (S. Korea)

Dr. Naveed Mengal

Ph.D. (S. Korea)

Dr. Noor Ahmed Sanbhal

Ph.D. (China)

Dr. Eng. Abdul Wahab Jatoi

Ph.D. (Japan)

Lecturers:

Ms. Sadaf Aftab Abbasi

M.E. (Pak),

on study leave abroad

Ms. Rabia Almas Arain

M.E. Pakistan

(Ph.D. in progress)

Mr. Nadir Ali Rind

M.E. (Pak),

on study leave abroad

Ms. Umaima Saleem

M.E. (Pak),

on study leave aboard

Mr. Abdul Khaliq Jhatial

M.E. (Pak),

on study leave abroad



Courses

| Course Code | Subject Name | Credit Hours | |
|---------------------|----------------------------------|--------------|-----------|
| | | Theory | Practical |
| 1st Semester | | | |
| GM111 | Textile Manufacturing Processes | 03 | 01 |
| GM112 | Applied Chemistry | 03 | 01 |
| ENG101 | Functional English | 03 | 00 |
| MATH102 | Basic Mathematics | 03 | 00 |
| EL118 | Basic Electrical and Electronics | 03 | 01 |
| Total | | 15 | 03 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 2nd Semester | | | |
| GM121 | Textile Raw Materials | 03 | 00 |
| GM122 | Introduction to Garment Manufacturing | 03 | 01 |
| GM123 | Applied Physics | 02 | 01 |
| PS106 | Pakistan Studies | 02 | 00 |
| IS111/SS104 | Islamic Studies/Ethics | 02 | 00 |
| ENG301 | Communication Skills | 03 | 00 |
| Total | | 15 | 02 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 3rd Semester | | | |
| GM211 | Yarns and Threads Manufacturing | 03 | 01 |
| GM212 | Mechanics of Garment Machines | 03 | 01 |
| GM213 | Garment Sizing and Pattern Making | 03 | 01 |
| GM214 | Personality Development and Character Building | 03 | 00 |
| MATH210 | Statistic and Probability | 03 | 00 |
| Total | | 18 | 00 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 4th Semester | | | |
| GM221 | Cutting and Sewing Techniques | 03 | 01 |
| GM222 | Woven Fabric Manufacturing | 02 | 01 |
| GM223 | Operations Management in Garment Industry | 03 | 00 |
| CS220 | Introduction to Computers and C++ Programming | 02 | 01 |
| GM224 | Organizational Behavior | 03 | 00 |
| Total | | 18 | 00 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|----------------------------------|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| GM311 | Knitted Fabric Manufacturing | 02 | 01 |
| GM312 | Colour Science and Coloration | 03 | 01 |
| GM313 | Denim Fabric Manufacturing | 02 | 01 |
| GM314 | Automation in Garment Industry | 02 | 00 |
| ENG302 | Technical and Scientific Writing | 03 | 00 |
| Total | | 12 | 03 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| GM321 | Garment Dyeing and Washing | 03 | 01 |
| GM322 | Nonwoven and Specialty Fabrics | 02 | 00 |
| GM323 | Embroidery Techniques | 03 | 01 |
| GM324 | Apparel Merchandizing and Sourcing | 03 | 00 |
| GM325 | 3D CAD for Garments | 02 | 01 |
| FIN323 | Financial Management | 03 | 00 |
| Total | | 16 | 03 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| MGS411 | Entrepreneurship | 03 | 00 |
| GM412 | Denim Fabric Finishing | 03 | 01 |
| GM413 | Textile and Apparel Testing | 03 | 01 |
| GM414 | Apparel Costing and Production Planning | 03 | 00 |
| GM499 | Final Year Project-I | 00 | 03 |
| Total | | 12 | 05 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| GM421 | Environmental and Social Compliances in Textiles | 03 | 00 |
| GM422 | Clothing Comfort | 03 | 00 |
| GM423 | Advances in Apparel Production | 02 | 01 |
| GM424 | Garment Packing and Pressing | 02 | 00 |
| GM425 | Supply Chain Management | 03 | 00 |
| GM499 | Final Year Project – II | 00 | 03 |
| Total | | 13 | 04 |

Laboratory Facilities

1. Yarn Manufacturing
2. Weaving
3. Knitting
4. Garment Manufacturing
5. Textile Chemical Processing
6. Textile Testing and Quality Control
7. Colour research
8. Textile Composites
9. Nonwoven Materials
10. Nano-materials
11. Software/CAD

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 1000 books and Research Journal on Textile and Garments.

Carrier Opportunities

After graduation, the candidate will be:

- able to join any Garment manufacturing and Denim processing industry in Pakistan and abroad as a management trainee or at similar position.
- able to join textile services sector such as testing, merchandising and auditing.
- able to establish his/her own company for garment and related items.
- eligible for admission in postgraduate programs in any reputed university in the country and around the globe. The areas of further study may be expanded to other science, management and applied sectors, such as technical and smart garment, textile value addition and so on.



5.5 BACHELOR OF SCIENCE IN COMPUTER SCIENCE (BSCS)

Department of Computer Systems Engineering

Introduction

The Department of Computer Systems Engineering of Mehran University of Engineering and Technology (MUET) Jamshoro is a well-recognized engineering department that has been producing quality engineers since 1984. Bachelor of Sciences in Computer Science (BSCS) is a new venture of Mehran University of Engineering and Technology. The BS Computer Science Degree aims to provide excellence in computer science studies to students and produce innovators, computer scientist, IT specialists and entrepreneurs who can transform and enrich IT hub and technological landscape of Pakistan.

BS CS is an intensive four-year program that combines rigorous coursework with exciting research opportunities based on real-world problems and industrial collaborations; thus ensuring a broad-based education which enables engineers to choose from diverse career paths, owing to departments carefully designed multi-disciplinary courses and degree programs.

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).

Mission of the Program

Our mission is to teach and prepare liberally educated, articulate, and skilled computer scientists and software developers for leadership, professional careers and for advanced studies. A central objective of our program is to contribute to society by advancing the fields of computer science and software development through innovations in teaching and research, thus enhancing student's knowledge through interactive instruction, global engagement, and experiential learning. The program will serve as a resource to inform society about innovations related to the production and uses of computers and software.

Why a BS in Computer Science in department of Computer Systems Engineering?

The program will serve as a resource to inform society about innovations related to the production and uses of computers and software. Graduates of the Computer Science department will be recognized as innovative leaders in the fields of computer science by their work in software development in a myriad of application areas, and through their work in advanced studies and research.



The Faculty

Focal Person: Bachelor of Computer Science

Prof. Dr. Shahnawaz Talpur

Office Phone: 92- 2772250-73, Ext. 4203

E-mail: shahnawaz.talpur@faculty.muuet.edu.pk

Professor:

Dr. Mukhtiar Ali Unar

Ph.D. United Kingdom

Associate Professor:

Dr. Sheeraz Memon

Ph.D. Australia

Dr. Shahnawaz Talpur

Ph.D. China

Dr. M. Moazzam Jawaid

Ph.D. United Kingdom

Assistant Professors:

Dr. Adnan Ashraf

Ph.D. Pakistan

Dr. Sammer Zai

Ph.D. South Korea

Dr. M. Ahsan Ansari

Ph.D. South Korea

Dr. Sanam Narejo

Ph.D. Italy

Dr. Bushra Naz

Ph.D. China

Dr. Irfan Ali Bhacho

Ph.D South Korea

Mr. Naveed Ahmed Jaffari

M.E. Pakistan

Mr. Arbab Ali Samejo

M.E. Pakistan

Mr. Rizwan Badar Baloch

M.E. Pakistan

Mr. Ali Asghar Manjotho

On Study Leave Abroad

Lectures:

Mr. Salahuddin Jokhio

On Study Leave abroad

Mr. Fawad Ali Mangi

On Study Leave abroad



The Courses

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

| 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 | 3 |

| 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 | 4 |

| 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 | 3 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--------------------------|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| CSC-301 | Operating Systems | 3 | 1 |
| CSC-302 | Computer Networks | 3 | 1 |
| MGT-122 | Principles of Management | 2 | 0 |
| | Elective-II | 3 | 1 |
| MATH-319 | Numerical Analysis | 3 | 0 |
| Total | | 14 | 3 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|-----------------------------------|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| CSC-351 | Software Engineering | 3 | 0 |
| CSC-352 | Theory of Automata | 3 | 0 |
| CSC-353 | Microprocessor & Embedded Systems | 3 | 0 |
| CSC-354 | Human-Computer Interaction | 3 | 0 |
| | Elective – III | 3 | 1 |
| Total | | 15 | 1 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|-------------------------|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| | Elective – IV | 3 | 1 |
| CSC-401 | Distributed Computing | 3 | 0 |
| CSC-402 | Artificial Intelligence | 3 | 1 |
| CSC-403 | Professional Ethics | 2 | 0 |
| CSC-499 | Thesis Project | 0 | 3 |
| Total | | 11 | 5 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| | Elective-V | 3 | 0 |
| CSC-451 | Entrepreneurship and Leadership skills. | 3 | 0 |
| CSC-452 | Data Sciences | 3 | 1 |
| | Elective-VI | 3 | 1 |
| CSC-499 | Thesis Project | 0 | 3 |
| Total | | 12 | 5 |

Laboratory Facilities

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

- i. Software Development Lab
- ii. Data Management and Internet Lab
- iii. Microprocessor Lab
- iv. Communication Lab
- v. Advance Software Application & Research Lab
- vi. Multimedia and Visual Design Studio Lab

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 technological advancements as 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 Science graduate engages in the evaluation and installation of software, hardware, and other types of technical 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 computer components, or as an independent consultant. Moreover, the computer Science graduate has a wide range of job opportunities available including; electronic, telecommunication and software development fields. The dedicated Computer Science graduate may seek a senior post such as filling the post of System Administrator, Lead System or Project Manager, Database Administrator etc.



5.6 AFFILIATED COLLEGES/INSTITUTES

Following Colleges/Institutes are affiliated with Mehran University.

1. **Government College of Technology, Hyderabad** is affiliated with Mehran University which offers courses in B.Tech.(Pass) and B.Tech.(Hons.) in Civil, Electrical and Mechanical Technologies. Mehran University conducts the examinations of this college and awards degrees. Further information of these courses may be obtained from:

The Principal,
Government College of Technology,
Hyderabad.
Phone: 022-9240124 & 022-9240122

2. **The Hyderabad Institute of Arts, Science and Technology, Hyderabad** is affiliated with Mehran University which offers courses in BS (Information Technology) and MS (Business Information Technology). The Pre-admission Test of the candidates will be conducted by the agency prescribed by Mehran University of Engineering and Technology, Jamshoro. Also Mehran University conducts the examinations of this Institute and award degrees. Further information of these courses may be obtained from:

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

3. **Hyderabad College of Science and Technology, Hyderabad** is affiliated with Mehran University which offers courses in B.Tech.(Pass) and B.Tech.(Hons.) in Civil, Electrical and Mechanical Technologies. Mehran University conducts the examinations of this college and awards degrees. Further information of these courses may be obtained from:

The Principal,
Hyderabad College of Science & Technology,
Hyderabad.
Phone: 022-3820223



Research and Development



6.1 Our PhD Faculty

Mehran UET is consistently ranked among the top engineering universities in the country, but what does that mean for our students?

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 and English language. It means that, from day one of your degree, you will be taught by experts at the forefront of their fields.

Your teachers are industry leaders and researchers at the forefront of discovery. At Mehran UET, you 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 with you.

6.2 Mehran University Research Journal of Engineering & Technology



The aim of Mehran University Research Journal of Engineering & Technology is to publish referred, well written original research articles that describe the latest research and developments in Engineering, Science & Technology. This journal is being published since 1982, and is registered with ISSN. This year the journal is included in Thomson Reuters (Clarivate Analytics – Master Journal List), this is indeed a matter of high prestige as only few research

journals of Pakistan are indexed in Thomson Reuters.

Mehran University Research Journal of Engineering & Technology is recognized by the Higher Education Commission (HEC) under Category X. The journal along with Thomson Reuters is also indexed by a number of international abstracting agencies including INSPEC, ACI (American Concrete Institute), British Library, Library of Congress and TRB (Transportation Research Board). This journal is a peer-reviewed journal and is published quarterly.

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, 1st International 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 IEEE 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 is 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 with 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 University 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 The University has signed Memorandum of Understanding with the following NATIONAL INDUSTRY-ACADEMIA:

| S.No | Name of Institute | Date of Agreement | Period |
|------|--|-------------------|---------------|
| 1. | Benazir Bhutto Shaheed Youth Development Program, Irrigation & Power Department, Government of Sindh, Pakistan. | 12-01-2009 | No Limit |
| 2. | Pakistan Atomic Energy Commission (PAEC), Islamabad. | 30-03-2009 | Ten Years |
| 3. | The United States Educational Foundation in Pakistan, Islamabad. | 11-12-2009 | No time limit |
| 4. | Isra University, Hyderabad, Sindh, Pakistan. | 16-08-2010 | No time limit |
| 5. | The Promotion of Education PEF Foundation, USA, Islamabad. | 4-03-2013 | No time limit |
| 6. | Indus University, Karachi. | 10-04-2014 | Five Years |
| 7. | Ms. Rafhan Maize Products limited, Kotri. | 13-05-2014 | No time limit |
| 8. | Pakistan Space & Atmosphere Research Commission (SUPARCO), Karachi, Pakistan. | 13-02-2015 | Five Years |
| 9. | Ms. Indus Resource Center, Karachi. | 23-02-2015 | No time limit |
| 10. | Pakistan Steel Mills, Karachi. | 25-06-2015 | No time limit |
| 11. | Pakistan Council of Research in Water Resources, Islamabad. | 03-08-2015 | Five Years |
| 12. | Sindh Irrigation & Drainage Authority (SIDA), Hyderabad. | 03-08-2015 | Five Years |
| 13. | Sindh Agriculture University Tandojam, Tandojam. | 03-08-2015 | Five Years |
| 14. | Water and Power Development Authority, Lahore. | 21-09-2015 | Five Years |
| 15. | Analytical Measuring Systems (Private) Limited, Karachi. | 5-11-2015 | No time limit |
| 16. | Pakistan Institute of Management (PIM), Karachi. | 07-12-2015 | Five Years |
| 17. | Institute of Cost & Management Accountants of Pakistan, Karachi. | 10-02-2016 | Five Years |
| 18. | Pakistan Council for Science and Technology (PCST), Ministry of Science & Technology, Government of Sindh, Karachi. | 16-11-2016 | Five Years |
| 19. | Eco Science Foundation (ECOSF) & Technology Times, Karachi. | 16-11-2016 | Three Years |
| 20. | Irrigation Department, Government of Sindh "Capacity Building of Officers / Officials of Sindh Irrigation Department". | 23-09-2016 | Five Years |
| 21. | NORDTEC, Karachi. | 23-12-2016 | Five Years |
| 22. | Sustainable Development Policy Institute, Islamabad. | 05-05-2017 | Five Years |
| 23. | National Textile University, Faisalabad. | 01-06-2017 | Five Years |
| 24. | Archorma, Textile Chemical Company, Karachi. | 1-08-2017 | Five Years |
| 25. | Institute of Business Administration (IBA), Karachi. | 25-08-2017 | Three Years |
| 26. | British Council Pakistan, Karachi. | 19-07-2017 | Three Years |
| 27. | Sindh Engro Coal Mining Company (SECMC), Karachi. | 04-10-2017 | Two Years |
| 28. | World Wide Funds for Nature Pakistan, Karachi | 22-01-2018 | Two Years |
| 29. | Confucius Class Rooms at Cadet College Petaro, Jamshoro. | 06-03-2018 | Four Years |

6.4.3 The University has signed Memorandum of Understanding with the following INTERNATIONAL INDUSTRY-ACADEMIA:

| S.No | Name of Institute | Date of Agreement | Period |
|------|---|-------------------|---------------|
| 1. | University of Leeds, UK. | 28-06-2005 | No time limit |
| 2. | Middle East Technical University, Ankara, Turkey. | 13-09-2006 | No time limit |
| 3. | Aalborg University Esbjerg, Denmark. | 09-06-2007 | No time limit |
| 4. | University of Bedfordshire, UK. | 20-11-2008 | No time limit |
| 5. | University of Malaya, Malaysia. | 20-09-2011 | No time limit |
| 6. | University of Limerick, Limerick, Ireland. | 12-10-2013 | No time limit |
| 7. | Hacettepe University, Turkey. | 12-08-2014 | Five Years |
| 8. | University Technology Malaysia, Malaysia. | 25-11-2014 | Five Years |
| 9. | Faculty of Textile, Science and Tech., Shinshu University, Japan. | 22-12-2014 | Five Years |
| 10. | China University of Mining and Technology, Xuxhou, China. | 26-04-2015 | Five Years |
| 11. | University of Utah, USA. | 11-08-2015 | Five Years |
| 12. | Clothing and Designing Faculty, Minjiang University, China. | 21-10-2015 | Five Years |
| 13. | Perdana School of Science, Technology & Innovation Policy, University Technology Malaysia, Kuala Lumpur, Malaysia. | 16-11-2016 | Five Years |
| 14. | Korea Institute of Science & Technology Evaluation & Planning (KISTEP), Republic of Korea. | 16-11-2016 | Three Years |
| 15. | Charles Sturt University, Australia. | 05-05-2017 | Five Years |
| 16. | AMC-Metropolitan College-Athens-Greece. | 06-10-2017 | Five Years |
| 17. | University of Nottingham, UK. (This revised agreement applies to the University of Nottingham's campuses in the United Kingdom, China & Malaysia). | 22-02-2018 | Five Years |
| 18. | Montan Universitaet, Leoben, Republic of Austria. | 22-02-2018 | No time limit |

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



CAMPUS LIFE



7.1 Student Teacher Centre

This University has developed befitting and communal facilities for students and staff like, Student Teacher Centre. Student Teacher Centre has been constructed over an area of 20000 sft. as per Vision & perspective Plan of the University. The Centre consists of the following facilities for the students and staff.

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 Library

The Mehran University of Engineering & Technology Library & Online Information Center contains more than 1,68,000 books related to Engineering, Science, Technology, Social Science and Arts and Humanities. Access to 29 E-databases for electronics journals and e-books are available on-line within the university campus and outside the campus under Digital Library Program - A Project of Higher Education Commission.

There are more than 26000 text books in the Book Bank which are lent to students for one semester. 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. This service is further enhanced by cooperation among Muslim Countries under COMSTECH.

The Mehran University of Engineering & Technology Library & Online Information Center also offers following services:

7.2.1 Internet Facilities

MUET Library & Online Information Center provides the internet facilities to postgraduate and undergraduate students for their research projects, assignments and online lecturers work for which PCs are installed in the Online Information Center. The MUET Library & Online Information Center also offered Wi-Fi service inside and outside the Library Building.

7.2.2 E-Services

MUET Library & Online Information Center provides articles, abstract bibliographic information to the faculty members, researchers and undergraduate students under Whatsapp and email service.

There are blogs <http://muetlfacultycoordination.blogspot.com> to give the access of books recommended in teaching plan. Another blog <http://www.muetoic.blogspot.com> to give the awareness trainings regarding HEC Digital Library, <http://muetdigitallibrary.blogspot.com> access of E-books, Journals, Tutorials and Thesis's Guidance, video lectures, dictionaries and encyclopedias etc.

7.2.3 Digital Library Awareness Program

The MUET library offers the trainings program regarding awareness of HEC digital library resources, e-library, science direct and IEEE to the faculty members, post graduate students and undergraduate students of the University.

7.2.4 Online Public Access Catalogue (OPAC)

The Catalog of books is marc-21 based and accessible through library of Congress gateway <http://www.loc.gov/z39.50> serving one point access interface for books catalog, full text electronic journals and e-books on web.

7.2.7 Timings

The library is heavily used by the students, faculty members and researchers and is open from 8:00 am to 12:00 mid-night including Saturday and Sunday.

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. To accomplish the main objective, the office also establishes the following objectives:

- 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 Agency and the University.

Dr. Amir Mahmood Soomro

Focal Person, Student Financial Aid Office
Phone # (Exchange) +92 22 2772250-70
(Ext. 7715) (Direct) +92 22 2771274,



7.4 Quality Enhancement Cell (QEC)

In order to provide Quality Higher Education, Mehran University of Engineering & Technology is striving hard to adopt dynamic changes in the education system. Working on the mission, the University implemented Quality Management System under ISO 9001:2000 and was certified in September 2003. Quality Management System (QMS) was developed and implemented by the ISO-9000 Cell established in year 2000 and was redesigned as QEC on 15th February 2007 on the receipt of PC-1 from Quality Assurance Agency of Higher Education Commission and its scope was extended by adding the function of implementation of Self-Assessment Mechanism in the University.

The QEC is on the way of developing quality assurance processes and methods of evaluation to affirm that the quality of provision and the standard of awards are being maintained and to foster curriculum, subject and staff development, together with research and other scholarly activities. The QEC serves as the king pin to achieve the objective of quality learning standards by auditing academic standards and the quality of teaching, learning and management in each subject area. It promotes public confidence that the quality and standards of the award of degrees, management and overall quality of knowledge being imparted by the institutions are enhanced and safeguarded.

7.4.1 QEC's Core Processes

- Implement and continuously improve quality management system of the university as ISO 9001:2015 standard.
- Institutional Performance Evaluation (IPE) as per HEC guidelines.
- Self-Assessment of Postgraduate program as per HEC guidelines.
- PhD and MS/MPhil Program review as per HEC guidelines.
- Online Feedback system

7.4.2 Key achievements of QEC:

- Implemented ISO 9001:2015 quality management system requirements and got 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 (2017-18)

Contact us:

Quality Enhancement Cell (QEC)
 Mehran University of Engineering & Technology, Jamshoro.
 Office Phone: +92-22-2109013 (Ext: #7712)
 E-mail: qec@admin.muett.edu.pk
 Website Link: <http://www.muett.edu.pk/qec>

7.5 Transport

The university has a fleet of buses to facilitate the students, running on various routes between the campus and Jamshoro, Hyderabad / Qasimabad / Latifabad / Kotri. Students have to pay nominal transport charges on annual basis for the use of this facility". In addition to that, the University have different type of Equipment / Vehicle viz-Mechanical Sweeper, Aerial Platform, Garbage Compactor etc. for cleaning the entire campus to make the environment better. As well as University has planned to procure Solar Panel shuttles for students, which will use in university premises.

Engr. Qazi Riaz Hassan Qureshi

Incharge Transport Section/ Director (Services)
 Phone: (022)2109073 and (022)2771153



7.6 Information and Communication Processing Centre

ICPC Stands for “Information & Communication Processing Center”. It 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 ICP Center is having a powerful and scalable switching fabric that carries gigabit traffic on fiber optics backbone and interconnects all buildings of 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
- Trainings & Internships
- Smart ID Cards
- Security Surveillance System

- SMS Alert Service
- Web Services

Engr. Saleem Ahmed Memon

Director

Phone: (022) 2772277 Ext: 6000

Email: dir.icpc@admin.muett.edu.pk

7.7 Medical Assistance

A part-time dispensary has been established in Students Teacher Center and Girls Hostel for resident students and in girls hostel for female students. Adequate quantities of essential medicines are also available in the dispensary for the minor ailments. Major sickness problems are referred to Liaquat University Hospital, which is quite nearby. An ambulance is also available for any emergency.

7.8 Sports Facilities

The Directorate of Sports has been arranging wide range of indoor as well as outdoor sports activities and Fitness / health services to the university students on daily basis. The University has arranged facilities of highly specialized nature of training techniques, coaching camps and indoor and outdoor sporting events for boarding as well day scholar students. Inter batch, inter departmental and inter hostel sporting events for Boys &



Girls are regular feature of our university sports calendar.

We have a state of the art Sports Complex in the campus, having a modern Gymnasium and fitness center facilities, equipped with latest fitness machines to provide our students a best possible sporting and healthy activities environment.

The University also hosts/organizes and participates in a number of Inter University Sports events under HEC every year regularly. Our University students have won Gold, Silver and Bronze Medals in such events. The new batch students are encouraged to participate 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. every students gets a chance to play, compete and represent Mehran University sports teams.

Organizing of Sports week/ Gala event is becoming a very popular annual event at Mehran in which a huge number of students participate in a wide range of indoor as well as outdoor sports and games.

Engr. Saleem Ahmed Memon

Director

Ph.: 022-2109103, 022-2772250 (Ext. # 2026)

Email: dir.sports@admin.muett.edu.pk

<http://www.muett.edu.pk/directorates/directorates-sports>

7.9 Students' Advisory Committee

Mehran University Students' Advisory Committee was formed to bridge the gap between administration, teaching community and students. Committee helps students to organize academic and social activities and also to resolve their academic and legal grievances. The committee leads, directs, and administers overall functions of student counseling, hostel residence, student societies and discipline. The important function of Student Affairs Office is to enhance the quality of student life both in and outside of the classroom.

The Student Affairs Office functions as a friend and guide of a student, it administers their needs from the time they step in the

University, to their graduation. We provide proactive support and capacity building services to promote co- curricular activities to enhance interpersonal skills of the students. Using the platform of Students' Affairs Office, students can build strong relationships with their peers, faculty, administration and other stakeholders.

The formation of Mehran University Students' Advisory Committee is as under:

Dr. Tanweer Hussain

Professor, Department of Mechanical Engineering,

Advisor Students' Affairs

Direct: +92 22 2109136

Landline: 0222772251-72 (Ext. 2030)

Email: tanweer.hussain@faculty.muett.edu.pk
asa@admin.muett.edu.pk

Dr. Iffthikhar Ali Sahito

Associate Professor, Department of Textile Engineering.

Deputy Advisor Students' Affairs

Landline: 0222772251-72 (Ext. 6116)

Email: iffthikhar.sahito@faculty.muett.edu.pk

Dr. Ismah Farah Siddiqui

Assistant Professor, Department of Software Engineering

Deputy Advisor Student' Affairs

Landline: 0222772251-72

Email: isma.farah@faculty.muett.edu.pk

Dr. Faheemullah Shaikh

Assistant Professor, Department of Electrical Engineering

Deputy Advisor Students' Affairs

Landline: 0222772251-72 (Ext: 2512)

Email: faheemullah.shaikh@faculty.muett.edu.pk

Engr. Mansoor Ali

Assistant Professor, Department of Electronics Engineering

Deputy Advisor Students' Affairs

Landline: 0222772251-72

Email: mansoor.ali@faculty.muett.edu.pk



**MUET SHAHEED ZULFIQAR ALI BHUTTO
CAMPUS, KHAIRPUR**



8.1 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/429/09 on April 02, 2009 established a constituent College of Mehran University of Engineering & Technology, Jamshoro named as Mehran University College of Engineering & Technology, Khairpur Mir's.

The College was upgraded as Campus of MUET, Jamshoro vide Notification No. Estt:(Teach:)/30 of 2013 on 19-02-2013 and named as MUET Shaheed Zulfiqar 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 University of Engineering & Technology, 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 University of Engineering & Technology Jamshoro.

8.2 Officers of the Campus

1. **Prof. Dr. Abdul Sami Qureshi**
Pro-Vice Chancellor, MUET, SZAB Campus
2. **Prof. Dr. Hyder Abbas Musavi**
Director Academics
3. **Dr. Mujeeb Iqbal Soomro**
Director Administration
4. **Dr. Syed Naveed Raza Shah**
Chairman,
Civil Engineering Department
5. **Prof. Dr. Hassan Ali Khan Durrani**
Chairman/In-charge Transport
Mechanical Engineering Department
6. **Dr. Mazhar Hussain Baloch**
Chairman,
Electrical Engineering Department
7. **Dr. Muhammad Yakoob Soomro**
Chairman/Focal Person SFAO,
P&G Engineering Department
8. **Prof. Dr. Rafique Ahmed Memon**
Chairman,
Basic Science & Related Studies
9. **Dr. Noman Qadeer Soomro**
Focal Person
Software Engineering Department
10. **Dr. Muhammad Rafique Naich**
In-charge Chairman,
Electronic Engineering Department
11. **Dr. Sajid Hussain Qazi**
Focal Person,
Industrial Liaison/ORIC
12. **Dr. Sajjad Ali Mangi**
Additional Director QEC/ISO
13. **Mr. Nadeem Ahmed Tunio**
Focal Person Examinations/
Additional Provost Hostels

14. **Dr. Bilal Shams Memon**
In-charge MIS
15. **Mr. Zeeshan Memon**
In-charge Finance
16. **Mr. Abdul Rasheed Phulpoto**
Deputy Director ICPC
17. **Mr. Sajjad Ali Memon**
Project Director
18. **Mr. Allah Bachayo Memon**
Deputy Librarian
19. **Pir Syed Asif Hussain Shah Jilani**
Assistant Director Sports
20. **Pir Nadeem Ahmed Sarhandi**
Security Officer
21. **Mr. Ayaz Ali Memon**
Student Welfare Officer

8.3 Fields of Study and Teaching Faculty

Mehran University of Engineering and Technology, 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. Electronic Engineering
6. Software Engineering

8.4 Department of Basic Sciences & Related Studies (BSRS)

8.4.1 The Department

This department teaches the various courses of Mathematics including Statistics, Computer Science, Pakistan Studies, Islamic Studies/Ethics, Functional English, Presentation & Technical Writing and Communication Skills., etc. The Department has its own beautiful state of art building. In addition, the department has a furnished computer Lab equipped with Core i7 for fifty (50) students.

8.4.2 The Faculty

Chairman of the Department:

Prof. Dr. Rafique Ahmed Memon

Ph.: 0243-715365 Ext: 7681

Email: chairman.bsrs@muetkhp.edu.pk

Professor:

Dr. Rafique Ahmed Memon

Ph.D. (Maths): Pakistan

Assistant Professors:

Dr. Hadi Bux Chijjan

Ph.D. (Islamic Studies): Pakistan

Mr. Kaleemullah Bhatti

M.Sc. (Maths): Pakistan

On Study Leave

Mr. Jalil Ahmed Chandio

M.Phil. (Pak Studies): Pakistan

Mr. Nek Muhammad Katber

MS (Maths): Pakistan

Ms. Quratulain Talpur

M.A.(English): Pakistan

Lecturers:

Mr. Ashfaq Hussain Soomro

M.Phil. (English): Pakistan

Mr. Sanaullah Memon

MS (Maths): Pakistan

Mr. Abdul Majid Indhar

M.Sc. (Maths): Pakistan

Dr. Basheer Ahmed Drus

Ph.D. (Islamic Studies): Pakistan

Mr. Masoom Ali Shahani

MS (Maths): Pakistan

Mr. Sajid Ali Magsi

MA (English): Pakistan

Mr. Fayaz Ahmed Khuhro

M.Sc. (Maths): Pakistan

Visiting Teacher

Ms. Naina Khalid Hussain

M.Sc. (Maths): Pakistan

Visiting Teacher

Mr. Riaz Husain Soomro

MA (English): Pakistan

Research Associate



8.5 Department of Civil Engineering

8.5.1 About the Department

The Department of Civil Engineering of the Mehran University of Engineering & Technology (MUET), Shaheed ZA Bhutto (SZAB) Campus Khairpur Mir's provides state-of-the-art, essential, and advance 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 offers the variety of fields of specialization to the final year students by assigning them a thesis project in their field of interest. The thesis projects may be specific to a specialization of civil engineering like Structural Engineering, Material Engineering, Geotechnical Engineering, Highway and Transportation Engineering, Hydraulics, Irrigation and Drainage Engineering, Construction Management 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 other construction projects. During the summer vacations the students are also sent on various Civil Engineering projects for internship. This is to expose them to practical engineering practices being implemented. The department also has a software Laboratory which provides computing facility using application of various software related to the field of Civil Engineering and utilization of Computer methods in Civil Engineering. The Department also offers various postgraduate degrees such as Master of

Engineering in Civil Engineering.

The department follows Outcome Based Education (OBE) system to fulfill the higher education requirement of Pakistan Engineering Council (PEC) as per Washington Accord. Evaluation of students through various means strictly follows the OBE criteria and based on specific course learning objectives associated with each course. This student centric approach focuses on outcomes from individual student by the end of the course.

8.5.2 Teaching Staff

Chairman of the Department:

Dr. Syed Naveed Raza Shah
 B.E (QUEST, Nawabshah),
 M.E (Steel Structures) (University of East London, United Kingdom),
 Ph.D. (Structural Engineering & Materials) (University of Malaya, Malaysia)
 E-mail: chairmancivil@muetkhp.edu.pk
 Phone # 0243-9280312 Ext 7301

Professor:

Prof. Dr. Kanya Lal Kahtri
 Ph.D. (Irrigation Engineering)
 University of Queensland, Australia.

Associate Professors:

Dr. Syed Naveed Raza Shah
 Ph. D (Structural
 Engineering & Materials)
 University of Malaya, Malaysia.

Assistant Professors:

Dr. Muhammad Jaffar Memon
 Ph.D. (Environmental
 Engineering), BUCT, China

Dr. Ghulam Shabir Solangi
 Ph.D. (Hydraulics,
 Irrigation & Drainage),
 USPCAS-W, MUET,
 Jamshoro, Pakistan

Dr. Sajjad Ali Mangi
 Ph.D. (Materials Engineering),
 UTHM, Malaysia

Engr. Abdul Razzaque Sandhu
 M.E. (Structural Engineering),
 NED UET, Pakistan

| | |
|---------------------------|--|
| Engr. Dildar Ali Mangnejo | M.E. (Geotechnical Engineering), QUEST, Nawabshah, Pakistan (On Study Leave) |
| Engr. Rabia Soomro | M.E. (Transportation Engineering), MUET, Jamshoro, Pakistan (On Study Leave) |

Lecturers:

| | |
|-------------------------------|---|
| Engr. HemuKarira | M.E. (Geotechnical Engineering), MUET, Jamshoro, Pakistan |
| Engr. Touqeer Ali Rind | M.E. (Transportation Engineering), MUET, Jamshoro, Pakistan |
| Engr. Dhanesh Kumar | M.E. (Materials Engineering), UTM, Malaysia |
| Engr. Sanghaa Bhutto | M.E. (Materials Engineering), UTM, Malaysia |
| Engr. Mudasar Hussain Janwery | B.E., MUET, SZAB Campus, Pakistan |

Laboratory Engineers:

| | |
|------------------------------|---|
| Engr. Tajik Mustafa Shah | M.E. (Structural Engineering), MUET, Jamshoro, Pakistan |
| Engr. Ghulam Rasool Siddiqui | M.E. (Structural Engineering), QUEST, Nawabshah, Pakistan |

5.8.3 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. Computer Laboratory
5. Software Laboratory
6. Highways Engineering Laboratory
7. Soil Mechanics Laboratory
8. Environmental Engineering Laboratory
9. Engineering Drawing Hall

5.8.4 Courses

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 1st Semester | | | |
| CE 102 | Geometrical Engineering | 02 | 01 |
| CE 106 | Civil Engineering Materials | 03 | 01 |
| CE 116 | Engineering Mechanics | 03 | 01 |
| FE 101 | Functional English | 03 | 00 |
| CS 146 | Introduction to Computing and Programming | 02 | 01 |
| Total | | 13 | 04 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---------------------------|--------------|-----------|
| | | Theory | Practical |
| 2nd Semester | | | |
| CE 111 | Surveying-I | 03 | 01 |
| MTH 108 | Applied Calculus | 03 | 00 |
| IS111/ SS104 | Islamic Studies/Ethics | 02 | 00 |
| PS 106 | Pakistan Studies | 02 | 00 |
| CE 121 | Civil Engineering Drawing | 02 | 01 |
| CE 125 | Engineering Geology | 03 | 01 |
| Total | | 15 | 03 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 3rd Semester | | | |
| CE 202 | Surveying II | 03 | 01 |
| CE 206 | Transportation Engineering | 03 | 00 |
| CE 211 | Strength of Materials I | 03 | 00 |
| MTH 204 | Differential Equations, Fourier Series and Laplace Transforms | 03 | 00 |
| CE 226 | Fluid Mechanics and Hydraulics | 03 | 01 |
| Total | | 15 | 02 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 4th Semester | | | |
| CE 221 | Theory of Structures | 03 | 00 |
| CE 240 | Applied Hydraulics | 03 | 01 |
| CE 231 | Construction Engineering | 03 | 00 |
| CE 250 | Strength of Materials II | 03 | 00 |
| MTH 206 | Complex Analysis, Statistical Methods and Probability | 03 | 00 |
| CE 246 | Architecture and Town Planning | 02 | 00 |
| Total | | 17 | 01 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| MTH 303 | Linear Algebra and Numerical Methods | 03 | 01 |
| CE 306 | Structural Analysis | 03 | 00 |
| CE 345 | Plain and Reinforced Concrete | 03 | 01 |
| CE 350 | Environmental Engineering -I | 02 | 01 |
| CE 355 | Project Management | 02 | 00 |
| CE 246 | Architecture and Town Planning | 02 | 00 |
| Total | | 13 | 3 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| CE 375 | Hydrology | 02 | 01 |
| CE 326 | Soil Mechanics | 03 | 01 |
| CE 336 | Reinforced and Pre-Stressed Concrete | 03 | 01 |
| CE 316 | Steel Structures | 03 | 00 |
| CE 445 | Quantity Surveying and Estimation for civil works | 03 | 00 |
| Total | | 14 | 03 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---------------------------------|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| CE 406 | Structural Design and Drawing | 03 | 01 |
| CE 411 | Geotechnical Engineering | 03 | 01 |
| CE 416 | Irrigation Engineering | 03 | 01 |
| CE 360 | Highway and Traffic Engineering | 03 | 01 |
| CE 498 | Project / Thesis-I | 00 | 03 |
| Total | | 12 | 07 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| CE 426 | Foundation Engineering | 03 | 00 |
| CE 431 | Environmental Engineering-II | 03 | 00 |
| CE 436 | Construction Planning and Management | 03 | 00 |
| CE 441 | Drainage Engineering | 02 | 00 |
| CE 499 | Project/Thesis-II | 00 | 03 |
| Total | | 11 | 03 |

8.5.5 Career Opportunities

Our graduates can choose career as employee in renowned organizations related to the Civil Engineering. We seek to understand the world, invent, and lead with creative design. Our students define the future. The knowledge provided at the Civil Engineering Department, MUET, SZAB Campus also enables students to 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 academician 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.



8.6 Department of Electrical Engineering

8.6.1 About the Department

The Department of electrical engineering at Mehran University of Engineering and Technology (MUET) 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.

8.6.2 The Faculty

Chairman of the Department:

Dr. Mazhar Hussain Baloch
Phone: 0243-715365, Ext: 7401
Email: chairmanelectrical@muetkhp.edu.pk

Professor:

Prof. Agha Zafarullah Pathan M.Sc. Germany
(On Contract)

Associate Professor:

Dr. Mazhar Hussain Baloch Ph.D. (SJTU, China),
Post.Doc (USM, Malaysia)

Assistant Professors:

| | |
|----------------------------|--------------------------------|
| Engr. Shakir Ali Soomro | M.E. Pakistan |
| Engr. Nadeem Ahmed Tunio | M.E. Pakistan |
| Dr. Mohsin Ali Tunio | Ph.D. Malaysia |
| Engr. Touqeer Ahmed Jumani | M.E. Pakistan (On Study Leave) |
| Engr. Irfan Ahmed Bajkani | M.E. Pakistan |
| Engr. Ahsanullah Memon | M.E. Pakistan (On Study Leave) |
| Dr. Sajid Hussain Qazi | Ph.D. Malaysia |

Lecturers:

| | |
|---------------------------------|--------------------------------|
| Engr. Kalsoom Baghat | M.E. Pakistan (On Study Leave) |
| Engr. Shafqat Hussain Memon | M.E. Pakistan |
| Engr. Rasool Akhtar Alias Osama | B.E. Pakistan |

8.6.3 Laboratory Facilities

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:

S. No. List of Laboratories

01. Power System
02. Instrumentation & Control
03. Basic Electrical Engineering
04. High Voltage Engineering
05. Basic/Applied Electronics Engineering
06. Communication System
07. Electrical Machines
08. Power Electronics
09. Computer Lab
10. Software Lab
11. Project Lab
12. Seminar Library

8.6.4 Laboratories Staff

Laboratories Staff

1. Engr. Muhsan Ali Mari (Lab.Engineer) (on Study Leave)
2. Engr. Asif Ali Solangi (Lab.Engineer) (on Study Leave)
3. Engr. Basheer Ahmed (Lab.Engineer) (on Study Leave)
4. Engr. Zeeshan Anjum (Lab.Engineer) (on Study Leave)
5. Engr. Musavir Hussain (Lab.Engineer)
6. Mr. Noman Khan Pathan (Lab Supervisor)
7. Mr. Fida Mangi (Lab Supervisor)

8.6.5 Course Outline

Courses of B.E in Electrical Engineering (revised scheme w.e.f May 2019)

| 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 | 4 |

| 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 | 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 | 3 | 0 |
| MTH-213 | Complex Variables & Transforms | 3 | 0 |
| Total | | 14 | 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-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 | | 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 |
| EL-425 | Power Distribution & Utilization | 3 | 1 |
| EL-499 | Senior Design Project | 0 | 3 |
| Total | | 9 | 6 |

19EL to onwards w.e.f from 1st semester.

Effective from 5th semester for 17EL & 18EL batches and onwards.

For F16EL batch effective from 7th semester

8.6.6 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.

8.7 Department of Electronic Engineering

8.7.1 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 lead 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.

8.7.2 The Faculty

In-Charge Chairman of the Department:

Dr. Muhammad Rafique Naich

Phone: 0243-686074 Ext: 7701

Professor

Prof. Dr. Hyder Abbas Musavi Ph.D. Pakistan

Assistant Professors

Dr. Muhammad Rafique Naich Ph.D. China.
Mr. Halar Haleem Memon M.E. Pakistan.
(On Study Leave)
Ms. Kaneez Fatima M.E. Pakistan

Lecturers

Mr. Maroof Panhwar M.E. Pakistan
Ms. Bushra Shaikh M.E.-Mehran UET Jamshoro, Pakistan
Ms. Darshna Tulsi Das M.E. Pakistan.

Lab Engineer

Ms. Shadab Soomro M.E. Pakistan.

8.7.3 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
7. Basic Electrical Engineering Lab
8. Power Electronics Lab
9. Digital Electronics & Microprocessor Lab
10. Signal Processing and FPGA Lab
11. Industrial Automation and Robotics Lab
12. Advanced Electronics Lab

8.7.4 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 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--------------------------------|--------------|-----------|
| | | Theory | Practical |
| 4th Semester | | | |
| 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 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|----------------------------------|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| 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 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--------------------------------|--------------|-----------|
| | | Theory | Practical |
| 6th Semester | | | |
| 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 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 7th Semester | | | |
| 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 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|--------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| 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 |

8.7.5 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.

8.8 Department of Mechanical Engineering

8.8.1 About The Department

Mechanical Engineering emerged in the 19th century as a result of developments in the field of physics. The field has continually evolved to incorporate advancements in technology, and mechanical engineers today are pursuing developments in such fields as composites, mechatronics, and nanotechnology. Mechanical Engineering overlaps with aerospace engineering, metallurgical engineering, civil engineering, electrical engineering, petroleum engineering, manufacturing engineering, chemical engineering, and other engineering disciplines. Mechanical engineers may also work in the field of Biomedical engineering specifically with biomechanics, transport phenomena, bio-mechatronics, bio-nanotechnology, and modeling of biological systems, like soft tissue mechanics. To put it simply, Mechanical Engineering deals with anything that moves, including the human body, a very complex machine. Mechanical engineers learn about materials, solid and fluid mechanics, thermodynamics, heat transfer, control, instrumentation, design, and manufacturing to understand mechanical systems. Specialized Mechanical Engineering subjects include, cartilage-tissue engineering, energy conversion, and laser-assisted materials. The American Society of Mechanical Engineers (ASME) currently lists 36 technical divisions, from advanced energy systems and aerospace engineering to solid-waste engineering and textile engineering. Mechanical Engineering field requires an understanding of core concepts including mechanics, kinematics, thermodynamics, materials science, structural analysis, and electricity. Mechanical engineers use these core principles along with tools like computer-aided engineering, and product lifecycle management. These tool are used to design and analyze manufacturing plants, industrial equipment and machinery, heating and cooling systems, transport systems, aircraft, watercraft, robotics, and medical devices.

8.8.2 The Faculty

Chairman of the Department:

Prof. Dr. Hassan Ali Khan Durrani

Professor

Dr. Hassan Ali Khan Durrani Ph.D. Pakistan

Associate Professors

Dr. Sadiq Ali Shah Ph.D. United Kingdom

Assistant Professors

Dr. Muhammad Ali Abro Ph.D. South Korea

Dr. Mujeeb Iqbal Soomro Ph.D. South Korea

Lecturers

| | |
|---------------------------|-------------------------------|
| Engr. Ali Nawaz Sanjrani | M.E Pakistan |
| Engr. Majid Ali Wassan | M.E Malaysia |
| Engr. Aqeel Ahmed Bhutto | M.E Pakistan On Study Leave |
| Engr. Bilawal Ahmed Bhayo | M.Sc. Malaysia On Study Leave |
| Engr. Jahanzeb Soomro | M.E Pakistan On Study Leave |
| Engr. Qadir Nawaz Shafiq | M.E Pakistan On Study Leave |
| Engr. Aurangzaib Wadho | M.E Pakistan |
| Engr. Abdul Ahad Noohani | M.E Pakistan |
| Engr. Muhammad Haris Khan | M.E Pakistan |
| Ali Nawaz Bhroi | B.E Pakistan On Study Leave |
| Engr. Danish Ali Memon | M.E Pakistan On Study Leave |
| Engr. Zaheer Ahmed Odho | B.E Pakistan On Study Leave |
| Engr. Awais Junejo | M.E Pakistan On Study Leave |
| Engr. Talib Hussain Ghoto | M.E Pakistan On Study Leave |

8.8.3 Laboratory Facilities

Following labs are established in this department to cater the practical/ experimental requirements of the program offered.

1. Auto-Mobile Laboratory
2. Aerodynamics Laboratory
3. CAD/ CAM Laboratory
4. CNC Laboratory
5. Engineering Statics Laboratory
6. Fluid Mechanics Laboratory
7. Heat Transfer Laboratory
8. Heating Ventilation & Air Conditioning Laboratory
9. Material Testing Laboratory
10. Mechanics of Machine Laboratory
11. Mechanical Vibrations Laboratory
12. Mechatronics Laboratory
13. Solar Energy Laboratory
14. Thermodynamics Laboratory
15. Fitting Shop
16. Machine Shop
17. Welding Shop
18. Wood Workshop

8.8.4 Courses

| Course Code | Subject Name | 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 Code | Subject Name | 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 102) | 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 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 255) | Computer programming | 2 | 1 |
| | Total | 15 | 02 |

| Course Code | Subject Name | 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 Code | Subject Name | Credit Hours | |
|---------------------|--|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| (ME 302) | Heat & Mass Transfer | 3 | 1 |
| (ME 312) | Applied Aerodynamics | 3 | 1 |
| (EE 425) | 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) | Digital Control System | 2 | 1 |
| (ME 462) | Embedded Systems Design | 3 | 1 |
| (ME 442) | Technical Report Writing & Presentation Skills | 3 | 1 |
| (ME 499) | Electronic Engineering Project-1 | — | 3 |
| Total | | 11 | 06 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| (ME 452) | Renewable and Emerging Energy Technologies (REET) | 3 | 0 |
| (ME 472) | Maintenance Engineering | 3 | 0 |
| (ME 482) | Project Management & Optimization | 3 | 1 |
| (ME 412) | Automobile Engineering | 3 | 1 |
| (ME 499) | Project/Thesis-II | 0 | 3 |
| Total | | 11 | 5 |

8.8.5 Career Opportunities

The breadth of the Mechanical Engineering discipline allows graduates a variety of career options. Their education enables them with the creative thinking that allows them to design an exciting product or system, the analytical tools to achieve their design goals, the ability to overcome all constraints, and the teamwork needed to design, market, and produce a system.

Mechanical engineering graduates are sought by employers in almost all sectors of the engineering industry. These include:

- Aerospace industry – Research, Design, Manufacturing and Maintenance of Aerospace Equipment
- Automotive industry – Designs, Manufactures, and Maintenance of Automobiles
- Defense industry – Design Fabrication and Maintenance of Defense Equipment
- Electronics industry – Design and Manufactures of components from automotive to medicine and 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 – Design, Manufacturing and Maintenance of rail system components from trains and tracks to electrical power systems and train control system

8.9 Department of Petroleum and Natural Gas Engineering

8.9.1 About 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 aim of the Department is to offer undergraduate studies in Petroleum and Natural Gas Engineering program and the curriculum is designed in a way to equip students with the knowledge and skills to tackle engineering problems in oil and gas industry and can propose emerging solutions. The curriculum includes courses for evaluating oil and gas reserves and reservoirs, design engineering applications for well drilling, completion, work over, production and surface facilities, analyze reservoir performance and production optimization of hydrocarbon recovery, perform reservoir simulation and visualization, understand new techniques to enhance oil recovery and conduct of reservoir management principles. Furthermore interdisciplinary subjects such as geology, computer application & programming, mathematics, linear algebra and Laplace transform are also included in the course curriculum. The curriculum is updated and approved by the Higher Education Commission (HEC) and Pakistan Engineering Council (PEC) and designed on the basis of fulfilling following Program Educational Objectives (PEOs):

1. To produce petroleum graduates capable of practicing knowledge to promote oil and gas industry.
2. To produce skilled engineers having potential of leading the petroleum industry.
3. To provide quality research for innovative solutions to enhance oil and gas production to support global fuel demand.

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. Up to now, seven undergraduate batches (K-10PG, K-11PG, K-12PG, K-13PG, K-14PG, K-15PG and K-16PG) have been successfully graduated in 2014, 2015, 2016, 2017, 2018 and 2019 respectively. Most of the graduates have been employed by oil and gas operating exploration companies, services companies, refineries and marketing companies in the country and abroad. Number of graduates of the Department have also acquired scholarships in foreign countries for their higher studies and post-graduation in various engineering disciplines such as petroleum, energy, chemical, earth science and interdisciplinary.

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 & Tech 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. 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 OnePetro Subscription that is granted by OnePetro 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; OnePetro is worldwide one of the industry's largest online technical content library that allow 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.

8.9.2 The Faculty

Chairman of the Department:

Prof. Dr. Muhammad. Yakoob Soomro
Phone: 0243-715364-65 Ex.7601

Professor:

Prof. Dr. M. Yakoob Soomro Ph.D. University of Salford, UK
(On Contract)

Assistant Professor:

Engr. Asadullah Memon M.E. MUET Jamshoro, Pakistan
(On Study Leave)

Dr. Bilal Shams Memon Ph.D. University of Petroleum, China
Engr. Imran Ali Memon M.E. OGDCL

(Institute of Science & Technology, Islamabad), Pakistan

Engr. Faisal Hussain Memon M.E. MUET Jamshoro, Pakistan
Engr. Ghulam Abbas M.E. Universiti Teknologi
PETRONAS (UTP), Malaysia

Lecturers:

Engr. Adnan Aftab Nizamani M.Phil. Universiti Teknologi
Malaysia (UTM), Malaysia

Engr. Abdul Samad Shaikh M.E. MUET Jamshoro, Pakistan
Engr. Sundar Sham Jeswani M.E. MUET Jamshoro, Pakistan
Engr. Shoaib Ahmed Memon M.E. MUET Jamshoro, Pakistan
Engr. Zaheer Hussain Zardari M.E. MUET Jamshoro, Pakistan
Eng. Waseem Mumtaz Kalwar M.E. MUET Jamshoro, Pakistan
Engr. Temoor Muther M.E. MUET Jamshoro, Pakistan

8.9.3 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. Petroleum Software Lab
6. General Computer Lab
7. Core Analysis Laboratory (under tendering)

8.9.4 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 | 3 | 0 |
| Total | | 14 | 3 |

| Course Code | Subject Name | 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 | 3 | 0 |
| Total | | 14 | 2 |

8.9.5 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, Eni, OMV, UEP, Schlumberger and Weatherford.

8.10 Department of Software Engineering

8.10.1 About the Department

Software Engineering is the field of technology that is related to the application of theoretical approaches to the development, operation and maintenance of software. It is not only about the simple and rather stereotypical knowledge of only writing code for programs, but 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 the 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

Thus, software engineering is an important aspect of technology and it will bring significant changes and at the same time be a major factor in future developmental periods of the world. The department offers undergraduate degree program i.e. B.E (Software Engineering) this program provides in-depth knowledge of the subject, wherein students will develop all skills regarding the design and implications of modern Software Engineering through integrated courses. The courses are revised from time to time keeping in view the software needs of the emerging market at national & international level.

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.

8.10.2 The Faculty

In-charge Chairman of the Department:

Dr. Nouman Qadeer Soomro
Phone: 0243-715365 Ext: 7801

Assistant Professor:

| | |
|--------------------------|-----------------------------------|
| Dr. Nouman Qadeer Soomro | Ph.D. China |
| Engr. Sajida Raz Bhutto | M.E. Pakistan (On Study Leave) |
| Engr. Irfanullah Memon | M.S. Pakistan |

Lecturers:

| | |
|--------------------------|-----------------------------------|
| Engr. Munazza Zaib | M.E. Pakistan (On Study Leave) |
| Engr. Eman Shahid | M.E. Pakistan |
| Engr. Qamar-U-Nisa Kamal | M.E. Pakistan |
| Engr. Bakh Shaikh | M.S. Pakistan |
| Engr. Soonh Taj | M.E. Pakistan |

8.10.3 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. 3D Modeling and Visualization Laboratory

8.10.4 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 | 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 |

| 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 | 01 |

| 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 | 3 | 0 |
| Total | | 14 | 03 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|---------------------------------------|--------------|-----------|
| | | Theory | Practical |
| 5th Semester | | | |
| 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 |

| 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 | | 14 | 03 |

| 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 |
| SW499 | Thesis/Project | 0 | 3 |
| Total | | 12 | 05 |

| Course Code | Subject Name | Credit Hours | |
|---------------------|------------------------------|--------------|-----------|
| | | Theory | Practical |
| 8th Semester | | | |
| SW424 | Simulation & Modelling | 3 | 0 |
| SW425 | Cloud Computing | 3 | 1 |
| SW426 | Software Quality Engineering | 3 | 1 |
| SW499 | Thesis/Project | 0 | 3 |
| Total | | 09 | 09 |

8.10.5 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.

As the use of the Internet, E-mail, and other communications systems increases, firms from Electronics to Engineering which were traditionally associated as unrelated disciplines will expand, hiring more and more such Software Engineers. Engineering firms specializing in building bridges and power plants, for example, also hire Software Engineers for designing and developing advanced geographic data systems and automated drafting systems. Communication Industries also require Software Engineers, with whose help the personal communications market could be tapped into. 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 on this course will be sought after in many organizations.



8.11 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 the Fiber link with HEC PERN bandwidth of 64 Mbps. Voice (Intercom) Service is also provided through the latest EPABX installed at ICPC. Official Email accounts and Microsoft DreamSpark accounts are also provided to Faculty/Staff and Students of Campus.

8.12 Transport Facilities

The campus provides transport service to the students, faculty and staff along the various routes.

8.13 Sports Facilities

The campus has established a sports section that arranges various indoor and outdoor sports activities on its own as well as in liaison with the Directorate of Sports of the University. However, the sports complex has been planned on the premises of the residential complex for students & staff. Facilities of Gymkhana Khairpur are also being availed for sports activities.

8.14 Surveillance

The campus has a state-of-the-art surveillance system with a central control room to monitor & review the Campus premises for security concerns.

8.15 Library

The Campus Library contains more than 28000 books related to Engineering Science and Technology and its allied subjects. There are more than 7000 (approximately) in the form of textbooks.

The Campus Library offers Video Conferencing with excellent image and sound quality, which includes video conferencing equipment. Two separate group discussion rooms are also

available for students and faculty.

In Library & Online Information Center students and faculty members are also provided internet facility to use Digital Library for their project work for which the latest computers are installed in the Online Information Center of the library.

To access interface for books catalog, full-text electronic journals and e-books are available on the 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 on Holidays during the examination period. Professional staff available at service points to meet the needs of the readers.

8.16 Residential Accommodation

The residence facility for student & staff is being provided at Residential Complex (New Land). The two (02) hostels of Boy Students, one of girl students, and one of Faculty staff hostel are functional. A third boy's hostel is under construction.

8.10 Cafeteria

The Campus cafeteria was inaugurated in December-2015 with a sitting capacity of approximately 100 people. The cafeteria is providing a mess facility to the staff and teachers along with students.

8.11 Auditorium

The Auditorium with a capacity of approximately 500 people is under construction and it is expected that it will be completed very soon.



RULES AND PROCEDURES FOR ADMISSION

A. For BE Engineering, B.Arch. and B.CRP Programs

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. However, if any admitted student desires to seek admission in any discipline under Self-Financing Scheme or University Support Program, he/she may apply for the same and submit an undertaking on the stamp paper to the effect that he/she will not claim admission under Regular Scheme of the year. Similarly, if the admitted student under SFS or USP, if 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 their 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 the Higher Secondary School Certificate (HSC Part-I) Pre-Engineering Examination or equivalent with Physics, Chemistry and Mathematics in Annual Examinations of 2019 or have passed Higher Secondary School Certificate (HSC Part-I) Pre-Engineering Examination or equivalent with Physics, Chemistry and Mathematics earlier up to Annual Examinations of 2017 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 First Year Intermediate (General Science Group) in Annual Examination 2019 or have passed First Year Intermediate (General Science Group) earlier up to Annual Examination of 2017 and have secured at least 60% marks (Grace marks shall not be considered) are also eligible for their 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 First Year Intermediate (Pre-Medical Group) in Annual Examination 2019 or have passed First Year Intermediate (Pre-Medical Group) earlier up to Annual Examination 2017 and have secured at least 60% marks (Grace marks shall not be considered) are eligible for their admission only in Bio-Medical Engineering and they will not claim their admission in any other discipline. The candidates who have passed the above examinations or equivalent examinations before Annual Examination 2017 shall not be eligible for admission. The admission of any candidate, who would be unable to secure 60% or above marks in his / her Final Intermediate (HSC) will be cancelled immediately and his / her tuition fee will be reimbursed in full without deduction. Besides that, the students of BS programs of the University can also apply for admission in any of the engineering programs.

- (ii) Candidates who have passed three years diploma from any recognized Board of Technical Education in Pakistan in any approved discipline (Civil, Electrical, Mechanical, Electronics, Chemical, Glass & Ceramics, Petroleum and Architecture Technology) before last date of submission of admission form or earlier up to Annual Examination 2017, the result of Diploma 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 under Category-B in the same discipline only under the Regular Scheme. The candidates who have passed three years Diploma before Annual Examination 2017 shall not be eligible for admission.
- (iii) Those students, who were admitted to any other institutes/universities before applying for admission in Mehran University 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 will be advertised in the prominent newspapers of national and regional repute as well as on University website www.muft.edu.pk. The candidates who intend to apply for admission must follow the guidelines mentioned on the Directorate of Admissions website admissions.muft.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 as indicated. The Mehran University authorities after receipt of application and processing fee will email admit slips to candidates for pre-admission test only. 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 will be decided by the admission office of the University after scrutinizing the provided documents. The eligibility criteria for admission is given 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% score in 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 will be prepared by calculating the 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:

| | Percentage of Marks in: | Multiplying Weightage |
|---|---|-----------------------|
| A | Secondary School Certificate - Matriculation:(Science Group). | 0.10 |
| B | Higher Secondary School Certificate Part-I, First Year: Intermediate (Pre-Engineering Group/Pre-Medical Group/General Science Group or equivalent adjusted marks*). | 0.30 |
| C | Pre-admission Test: | 0.60 |

For example, if a candidate has secured 70% marks in SSC, 60% marks in HSC **Part-I** and 50% marks in Pre-admission Test; his/her CPN would be: $70 \times 0.1 + 60 \times 0.3 + 50 \times 0.6 = 7 + 18 + 30 = 55$ (Percent)

* Adjusted marks means marks secured in HSC examination plus additional marks if any, as defined in Clause 9.11, minus marks to be deducted as defined in Clause 9.12.

Note: All nominees local/foreigners should submit the result of HEC, SAT, UETs, NUST or officially approved National/International Organization or other International-Level Test 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 results of Pre-admission Test, a comprehensive merit list will be prepared for each district/category and a number of candidates' equivalent to the reserved seats of concerned category will be 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 will be held at Mehran University, Jamshoro on the dates as announced in the newspapers and also on MUET website: www.mueta.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-I, First Year** (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).
- (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 www.admissions.mueta.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 only be disallowed to appear in the interview but also be disqualified from the process of admission.

The admission in discipline 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.

9.6 Distribution of Seats

The distribution of seats for admissions will be 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. 21 seats have also been reserved for the candidates of Karachi Division. The admission in various districts/categories at Mehran University of Engineering & Technology, Jamshoro and Mehran University of Engineering & Technology, SZAB Campus, Khairpur Mirs' will be 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 will be 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** and **Category-C** 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**. Besides that, 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 University of Engineering and Technology, Jamshoro.

| Category | 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 | 2 | 2 | 1 | 1 | 2 | 29 |
| | Ghotki | 1 | 1 | 1 | 2 | 2 | 3 | 2 | 2 | 1 | 1 | 1 | 2 | 3 | 3 | 2 | 1 | 1 | 2 | 31 |
| | Khairpur | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 3 | 2 | 2 | 2 | 3 | 4 | 4 | 3 | 1 | 1 | 1 | 46 |
| | S. Benazirabad | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 2 | 1 | 1 | 1 | 2 | 4 | 3 | 2 | 1 | 1 | 1 | 33 |
| | N.Feroze | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 3 | 1 | 1 | 1 | 33 |
| A.2 | Larkana | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 2 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 1 | 1 | 1 | 31 |
| | Kamber / Shahdadkot | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 28 |
| | Shikarpur | 1 | 1 | 1 | 2 | 2 | 3 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 27 |
| | Jacobabad | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 28 |
| | 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 | 5 | 6 | 5 | 3 | 2 | 4 | 89 |
| | Mafiari | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 31 |
| | 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 | 2 | 1 | 1 | 2 | 1 | 29 |
| | Dadu | 5 | 6 | 7 | 4 | 5 | 5 | 6 | 3 | 3 | 2 | 2 | 2 | 3 | 4 | 4 | 2 | 2 | 3 | 68 |
| | Jamshoro | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 37 |
| | Thatta | 3 | 3 | 4 | 2 | 3 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 3 | 2 | 2 | 1 | 1 | 1 | 36 |
| | Sujawal | 3 | 3 | 2 | 2 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 32 |
| | Badin | 6 | 6 | 7 | 4 | 5 | 5 | 5 | 3 | 3 | 2 | 2 | 3 | 4 | 4 | 4 | 2 | 2 | 3 | 70 |
| A.4 | Mirpurkhas | 5 | 6 | 6 | 3 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 57 | |
| | Umarkot | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 42 |
| | Tharparkar | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 57 |
| | Sanghar | 7 | 8 | 8 | 6 | 6 | 7 | 7 | 3 | 3 | 3 | 2 | 4 | 6 | 5 | 5 | 3 | 2 | 4 | 89 |
| A.5 | Karachi | - | - | - | 2 | 2 | 2 | 2 | 2 | 0 | 2 | 2 | - | 1 | 3 | 2 | - | 1 | - | 21 |
| B | Diploma Holders | 2 | 2 | 2 | 2 | - | - | - | 2 | - | - | - | 2 | 1 | - | - | - | - | - | 13 |
| C | MUE | 12 | 8 | 6 | 4 | 4 | 2 | 4 | - | - | - | - | 2 | - | - | - | - | 2 | - | 44 |
| | Total | 78 | 80 | 80 | 72 | 75 | 79 | 81 | 47 | 38 | 40 | 40 | 50 | 60 | 63 | 60 | 30 | 37 | 40 | 1050 |

CE Civil Engineering

EL Electrical Engineering

ME Mechanical Engineering

ES Electronic Engineering

CS Computer Systems Engineering

EE Environmental Engineering

TL Telecommunication Engg.

SW Software Engineering

CH Chemical Engineering

IN Industrial Engg. & Management

MN Mining Engineering.

BM Biomedical Engineering

MT Metallurgy & Materials Engg.

PG Petroleum & Nat. Gas Engg.

AR Architecture

CRP City & Regional Planning

TE Textile Engineering.

MTE Mechatronics Engineering

RULES AND PROCEDURES FOR ADMISSION

Table-9.6.2: Distribution of Seats for various Districts (Urban/Rural basis) in Sindh Province at Mehran University of Engineering and Technology, Jamshoro.

| Category | Districts | Number of Seats | | |
|----------|--------------------------|-----------------|-------------|-------------|
| | | Urban Areas | Rural Areas | Total Seats |
| A.1 | Sukkur | 10 | 19 | 29 |
| | Ghotki | 03 | 28 | 31 |
| | Khairpur Mirs | 05 | 41 | 46 |
| | Shaheed Benazirabad | 05 | 28 | 33 |
| | Naushehro Feroze | 02 | 31 | 33 |
| | Total | 25 | 147 | 172 |
| A.2 | Larkana | 09 | 22 | 31 |
| | Kamber / Shahdadkot | 03 | 25 | 28 |
| | Shikarpur | 04 | 23 | 27 |
| | Jacobabad | 04 | 24 | 28 |
| | Kashmore | 02 | 15 | 17 |
| | Total | 22 | 109 | 131 |
| A.3 | Hyderabad | 74 | 15 | 89 |
| | Matiali | 02 | 29 | 31 |
| | Tando Muhammad Khan | 04 | 28 | 32 |
| | Tando Allahyar | 05 | 24 | 29 |
| | Dadu | 10 | 58 | 68 |
| | Jamshoro | 03 | 34 | 37 |
| | Thatta | 02 | 34 | 36 |
| | Sujawal | 00 | 32 | 32 |
| | Badin | 06 | 64 | 70 |
| | Total | 106 | 318 | 424 |
| A.4 | Mirpurkhas | 11 | 46 | 57 |
| | Umerkot | 00 | 42 | 42 |
| | Tharparkar | 00 | 57 | 57 |
| | Sanghar | 14 | 75 | 89 |
| | Total | 25 | 220 | 245 |
| A.5 | All Districts of Karachi | 21 | | 21 |
| | Grand Total | 199 | 794 | 993 |

Table-9.6.3: Description of Remaining Categories of Candidates Seeking Admission.

| Category | Description | Seats |
|------------|--|-----------|
| (B) | Candidates who have passed Diploma Examination in Civil, Mechanical, Electrical from Government Technical College/Polytechnic Institute/Govt. Habib College of Technology and are domiciled in the districts of Categories-A.3 and A.4. The domicile for admission of diploma holders in Electronics, Petroleum, Chemical/Glass & Ceramics and Architecture Technology will be of Categories A.1, A.2, A.3 and A.4. Diploma holders shall be considered for admission under this category only. | 13 |
| (C) | <p>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:</p> <ol style="list-style-type: none"> i. First preference will be 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 will be 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 will be 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 will be 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 will be 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 will be 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 will be 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 will be 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. <p>Note: The merit with regard to the Category-C will be determined as per policy of the University. A copy of the appointment order, confirmation order and Affidavit regarding relationship with candidate of the employee be attached with the admission form. The students of the University who have been selected on MUE Quota (under Category-C of the Prospectus) shall not be eligible to apply again in any program (BE or BS) of the University under MUE Quota.</p> | 44 |

RULES AND PROCEDURES FOR ADMISSION

Table-9.6.4: Distribution of Seats for various Districts and Disciplines at Mehran University of Engineering and Technology, SZAB Campus, Khairpur Mirs'.

| Category | Description | Number of Seats and Disciplines | | | | | | |
|----------|--|---------------------------------|-----------|-----------|-----------|-----------|-----------|------------|
| | | CE | EL | ME | PG | SW | ES | TOTAL |
| A.1 | Sukkur | 04 | 05 | 04 | 04 | 03 | 04 | 24 |
| | Ghotki | 05 | 05 | 04 | 04 | 04 | 03 | 25 |
| | Khairpur | 07 | 07 | 07 | 06 | 05 | 06 | 38 |
| | S. Benazirabad | 05 | 05 | 03 | 03 | 03 | 02 | 21 |
| | Naushahro Feroze | 05 | 05 | 03 | 03 | 03 | 02 | 21 |
| A.2 | Larkana | 03 | 03 | 03 | 02 | 02 | 02 | 15 |
| | Kambar / Shahdaskot | 02 | 03 | 03 | 02 | 02 | 02 | 14 |
| | Shikarpur | 02 | 03 | 02 | 02 | 02 | 02 | 13 |
| | Jacobabad | 02 | 03 | 03 | 02 | 02 | 02 | 14 |
| | Kashmore | 02 | 02 | 01 | 01 | 01 | 02 | 09 |
| A.3 | Hyderabad | 02 | 02 | 02 | 01 | 02 | 01 | 10 |
| | Matiari | 00 | 00 | 01 | 01 | 01 | 00 | 03 |
| | T.M. Khan | 00 | 01 | 00 | 01 | 01 | 00 | 03 |
| | T. Allahyar | 01 | 01 | 00 | 00 | 00 | 01 | 03 |
| | Dadu | 01 | 01 | 01 | 02 | 01 | 02 | 08 |
| | Jamshoro | 01 | 01 | 00 | 01 | 01 | 01 | 05 |
| | Thatta | 00 | 01 | 01 | 01 | 00 | 01 | 04 |
| | Sujawal | 01 | 00 | 00 | 01 | 00 | 01 | 03 |
| A.4 | Badin | 01 | 01 | 01 | 02 | 01 | 01 | 07 |
| | Mirpurkhas | 01 | 01 | 01 | 01 | 01 | 01 | 06 |
| | Umerkot | 01 | 00 | 01 | 01 | 01 | 01 | 05 |
| | Tharparkar | 01 | 01 | 01 | 01 | 01 | 01 | 06 |
| A.5 | Sanghar | 02 | 02 | 02 | 01 | 02 | 01 | 10 |
| | All districts of Karachi | 01 | 01 | 00 | 01 | 01 | 00 | 04 |
| C | Employees of MUET, SZAB Campus, Khairpur Mirs' | 03 | 02 | 01 | 01 | 01 | 01 | 09 |
| | Total | 53 | 56 | 45 | 45 | 41 | 40 | 280 |

Explanation of Abbreviations:

CE Civil Engineering

EL Electrical Engineering

SW Software Engineering

ME Mechanical Engineering

PG Petroleum & Natural Gas Engineering

ES Electronics Engineering

RULES AND PROCEDURES FOR ADMISSION

Table-9.6.5: Distribution of Seats for Urban and Rural areas of the Districts in Sindh Province, Mehran University of Engineering & Technology SZAB Campus Khairpur Mirs' (Category-A) and (Category-C).

| Category | Description | Number of Seats | | |
|----------|--|-----------------|------------|------------|
| | | Urban Areas | RuralAreas | TotalSeats |
| A.1 | Sukkur | 07 | 17 | 24 |
| | Ghotki | 02 | 23 | 25 |
| | Khairpur | 07 | 31 | 38 |
| | S. Benazirabad | 04 | 17 | 21 |
| | Naushehro Feroze | 01 | 20 | 21 |
| | Total | 21 | 108 | 129 |
| A.2 | Larkana | 05 | 10 | 15 |
| | Kamber/Shahdadkot | 01 | 13 | 14 |
| | Shikarpur | 01 | 12 | 13 |
| | Jacobabad | 03 | 11 | 14 |
| | Kashmore | 02 | 07 | 09 |
| | Total | 12 | 53 | 65 |
| A.3 | Hyderabad | 08 | 02 | 10 |
| | Matiari | 00 | 03 | 03 |
| | Tando Muhammad Khan | 00 | 03 | 03 |
| | Tando Allahyar | 00 | 03 | 03 |
| | Dadu | 02 | 06 | 08 |
| | Jamshoro | 00 | 05 | 05 |
| | Thatta | 00 | 04 | 04 |
| | Sujawal | 00 | 03 | 03 |
| | Badin | 00 | 07 | 07 |
| | Total | 10 | 36 | 46 |
| A.4 | Mirpurkhas | 02 | 04 | 06 |
| | Umerkot | 00 | 05 | 05 |
| | Tharparkar | 00 | 06 | 06 |
| | Sanghar | 01 | 09 | 10 |
| | Total | 03 | 24 | 27 |
| A.5 | All districts of Karachi | 04 | * | 04 |
| | Real Sons / Daughters / Brothers / Sisters of Employees of MUET, SZAB Campus, Khairpur Mirs' | 09 | * | 09 |
| | Grand Total | 59 | 221 | 280 |

* These seats are awarded to the candidates belong to both Urban or Rural regardless of area.

RULES AND PROCEDURES FOR ADMISSION

Table-9.6.6: Discipline-wise Extra Seats Reserved for Nominees.

| Category | Description | CE | EL | ME | ES | CS | TL | SW | CH | IN | MN | MT | PG | AR | CRP | TE | EE | BM | MTE | TOTAL |
|----------|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| D.1 | Balochistan | - | - | - | 2 | 2 | - | - | 2 | - | - | 2 | - | 2 | - | - | - | - | - | 10 |
| D.2 | Foreigners | 3 | 1 | 1 | 2 | - | - | - | - | 1 | 1 | 1 | - | - | - | - | - | - | - | 10 |
| D.3 | Azad Kashmir | 1 | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 2 |
| D.4 | Ex-FATA | - | 1 | - | - | - | - | - | - | - | 1 | 1 | - | - | - | 1 | - | - | - | 4 |
| D.5 | UET, Lahore | 1 | - | - | - | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - | 3 |
| D.6 | UET, Taxila | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| D.7 | UET, Peshawar | 1 | - | 1 | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 3 |
| D.8 | Govt. of Khyber Pakhtunkhwa | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 1 |
| D.9 | Govt. of Punjab | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | 1 |
| D.10 | Northern Areas | 1 | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 |
| D.11 | GHQ, Rawalpindi | 3 | 2 | 2 | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 8 |
| D.12 | Federal Capital Area | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 1 |
| D-13 | Indian Occupied Kashmir | 2 | 1 | 1 | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 |
| D-14 | Sri Lankan Students | 2 | 2 | 2 | - | 2 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 9 |
| | Total | 15 | 07 | 07 | 04 | 07 | 00 | 00 | 04 | 02 | 03 | 04 | 00 | 06 | 00 | 01 | 00 | 00 | 00 | 60 |

CE Civil Engineering

EL Electrical Engineering

ME Mechanical Engineering

ES Electronic Engineering

CS Computer Systems Engineering

EE Environmental Engineering

TL Telecommunication Engg.

SW Software Engineering

CH Chemical Engineering

IN Industrial Engg. & Management

MN Mining Engineering.

BM Biomedical Engineering

MT Metallurgy & Materials Engg.

PG Petroleum & Nat. Gas Engg.

AR Architecture

CRP City & Regional Planning

TE Textile Engineering.

MTE Mechatronics Engineering

Table-9.6.7: Description of Discipline-wise Extra Seats Reserved for Nominees.

| Category | Description | Seats |
|---|---|-----------|
| D.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). | 05 |
| | 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). | 05 |
| D.2 | Foreign students (under Pakistan Technical Assistance Program) nominated by the Ministry of Finance and Economic Affairs (Economic Affairs Division), Government of Pakistan, Islamabad. | 10 |
| D.3 | Candidates belonging to Azad Kashmir, nominated by the Azad Govt. of the Azad State of Jammu & Kashmir, Muzafarabad. | 02 |
| D.4 | Candidates belonging to Federally Administered Tribal Area, nominated by the State and Frontier Region Division, Government of Pakistan, Islamabad. | 04 |
| D.5 | Candidates domiciled in Punjab Province, nominated by the UET Lahore through Education Department, Government of Punjab (on reciprocal basis). | 03 |
| D.6 | Candidate domiciled in Punjab Province, nominated by the UET Taxila through Education Department, Government of Punjab (on reciprocal basis). | 01 |
| D.7 | Candidates domiciled in Khyber Pakhtunkhwa Province, nominated by UET Peshawar through the Education Department, Government of Khyber Pakhtunkhwa (on reciprocal basis). | 03 |
| D.8 | Candidate domiciled in Khyber Pakhtunkhwa Province, nominated by the Education Department, Government of Khyber Pakhtunkhwa. | 01 |
| D.9 | Candidate domiciled in Punjab Province, nominated by the Education Department, Government of Punjab. | 01 |
| D.10 | Candidates belonging to Northern Areas, nominated by the Directorate of Education, Government of Gilgit Baltistan. | 02 |
| D.11 | Candidates nominated by the General Head Quarters, Rawalpindi. | 08 |
| D.12 | Candidate belonging to Federal Capital Area, nominated by Ministry of Education, Government of Pakistan, Islamabad. | 01 |
| D.13 | Candidates belonging to Indian Occupied Kashmir, nominated by the Ministry of Economic Affairs & Statistics (Economic Affairs Division), Government of Pakistan, Islamabad. | 05 |
| D.14 | Candidates belonging to Sri Lanka, (under Pak-Sri Lanka Higher Education Cooperation Program) nominated by the Ministry of Finance and Economic Affairs (Economic Affairs Division), Government of Pakistan, Islamabad. | 09 |
| Total Discipline-wise Seats Reserved for Government Agencies | | 60 |

9.7 Designation of Urban Areas of Sindh Province

The Urban areas designated in each district are given below.

| | |
|----|-------------------------------|
| 1 | Sukkur District |
| | a) Sukkur Municipality |
| | b) Rohri Municipality |
| 2 | Ghotki District |
| | a) Ghotki Municipality |
| | b) Mirpurmathelo Municipality |
| 3 | Khairpur District |
| | a) Khairpur Municipality |
| | b) Gambat Municipality |
| | c) Pirjogoth Municipality |
| 4 | Shaheed Benazir Abad District |
| | a) Nawabshah Municipality |
| 5 | Naushehro Feroze District |
| | a) Moro Municipality |
| 6 | Larkana District |
| | a) Larkana Municipality |
| | b) Ratodero Municipality |
| | c) Naudero Municipality |
| 7 | Kamber / Shahdaskot District |
| | a) Shahdaskot Municipality |
| | b) Kambar Municipality |
| 8 | Jacobabad District |
| | a) Jacobabad Municipality |
| 9 | Kashmore District |
| | a) Kandhkot Municipality |
| 9 | Kashmore District |
| | a) Kandhkot Municipality |
| 10 | Shikarpur District |
| | a) Shikarpur Municipality |
| 11 | Hyderabad District |
| | a) Hyderabad Municipality |
| | b) Tandojam Municipality |

| | |
|----|--------------------------------|
| 12 | Tando Allahyar District |
| | a) Tando Allahyar Municipality |
| 13 | Tando Muhammad Khan District |
| | a) Tando M. Khan Municipality |
| 14 | Matiari District |
| | a) Hala Municipality |
| 15 | Dadu District |
| | a) Dadu Municipality |
| | b) Mehar Municipality |
| | c) K.N. Shah Municipality |
| 16 | Jamshoro District |
| | a) Kotri Municipality |
| 17 | Thatta District |
| | a) Thatta Municipality |
| 18 | Sujawal District |
| | No Urban Areas |
| 19 | Badin District |
| | a) Badin Municipality |
| | b) Matli Municipality |
| 20 | Mirpur Khas District |
| | a) Mirpurkhas Municipality |
| 21 | Tharparkar District |
| | No Urban Areas |
| 22 | Umerkot District |
| | No Urban Areas |
| 23 | Sanghar District |
| | a) Sanghar Municipality |
| | b) Shahdadpur Municipality |
| | c) Tando Adam Municipality |
| | d) Sinjhor Municipality |

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 (Regular, Self-Finance, etc.) 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 choices may be provided to all the candidates after the display of their call list.

9.9 Rectification of Mistakes

The Admission Merit Lists / Call Lists announced by the University will be provisional and if any mistake is detected, shall be rectified.

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 produce certificates of Hafiz-e-Quran on printed form from registered Madressahs and cleared the test of Hifz taken by the University, are also considered to have additional 10 marks to be added to the marks of HSC Part-I

9.12 Deduction of Marks Due to Gap in Education

In case of a gap or repetition of HSC / Diploma Examinations, the merit will be determined as described below:

One percent of the aggregate marks will be 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 will be 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 will be given priority on merit basis in that category.

9.14 Closing of Admissions Process

The admissions process for the session will be made up to the end of FOURTH week from the date of start of the classes. After this period, no new admissions will be made. However, any change of discipline on merit will be made up to 07 days after the closing date of admissions. The seats fallen vacant will not be filled-up.

9.15 Transfer on Reciprocal Basis

There is a provision for transfer of students admitted in Mehran University 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 will be nominated for admission to the University of Engineering & Technology, Lahore, on reciprocal basis. The candidates desiring to be considered for this nomination will be required to give their intent in writing at the time of interview. The Mehran University authorities will make the final selection for this purpose as per merit.

One candidate in Civil Engineering having the domicile of Categories-A.1 to A.4 will be nominated for admission to the University of Engineering & Technology, Taxila on reciprocal basis.

Similarly, the UET, Lahore is authorized to nominate three candidates and UET Taxila is authorized to nominate one candidate for admission in Mehran University in the same branches as mentioned above.

Three candidates, one in Civil Engineering, one in Mechanical Engineering and one in Architecture having the domicile of Categories-A.1 to A.4 will be nominated for admission in Khyber Pakhtunkhwa University of Engineering & Technology, Peshawar on reciprocal basis. They will be required to pay Rs. 38,000/- as educational expenses in addition to admission and other normal user charges at the time of admission to Khyber Pakhtunkhwa University of Engineering & Technology, Peshawar. Similarly, the nominees of Khyber Pakhtunkhwa University of Engineering & Technology, Peshawar on reciprocal basis will be required to pay Rs. 38,000/- as educational expenses in addition to admission and other normal user charges at the time of admission to Mehran University of Engineering & Technology, Jamshoro. The candidates desiring to be considered for this nomination will be required to give their intent in writing at the time of interview. The final selection for this purpose will be made by the Mehran University authorities as per merit.

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 will be 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 shall be 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, will be 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 and remained absent from their classes and examinations for any reason, will be 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 will be considered from the date of issuance of re-admission letter. Such admissions may be made within four weeks from the date of start of classes of particular session.

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 will not be 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:

| | |
|--|-----------|
| a) Admission fee (Per Year) | 12,000.00 |
| b) Subject Society / PERN fee (Once) | 1,200.00 |
| c) Enrolment fee (Once) | 1,000.00 |
| d) HSC Marks Certificate Verification fee (Once) | 1,500.00 |
| e) Smart Identity Card fee(Once) | 1,000.00 |

Total: Rs.16,700.00

University Caution Money Deposit (Once)* Rs. 2,500.00

* 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:

| | |
|---|----------------------|
| a) Tuition fee (Per Semester) | 12,000.00 |
| b) Games fee (Per Semester) | 500.00 |
| c) Development charges (Per Semester) | 1,000.00 |
| d) Examinations fee - for Regular Examinations (Per Semester) | 1,500.00 |
| e) Transport charges (Per Semester) | 4,000.00 |
| Total: | Rs. 19,000.00 |

(3) Fees payable at the time of hostel allotment:

| | |
|------------------------------------|---------------------|
| a) Admission fee (Once) | 4,000.00 |
| b) Allotment Processing fee (Once) | 200.00 |
| Total: | Rs. 4,200.00 |

Room Deposit – Refundable (Once) Rs. 1,500.00

(4) Fees to be charged at the start of each semester (For Boarders):

| | |
|--|---------------------|
| a) Hostel Identity Card fee (Per Semester) | 200.00 |
| b) Room charges (Per Semester) | 6,000.00 |
| c) Medical charges (Per Semester) | 200.00 |
| d) Sports charges (Per Semester) | 200.00 |
| e) Utility charges(Per Semester) | 2,000.00 |
| Total: | Rs. 8,600.00 |

Note: The foreign students will be charged **USD. 1,000.00** per year (**USD. 500.00** per semester) as room charges. The other fees will be the same as given above.

9.22 Admission of Candidates Domiciled in Sindh Province under Self-Financing Scheme at Mehran University of Engineering & Technology, Jamshoro and Mehran University of Engineering &

Technology, SZAB Campus, Khairpur Mirs'

Under the Self-Financing Scheme, the admission will be made on the basis of district quota as per Table-9.22 (a) and (b) at Mehran University of Engineering & Technology, Jamshoro and Mehran University of Engineering & Technology, SZAB Campus, Khairpur Mirs' respectively. The saving seats will be 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 prior notice.

9.22.1 Eligibility

The eligible candidates should have:

- i. iSecured at least 60% marks in the HSC Part-I (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 Intermediate (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** and **Category-III** 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)**.

Category-I

1. Civil Engineering
2. Electrical Engineering
3. Mechanical Engineering
4. Electronics Engineering
5. Computer Systems Engineering
6. Software Engineering
7. Mechatronics Engineering
8. Civil Engineering (at Khairpur Mirs')
9. Electrical Engineering (at Khairpur Mirs')
10. Mechanical Engineering (at Khairpur Mirs')

Category-II

1. Petroleum & Natural Gas Engineering
2. Environmental Engineering
3. Chemical Engineering

Category-III

1. Industrial Engineering & Management
2. Textile Engineering
3. Architecture
4. Bio-Medical Engineering
5. Telecommunication Engineering
6. City & Regional Planning

In Bio-Medical Engineering, seven seats are reserved on all Pakistan basis who are otherwise eligible for admission. In case of saving of seats, the same will be filled up on overall open merit basis of the Province of Sindh.

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. 900,000/- (Rupees Nine Hundred Thousand Only) + 5% Tax* (Total Rs. 945,000/-) in the form of Demand Draft prepared by any branch of Bank, in favor of 'Director Finance, Mehran University of Engineering & Technology, Jamshoro'. The draft in original be submitted in the office of Director Admissions, MUET, Jamshoro.

Category-II

Admission fee of Rs. 600,000/- (Rupees Six Hundred Thousand Only) + 5% Tax* (Total Rs. 630,000/-) in the form of Demand Draft prepared by any branch of Bank, in favor of 'Director Finance, Mehran University of Engineering & Technology, Jamshoro'. The draft in original be submitted in the office of Director Admissions, MUET, Jamshoro.

Category-III

Admission fee of Rs. 400,000/- (Rupees Four Hundred Thousand Only) + 5% Tax* (Total Rs. 420,000/-) in the form of Demand Draft prepared by any branch of Bank, in favor of 'Director Finance, Mehran University of Engineering & Technology, Jamshoro'. The draft in original be submitted in the office of Director Admissions, MUET, Jamshoro.

Other fees as payable under all categories of the regular scheme shall also be payable after the admission has been granted to the candidate.

* 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.

RULES AND PROCEDURES FOR ADMISSION

Table-9.22 (a) Distribution of Seats under Self-Financing Scheme at Mehran University of Engineering and Technology, Jamshoro.

| Category | District | CE | EL | ME | ES | CS | TL | SW | CH | IN | PG | AR | CRP | TE | EE | BM | MTE | TOTAL |
|----------|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|----------|----------|------------|------------|
| A.1 | Sukkur | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 2* | 14 |
| | Ghotki | 1 | 1 | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | | 11 |
| | Khairpur | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | | 16 |
| | S.B. Abad | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | | 13 |
| | N. Feroze | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | | 15 |
| | Total | 8 | 5 | 5 | 8 | 4 | 4 | 10 | 5 | 0 | 5 | 5 | 5 | 4 | 1 | 0 | 2 | 71 |
| A.2 | Larkana | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1* | 13 |
| | Camber /Shahdadkot | 2 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | | 13 |
| | Jacobabad | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | | 12 |
| | Kashmore | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | | 9 |
| | Shikarpur | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | | 13 |
| | Total | 6 | 5 | 4 | 5 | 4 | 2 | 10 | 5 | 0 | 5 | 5 | 5 | 4 | 0 | 0 | 1 | 61 |
| A.3 | Hyderabad | 4 | 2 | 3 | 5 | 1 | 1 | 5 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4* | 31 |
| | Jamshoro | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | | 16 |
| | Matiari | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | | 15 |
| | T.M. Khan | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | | 15 |
| | T.Allahyar | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | | 14 |
| | Thatta | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | | 15 |
| | Sujawal | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | | 13 |
| | Badin | 4 | 2 | 2 | 3 | 1 | 1 | 2 | 2 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | | 23 |
| | Dadu | 4 | 2 | 2 | 3 | 1 | 1 | 2 | 2 | 0 | 2 | 1 | 1 | 1 | 1 | 1 | | 24 |
| | Total | 24 | 12 | 13 | 20 | 9 | 9 | 21 | 12 | 1 | 12 | 8 | 9 | 8 | 6 | 2 | 4 | 170 |
| A.4 | Umerkot | 2 | 2 | 1 | 3 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 3* | 17 |
| | Mirpurkhas | 3 | 1 | 2 | 2 | 1 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | | 21 |
| | Tharparkar | 2 | 2 | 1 | 3 | 1 | 1 | 3 | 2 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | | 20 |
| | Sanghar | 4 | 2 | 2 | 4 | 1 | 1 | 4 | 3 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | | 27 |
| | Total | 11 | 7 | 6 | 12 | 4 | 4 | 12 | 8 | 1 | 5 | 4 | 4 | 4 | 2 | 1 | 3 | 88 |
| A.5 | Karachi | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 11 |
| | Grand Total | 50 | 29 | 29 | 46 | 22 | 20 | 55 | 31 | 2 | 28 | 23 | 24 | 20 | 9 | 3 | 10* | 401 |

* Seats reserved for respective divisions.

RULES AND PROCEDURES FOR ADMISSION

Table-9.22 (b) Distribution of Seats for various Districts under Self-Financing Scheme at Mehran University of Engineering & Technology SZAB Campus Khairpur Mirs'.

| Category | Districts | Number of Seats in Each Discipline | | | |
|----------|---------------------|------------------------------------|-----------|-----------|-------------|
| | | CE | EL | ME | Total Seats |
| A-1 | Sukkur | 01 | 03 | 01 | 05 |
| | Ghotki | 01 | 02 | 01 | 04 |
| | Khairpur | 02 | 04 | 01 | 07 |
| | S.Benazirabad | 01 | 02 | 00 | 03 |
| | Naushahro Feroze | 01 | 02 | 00 | 03 |
| A-2 | Larkana | 01 | 02 | 01 | 04 |
| | Kambar / Shahdadkot | 01 | 03 | 00 | 04 |
| | Shikarpur | 01 | 02 | 00 | 03 |
| | Jacobabad | 01 | 02 | 00 | 03 |
| | Kashmore | 01 | 02 | 01 | 04 |
| A-3 | Hyderabad | 01 | 03 | 00 | 04 |
| | Matiari | 00 | 01 | 00 | 01 |
| | T.M. Khan | 00 | 01 | 00 | 01 |
| | T. Allahyar | 00 | 01 | 00 | 01 |
| | Dadu | 01 | 03 | 00 | 04 |
| | Jamshoro | 00 | 01 | 00 | 01 |
| | Thatta | 00 | 01 | 00 | 01 |
| | Sujawal | 00 | 01 | 00 | 01 |
| | Badin | 00 | 02 | 00 | 02 |
| A-4 | Mirpurkhas | 00 | 02 | 00 | 02 |
| | Umerkot | 01 | 01 | 00 | 02 |
| | Tharparkar | 00 | 01 | 00 | 01 |
| | Sanghar | 01 | 01 | 00 | 02 |
| A-5 | Karachi | 00 | 01 | 00 | 01 |
| | Total: | 15 | 44 | 05 | 64 |

9.23 Admissions under University Support Program (USP) / Campus Support Program (CSP)

9.23.1 University Support Program (USP)

For this scheme 62 seats in Civil, 10 seats each in Electrical, Mechanical* 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 will be the same as approved for admission under Regular Scheme. For Civil Engineering the candidates will be required to pay Rs. 1,600,000/- (Rupees One Million Six Hundred Thousand Only - once) + 5% Tax (Total Rs. 1,680,000/-), whereas for Electrical, Mechanical and Software Engineering, the candidates will be required to pay Rs. 1,400,000/- (Rupees One Million Four Hundred Thousand Only - once) + 5% Tax (Total Rs. 1,470,000/-) in the form of Demand Draft prepared by any branch bank, in favor of "Director Finance, Mehran University of Engineering & Technology, Jamshoro" for admission under this scheme in addition to other normal fees etc., payable by the students under Regular Scheme. The draft in original be submitted in the office of Director Admissions, MUET, Jamshoro.

*** The unoccupied seats will be treated as the seats reserved for Self-Financing Scheme.**

RULES AND PROCEDURES FOR ADMISSION

Table-9.23 Distribution of Seats for various Districts under University Support Program (USP) at Mehran University of Engineering & Technology, Jamshoro.

| Category | Districts | Number of Seats in Each Discipline | | | | Total Seats |
|---------------|-------------------|------------------------------------|------------|------------|------------|-------------|
| | | CE | EL | ME | SW | |
| A-1 | Sukkur | 03 | 02* | 02* | 03* | 20 |
| | Ghotki | 02 | | | | |
| | Khairpur | 03 | | | | |
| | S.Benazirabad | 02 | | | | |
| | Naushahro Feroze | 03 | | | | |
| A-2 | Larkana | 03 | 01* | 01* | 01* | 15 |
| | Kambar/Shahdaskot | 02 | | | | |
| | Shikarpur | 02 | | | | |
| | Jacobabad | 02 | | | | |
| | Kashmore | 03 | | | | |
| A-3 | Hyderabad | 03 | 04* | 04* | 05* | 36 |
| | Matiari | 03 | | | | |
| | T.M. Khan | 02 | | | | |
| | T. Allahyar | 02 | | | | |
| | Dadu | 03 | | | | |
| | Jamshoro | 03 | | | | |
| | Thatta | 02 | | | | |
| | Sujawal | 02 | | | | |
| | Badin | 03 | | | | |
| A-4 | Mirpurkhas | 03 | 03* | 03* | 04* | 22 |
| | Umerkot | 03 | | | | |
| | Tharparkar | 03 | | | | |
| | Sanghar | 03 | | | | |
| A-5 | Karachi | 02 | 00* | 00* | 00* | 02 |
| Total: | | 62 | 10* | 10* | 13* | 95 |

* Seats reserved for respective divisions.

9.23.2 Campus Support Program (CSP) at SZAB Campus, Khairpur Mirs'

For this scheme, 32 seats in Civil Engineering discipline have been reserved for the candidates having the domicile of Sindh Province on open merit basis. The basic requirement for admission will be the same as approved for admission under Regular Scheme. The candidates will be required to pay Rs. 1,400,000/- (Rupees One Million Four Hundred Thousand Only - once) + 5% Tax (Total Rs. 1,470,000/-) in the form of Demand Draft prepared by any branch bank, in favor of "Director Finance, Mehran University of Engineering & Technology, Jamshoro" for admission under this scheme in addition to other normal fees etc., payable by the students under Regular Scheme. The draft in original be submitted in the office of Director Admissions, MUET, Jamshoro.

The Refund of Self-Financing Scheme, all University Support Programs and Campus Support Programs, admission fee will only be allowed for the unsuccessful / withdrawing** candidate through special cross cheque mentioning the name of refundee with bank account, the name of bank and branch of the respective bank. Therefore, in case of refund of the fee candidates are required to write an application and provide the name of the parent / guardian or self along with his / her bank account number with branch name to whom the amount to be refunded.

** Conditions apply as mentioned in Clause 9.27.

9.24 Admissions of Foreign Candidates under Self-Financing Scheme at Mehran University of Engineering & Technology, Jamshoro.

Seats in all disciplines at main campus under this scheme as described in Clause 9.22.4 (maximum 5 seats in each discipline) are reserved for foreign candidates who are otherwise eligible for admission. The foreign candidates must apply for admission through their Embassies, via Higher Education Commission, Islamabad.

The foreign candidates will be 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.

The saving seats, if any, may be allocated to the candidates of Sindh Province under University Support Program (USP) on open merit.

9.25 Admission for the Candidates of Overseas Pakistani under Self-Financing Scheme at Mehran University of Engineering & Technology, Jamshoro.

Five seats in each discipline are reserved for the candidates of Overseas Pakistani under this scheme who are otherwise eligible for admission. They are required to pay admission fee in US\$ 13,000/- (Dollars Thirteen Thousand Only) as charged from foreign candidates on Self-Financing Scheme. They will also be charged the usual fees as payable by other students.

The saving seats, 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 University of Engineering & Technology, Jamshoro.

Ten seats in the following disciplines are reserved for the candidates domiciled in Azad Jammu and Kashmir under this scheme:

| Name of Technology | Number of Seat Allocated |
|-------------------------------|--------------------------|
| Civil Engineering | 2 seats |
| Electrical Engineering | 1 seat |
| Mechanical Engineering | 1 seat |
| Computer System Engineering | 1 seat |
| Telecommunication Engineering | 1 seat |
| Software Engineering | 1 seat |
| Architecture | 1 seat |
| City & Regional Planning | 1 seat |
| Environmental Engineering | 1 seat |
| Total: | 10 seats |

They have to apply directly to the University in response to the advertisement. All the other conditions concerning eligibility and fees will be same as described in Clauses 9.2 and 9.22.5 also apply.

The saving seats, 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 except the seats in the desired disciplines are available.
- The University follows the National Level Fee Refund Policy at Higher 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 will also be 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

- Migration is only allowed to and from any Public Sector University accredited by PEC and Foreign University recognized by Higher Education Commissions (HEC).
- Migration/Transfer is not allowed to the students in the first and final years with less than 50% Credit Hours required for the degree.
- Migration/Transfer is not allowed to the students admitted on reciprocal basis.
- 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.
- The students failing in previous semesters (i.e., less than 50% marks) shall not be eligible for admission on migration / transfer basis.
- The migration / transfer of the local students would be allowed on the payment of Rs. 800,000/- (Rupees Eight Hundred Thousand Only) + 5% Tax (Total Rs. 840,000/-) to the Mehran University; while foreign students would be required to pay Rs. 1,200,000/- (Rupees One Million Two Hundred Thousand Only) + 5% Tax (Total Rs. 1,260,000/-) as migration fee. The nominees will be required to submit NO OBJECTION CERTIFICATE (NOC) of the nominating agency.
- Admission on migration basis will be made up to fourth week of the start of the classes of particular session

B. For BS Programs

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 is another category of candidates who are also eligible for admission, which are described in detail in the subsequent sections.
- (ii) The candidates who apply for their admission on the basis of fake certificates / documents (detected before or after their admission) shall be prosecuted under criminal law and their admissions 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-I) in any of the following groups in Annual Examinations of 2020 or earlier up to Annual Examinations of 2017 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 only eligible to apply for admission in the disciplines mentioned against them **in the table given below. Besides that, the students of engineering programs of the University can also apply for admission in any of BS programs.**

| Name of Degree Program | Name of Group of Studies Eligibility for Admission |
|-------------------------------------|--|
| Bachelor of Science in Mathematics. | <ul style="list-style-type: none"> • Pre-Engineering Group. • General Science Group. |

| | |
|---|---|
| Bachelor of Computer Science. | <ul style="list-style-type: none"> • Pre-Engineering Group. • General Science Group. |
| Bachelor of Science in Garment Manufacturing. | <ul style="list-style-type: none"> • Pre-Engineering Group. • Pre-Medical Group. • General Science Group. |
| Bachelor of Business Administration. | <ul style="list-style-type: none"> • Pre-Engineering Group. • Pre-Medical Group. • General Science Group. • Commerce Group. |
| Bachelor of Studies in English. | <ul style="list-style-type: none"> • All groups |

The candidates who have passed the above examinations or equivalent examinations before Annual Examination **2017** shall not be eligible for admission. **The admission of any candidate, who would be unable to secure 60% or above marks in his / her Final Intermediate (HSC) will be cancelled immediately and his / her tuition fee will be reimbursed in full without deduction.**

- (ii) Those students, who were admitted to any other institutes / universities before applying for admission in Mehran University 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.

9.3 Admission Form

Call for admissions will be advertised in the prominent newspapers of national and regional repute as well as on University website www.muaf.edu.pk. The candidates who intend to apply for admission must follow the guidelines mentioned on the Directorate of Admissions website www.admission.muaf.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 as indicated.

The Mehran University authorities after receipt of application and processing fee will email admit slips to candidates for pre-admission test only. 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 will be decided by the admission office of the University after scrutinizing the provided documents. The eligibility criteria for admission is given 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 outrightly.

9.4 Pre-Admission Test

All the candidates eligible for admission in any of the disciplines mentioned above in Clause 9.2 (i) are required to appear in the Pre-admission Test organized by the University. The candidates having secured less than 40% score in 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 will be prepared by calculating the 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:

| | Percentage of Marks in: | Multiplying Weightage |
|---|---|-----------------------|
| A | Secondary School Certificate - Matriculation: | 0.10 |
| B | Higher Secondary School Certificate – Part-I–First Year (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 Part-I and 50% marks in Pre-admission Test; his / her CPN would be: $70 \times 0.1 + 60 \times 0.3 + 50 \times 0.6 = 7 + 18 + 30 = 55 \%$.

* Adjusted marks means marks secured in HSC Part-I examination plus additional marks if any, as defined in **Clause 9.10**, minus marks to be deducted as defined in **Clause 9.11**.

9.5 Interviews

After the receipt of the results of Pre-admission Test, a comprehensive merit list will be prepared for each district / category and a number of candidates' equivalent to the reserved seats of concerned category will be 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 will be held at Mehran University, Jamshoro on the dates as announced in the newspapers and also on MUET website: www.muft.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-I – First Year Intermediate. (Both marks certificates, if any candidate has changed his/her group from one to another)
- (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 www.admissions.muft.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 only be disallowed to appear in the interview but also be disqualified from the process of admission.

The admission in discipline 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 9.20 at the time of interview.

9.6 Distribution of Seats

The distribution of seats for admissions will be 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 will be given on quota basis among various districts / categories at Mehran University of Engineering & Technology, 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 will be given on open merit basis. The number of seats allocated to each district in various disciplines is given in the following table:

RULES AND PROCEDURES FOR ADMISSION

Table-9.6.1: Distribution of Seats Discipline-wise for various Districts, Disciplines and Categories at Mehran University of Engineering & Technology, Jamshoro.

| Category | Description | BBA | BSM | BSE | BSC | BSGM | 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 |
| | Naushehro Feroze | 1 | 1 | 1 | 1 | 1 | 5 |
| A.2 | Larkano | 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 | 30 |
| | Matari | 2 | 2 | 2 | 2 | 2 | 10 |
| | Tando Muhammad Khan | 2 | 2 | 2 | 2 | 2 | 10 |
| | Tando Allahyar | 2 | 2 | 2 | 2 | 2 | 10 |
| | 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 |
| | Umarkot | 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 |
| | Total | 50 | 50 | 50 | 50 | 50 | 250 |

BBA Bachelor of Business Administration.

BSC Bachelor of Computer Science

BSM Bachelor of Science in Mathematics.

BSGM Bachelor of Science in Garment Manufacturing

BSE Bachelor of Studies in English.

* The students of the University who have been selected on MUE Quota (under Category-C of the Prospectus) shall not be eligible to apply again in any program (BE or BS) of the University under MUE Quota.

9.7 Award of Discipline

The award of discipline is made on the day of interview. The candidates have to opt discipline from their own respective districts / categories. However, if any candidate has applied in more than one category (Regular and Employees' Quota) 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.

All fifty (50) approved seats for each of the newly launched degree programs may be offered on the basis of district-wise quota as per Table-9.6.1 and the saving seats if any may be offered on the basis of open merit.

9.8 Rectification of Mistakes

The Admission Merit Lists / Interview Call Lists announced by the University will be provisional and if any mistake is detected, shall be rectified.

9.9 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.

9.10 Additional Marks

The candidates, who have produce certificates of Hafiz-e-Quran on printed form from registered Madrassas and clear the test of Hifz taken by the University, are also considered to have additional 10 marks to be added to the marks of HSC Part-I.

9.11 Deduction of Marks Due to Gap in Education

In case of a gap or repetition of HSC Examinations, the merit will be determined as described below:

One percent of the aggregate marks will be deducted for each gap of one academic year after Matriculation

examination from the total marks of HSC examination or equivalent for the purpose of determination of merit in each District / Category. This deduction is applicable whether the HSC examination had been repeated or the gap had occurred owing to any other reason.

9.12 Selection Procedure against Various Categories

All the candidates who have applied for admission against the seats reserved under Category-B will be 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 will be given priority on merit basis in that category.

9.13 Closing of Admissions Process

The admissions process for the session will be made up to the end of FOUR weeks from the date of start of the classes. After this period, no new admissions will be made. However, any change of discipline on merit will be made up to 07 days after the closing date of admissions. The seats fallen vacant will not be filled-up.

9.14 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 will be required to submit study leave order and relieving order from their employers for study purpose at the University because the Bachelor 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.

9.15 Admission in any Other Institute

Being a full-time program of studies, no student of this University shall be 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.

9.16 Identity Card

The students, after getting admission at the University, will be 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.

9.17 Re-Admission Policy

Those students who are eligible for any semester of any year and remained absent from their classes and examinations for any reason, will be 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 will be considered from the date of issuance of re-admission letter. Such admissions may be made within four weeks from the date of start of classes of particular session.

9.18 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 will not be allowed to appear in the examination of the First Semester of the First Year.

9.19 Roll Numbers

The roll numbers assigned to the successful candidates shall be as under:

- | | |
|-------------|------------|
| i. 20-BBA | iv. 20-BSC |
| ii. 20-BSM | v. 20-BSGM |
| iii. 20-BSE | |

9.20 Fees

FEES PAYABLE AT THE TIME OF ADMISSION:

| | |
|--|---------------|
| a) Admission Fee (Per Year) | 20,000 |
| b) Tuition Fee (Per Quarter)* | 30,000 |
| c) Marks Certificate Verification Fee (Once)** | 1,500 |
| d) Enrollment Card Fee (Once) | 1,000 |
| e) Smart Identity Card Fee (Once) | 1,000 |
| Total Fee Payable | 53,500 |

Caution Money - Refundable (Once) **2,500**

* 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 will be provided financial support for the payment of tuition fee.

** The marks certificate verification fee will be charged per certificate. If a candidate has more than one marks certificates, the verification fee amounting to RS. 1,500-00 will be charged for each certificate.

Note: Examinations or any other fee, if applicable will be charged as per existing other undergraduate programs.



REGULATIONS FOR SEMESTER SYSTEM



MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY

Regulations (Revised) regarding the General Scheme of Studies for the Bachelor's Degree Programs of the Mehran University of Engineering and Technology, under Section 47(1) (n) of the Act 1977.

1. **Short Title.** These Regulations may be called the Mehran University of Engineering and Technology 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 University of Engineering and Technology 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 **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.
5. **Undergraduate Structure of Bachelor's Degree Course in Engineering, City & Regional Planning, Architecture, Business Administration, Mathematics, Computer Science and English is given below**

- 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 for teaching 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.)" has 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.

Table 5.1

| | |
|---|--|
| Total No. of Credit Hours (Minimum) | 124 |
| Total No. of Credit Hours (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 – 9 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/earning 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 an 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 a 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 withdraw. 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

| Sr. No. | Description | Max Marks (100 %) |
|--------------------|-------------------------------|-------------------|
| i. | Lab Ruberic | 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%) |
| Total Marks | | 100 |

PROJECT

| Semester | Thesis CH | 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, required and 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 FOR THEORY/PRACTICAL/PROJECT |
|-----------|-------------|--|
| A+ | 4.00 | >90% |
| A | 3.50 | 90% – 83% |
| B+ | 3.00 | 82% – 75% |
| B | 2.50 | 74% – 65% |
| C+ | 2.00 | 64% – 60% |
| C | 1.00 | 59% – 50% |
| F | 0.00 | <50% |

- Fraction is to be considered as a whole number.
- Subjects carrying more than 100 marks in Theory/ Practical will be awarded grades accordingly.
- The results will be prepared on the basis of Grade Point Average (G.P.A)

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 (GPA).

Grade point Average is an expression for the average performance of a student in the course he/she has 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:-

$$(G.P.A) = \frac{\text{Sum of Quality Points}}{\text{Sum of the Credit Hours}}$$

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 semester is determined by the following way:

$$(CGPA) = \frac{\text{Sum of Quality Points for all the courses appeared}}{\text{Sum of the Credit Hours for all the courses appeared}}$$

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 Programme
- 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 Programme
- Previous Degree held by the Student along with Institution Name
- Credit Hours Exempted/Transferred if any/applicable.
- CNIC No. for Pakistani and Passport No. 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 will be constituted of 02 senior faculty members, Director of 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 centre
- x Uses abusive or obscene language on the answer script.
- xi Possesses any kind of weapon in or around examination centre.
- 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 programme 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 by 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 2nd attempt.
- iv. No Medal/Roll of Honor will be awarded in the case of improving CGPA. The disciplines where number of students is less than 05, no position will be awarded in semester system.



STUDENTS' CONDUCT AND DISCIPLINE REGULATIONS



The Regulations regarding the conduct and discipline of students of Mehran University of Engineering and Technology, 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 University of Engineering & Technology Students Conduct and Discipline Regulations, 1978 as amended upto 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 University Engineering and Technology, 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) He/She must be faithful in his/her religious duties and respect the convictions of other in matters of religion and customs.
- b) He/She must be loyal to his/her country and refrain from doing anything which might lower its honour 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 Every student shall observe the following:

- 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.

STUDENTS' CONDUCT AND DISCIPLINE REGULATIONS

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 upto 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 upto 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 upto 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 debaring 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. | 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.



PRE-ADMISSION TEST





Mehran University of Engineering & Technology, Jamshoro

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. During the test, every next question will appear randomly from any part / sub-part after each question.

| | | |
|--|-----------------------------------|---------------------|
| Part I: <ul style="list-style-type: none"> Vocabulary Grammar From Text Sentence correction | English | 25 Questions |
| Part II: <ul style="list-style-type: none"> All chapters (XI and XII) | Physics | 25 Questions |
| Part III: <ul style="list-style-type: none"> All chapters (XI and XII) | Mathematics/Biology | 25 Questions |
| Part IV: <ul style="list-style-type: none"> All chapters (XI and XII) | Chemistry/Computer Science | 25 Questions |

Mehran University of Engineering & Technology, Jamshoro

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

1. Jeans was not permitted in out college.
- | | |
|---------|---------|
| a) were | b) had |
| c) will | d) have |

Mehran University of Engineering & Technology, Jamshoro

Part II Physics

- The product of mass and velocity is called:
 - Acceleration
 - Moment Arm
 - Negative Accelerations
 - Momentum
- The production of X-Rays can be regarded as an inverse of:
 - Electromagnetic effect
 - Photoelectric effect
 - Compton's effect
 - Photon effect

Part III Mathematics

1. If $\sqrt{\cos\phi} \sqrt{\cos\phi} \sqrt{\cos\phi} \dots = 1$, then $\phi =$

- $n\pi/2$
- $2n\pi$
- $n\pi$
- $2n\pi/3$

2. If $y = f(x)$, then $\frac{dy}{dx}$ is defined as _____

a) $\frac{dy}{dx} = \frac{f(x+\delta x) - f(x)}{\delta x}$

$$\lim_{\delta x \rightarrow 0}$$

b) $\frac{dy}{dx} = \frac{f(x-\delta x) - f(x)}{\delta x}$

$$\lim_{\delta x \rightarrow 0}$$

c) $\frac{dy}{dx} = \frac{f(x-\delta x) + f(x)}{\delta x}$

$$\lim_{\delta x \rightarrow 0}$$

d) $\frac{dy}{dx} = \frac{f(x+\delta x) + f(x)}{\delta x}$

$$\lim_{\delta x \rightarrow 0}$$

Mehran University of Engineering & Technology, Jamshoro

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 -----

Mehran University of Engineering & Technology, Jamshoro

(B) FOR COMMERCE / HUMANITIES / OTHER GROUPS

GENERAL INSTRUCTIONS

The test is divided into following four parts and sub-parts. During the test, every next question will appear randomly from any part / sub-part after each question.

| | | |
|---|------------------------------|---------------------|
| Part I: | English | 25 Questions |
| <ul style="list-style-type: none">• Vocabulary• Grammar• Comprehension• Sentence correction | | |
| Part II: | General Mathematics | 30 Questions |
| <ul style="list-style-type: none">• Series problems• Algebraic problems• Arithmetic problems• Geometric and trigonometric problems | | |
| Part III: | General Science | 25 Questions |
| <ul style="list-style-type: none">• Physics• Chemistry• Biology• Computer Science | | |
| Part IV: | Intelligence Quotient | 20 Questions |

Mehran University of Engineering & Technology, Jamshoro

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 our college.
- | | |
|---------|---------|
| a) were | b) had |
| c) will | d) have |

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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 $P(x) = 3x^2 + (k-1)x + 9$ 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 |

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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

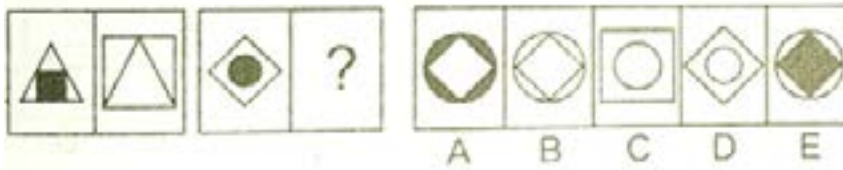
Computer Science

4. Keyboard is a:
- a) Input device
 - b) Output device
 - c) Important devic
 - d) Plastic device

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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-----





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