Postgraduate Prospectus 2021

University of Engineering & Technology, Lahore

2021

CONTENTS

VISION

To generate knowledge for global competitive advantage and become a leading world class research University.

MISSION

To play a leading role as a University of Engineering and Technology in teaching, research, innovation and commercialization that is internationally relevant and has a direct bearing on national industrial, technological and socio-economic development.

CHANCELLOR'S MESSAGE

University of Engineering and Technology, Lahore, enjoys a respectable position as a leading institution amongst the reputed engineering universities of the world. Being a pioneering institution of engineering and technology in Pakistan, it cherishes a right tradition of imparting quality engineering and technical education to the best brains of the country.

It is indeed a matter of great satisfaction for me to note that significant improvement has been achieved in the sphere of engineering and technical education at the University in accordance with national and international standards. With its emphasis on research and applied disciplines relevant to the need of time, the University is certainly alive to the increasing demand of professional and progressive engineering for national development.

It is equally commendable that the University has created a modern infrastructure and has established its sub campuses at Kala Shah Kaku, Faisalabad, Narowal and a constituent college at Gujranwala for furtherance of engineering studies in the country. This has certainly made it possible for students form diverse areas in Punjab to update their knowledge in various technical disciplines, since modern technology has become essential for rapid pro

I am confident that efforts to excel in the field of higher education and the inculcation of technical expertise in the students of the University and its campuses will continue in future with a greater zeal.

CHAUDHRY MUHAMMAD SARWAR
Governor Punjab
Chancellor University of Engineering & Technology, Lahore

VICE CHANCELLOR'S MESSAGE

I am pleased to state that UET as a premier institution established in 1921 has now become an icon of quality in engineering education and it is a great honor for me to serve my Alma Mater. As you know that the vision and mission are realigned recently to promote education, research and innovation, which are mandatory for technological development in the country. This has been demonstrated by the alumni who are serving in important national projects (i.e. engineering, design, IT, energy, architecture, planning, R&D and infrastructure), organizations and multinational companies.

The new initiatives are taken for implementation of Outcome Based Education (OBE) to enhance student learning outcomes in their degree programs with emphasis on research, knowledge, skills and values. This will certainly help produce well-rounded graduates having advanced knowledge in their fields and humanistic rectitude to be fit to serve for technological progress and to confront social challenges in society.

The faculty has set the quality benchmarks to achieve the milestones and key performance indicators (KPIs) for research, commercialization, entrepreneurship and better learning outcomes in all programs. The administration is aware of the challenges and difficulties to overcome and to provide best services to students and faculty, and bring harmonization in activities of all departments, centers and hostels. These efforts will lead to improvement in quality of education, services as well as national and international ranking of the university. We are also strengthening our linkages with alumni, industry, Government departments and international partners for academic cooperation.

I congratulate the students selected on merit for their choice to join UET and accept the challenge to work harder and smarter to excel in science, technology, research and management programs as well as participate in sports, professional chapter competitions, and co-curricular activities.

I also take this opportunity to welcome the incoming students at all campuses of UET and hope that their stay at the university will be pleasant with good learning experience.

PROF. DR. SYED MANSOOR SARWAR
Vice Chancellor
University of Engineering & Technology, Lahore

OFFICERS OF THE UNIVERSITY

Chancellor
CHAUDHARY MUHAMMAD SARWAR
Governor of Punjab

Pro Chancellor
RAJA YASIR HUMAYUN SARFRAZ
Minister for Education (Higher Education)

Vice Chancellor
PROF. DR. SYED MANSOOR SARWAR

Registrar
MUHAMMAD ASIF

Controller of Examinations
MUHAMMAD ZARGHAM NUSRAT

Treasurer
HASSAN MUNIR ANWAR

DEANS OF FACULTIES

Faculty of Electrical Engineering
PROF. DR. MUHAMMAD KAMRAN

Faculty of Mechanical Engineering
PROF. DR. NADEEM AHMAD MUFTI

Faculty of Civil Engineering
PROF. DR. HABIB UR REHMAN

Faculty of Chemical, Metallurgical and Polymer Engineering
PROF. DR-ING. NAVEED RAMZAN

Faculty of Earth Sciences and Engineering
PROF. DR. MUHAMMAD ZUBAIR ABU BAKAR

Faculty of Architecture and Planning
PROF. DR. RIZWAN HAMEED

Faculty of Natural Sciences, Humanities and Islamic Studies
PROF. DR. MUHAMMAD SHAHID RAFIQUE

CHAIRPERSONS / DIRECTORS OF TEACHING DEPARTMENT / INSTITUTES

Electrical Engineering
PROF. DR. KHALID MAHMOOD UL HASSAN

Computer Science
PROF. DR. MUHAMMAD SHOAIB

Computer Engineering
PROF. DR. ALI HAMMAD AKBAR

Mechanical Engineering
PROF. DR. NASIR HAYAT

Industrial and Manufacturing Engineering
PROF. DR. QAISER SALEEM

Mechatronics and Control Engineering
DR. ALI RAZA

Civil Engineering
PROF. DR. KHALID FAROOQ

Transportation Engineering and Management
PROF. DR. AMMAD HASSAN KHAN

Institute of Environmental Engineering and Research
PROF. DR. SAJJAD H. SHEIKH

Architectural Engineering and Design
PROF. DR. SAJJAD MUBIN

Chemical Engineering
PROF. DR. SAIMA YASIN

Polymer and Process Engineering
PROF. DR. ASIF ALI QAISER

Metallurgical and Materials Engineering
PROF. DR. FURQAN AHMAD

Mining Engineering
PROF. DR. ZULFIQAR ALI

Geological Engineering
PROF. DR. MUHAMMAD FAROOQ AHMED

Petroleum and Gas Engineering
PROF. DR. MUHAMMAD KHURRAM ZAHOOR

School of Architecture and Design
PROF. DR. RIZWAN HAMEED

Architecture
PROF. DR. RIZWAN HAMEED

Product and Industrial Design
PROF. DR. RIZWAN HAMEED

City and Regional Planning
PROF. DR. SHAKER MAHMOOD MAYO

Chemistry
PROF. DR. SYEDA RUBINA GILANI

Mathematics
PROF. DR. MUHAMMAD MUSHTAQ

Physics
PROF. DR. ANWAR LATIF

Humanities and Social Sciences
PROF. DR. MUHAMMAD SHAHID RAFIQUE

Islamic Studies
DR. HAFIZ MUHAMMAD SHAHBAZ

Institute of Business and Management
DR. NASIR MALIK

Department of Textile Engineering
DR. MUHAMMAD MOHSIN

HEADS OF NON-TEACHING DEPARTMENTS

Director Research, Innovation and Commercialization
DR. MUHAMMAD AZEEM RAZA

Director Students Affairs
PROF. DR. ASIF ALI QAISER

Director Studies
PROF. DR. AMMAD HASSAN KHAN

Director International Students Office
Ms. ALIA SALEEM NAUSHAHI

Senior Warden
PROF. DR. MUHAMMAD MUSHTAQ

Director Students Financial Aid and Career Services
PROF. DR. MUHAMMAD USMAN GHANI KHAN

Convener Admission Committee / In-charge Students Section
DR. ASIM LOAN

Director, Al-Khawarizmi Institute of Computer Sciences
PROF. DR. WAQAR MAHMOOD

Focal Person Higher Education Commission
DR. MUHAMMAD AZEEM RAZA

Director Planning and Development
DR. QASIM MANZOOR

Chairman Health Committee
PROF. DR. KHALID MAHMOOD UL HASSAN

Project Director Lahore Campus
ENGR. ASAD MASOOD

Chairman Transport Committee
PROF. DR. ZIA-UR-REHMAN

Project Director University City Campus
ENGR. AWAIS MALIK

Chairman Library Committee
PROF. DR. ASADULLAH QAZI

Project Director Faisalabad Campus
ENGR. AWAIS MALIK

Chairman Proctorial Board
PROF. DR. MUHAMMAD SHOAIB

Resident Officer
MUHAMMAD ASIF

Chairman Sports Committee
PROF. DR. SHAKER MAHMOOD MAYO

Director Repair and Maintenance Centre
PROF. DR. WAQAR MAHMOOD

Director Automotive Engineering Centre
PROF. DR. ASAD NAEEM SHAH

Director Quality Enhancement Cell
PROF. DR. AMER AZIZ

Public Relations Officer
Ms. SHAHIDA NAZIR

Resident Auditor
DR. ZUBAIR FAROOQ

ACADEMIC CALENDAR (2021-2022)

Fall Semester	
Semester Starts	Monday, 13th September 2021
Semester Ends (after 15 weeks)	Friday, 24th December 2021
Examination period	Monday, 27th December 2021 to Friday, 7th January 2022
Semester Break	Monday, 10th January 2022 to Friday, 14th January 2022

Spring Semester	
Semester Starts	Monday, 17th January 2022
Semester Ends (after 15 weeks)	Friday, 29th April 2022
Examination period	Monday, 9th May 2022 to Friday, 20th May 2022

Summer Semester (Optional)	
Semester Starts	Monday, 27th June 2022
Semester Ends (after 8 weeks of study)	Friday, 19th August 2022
Examination Period	Monday, 22nd August 2022 to Friday, 26th August 2022

THE UNIVERSITY

Though this institution received its charter as a University in the year 1961, it has a much longer history as a distinguished seat of learning in engineering sciences. It started in 1921 as the Mughalpura Technical College, deriving its name from the famous suburb of the old city of Lahore, richly dotted with architectural heritage of the great Mughals including the magnificent Shalimar Gardens. Its more familiar name of the pre-University era, the Maclagan Engineering College, was given to it in 1923 when Sir Edwards Maclagan, the then Governor of the Punjab, laid the foundation stone of the building, now called the Main Block, which still retains its majesty in spite of the wear and tear of over almost a century. At that stage, the institution offered courses of study in two disciplines, namely Electrical and Mechanical Engineering. The year 1932 is a major milestone in the evolution of this institution when it was affiliated with the University of the Punjab for award of a Bachelor's Degree in Engineering. At the dawn of Independence in 1947, it had well-established B.Sc. Degree courses in civil, electrical and mechanical engineering, and the quality of its scholastic standards won it a place of prestige throughout the British India.

In 1954 it started a Bachelor's Degree course in Mining Engineering, the first-ever of its kind in the country. But its massive expansion and development commenced in 1961 on its transformation into a University. It set for itself a variety of goals, but the first priority was to start teaching of those disciplines which were crucial for national development but were not catered for by any institution in the country. Accordingly, in the sixties, Bachelor's degree courses were started in Chemical Engineering, Petroleum & Gas Engineering, Metallurgical Engineering, Architecture, and City & Regional Planning.

Later, the University concentrated its energies and resources on developing it's postgraduate programs. By 1970's it had established over a score of Master's Degree Courses in diverse specializations of engineering, architecture, planning and allied disciplines. Ph.D. Degree Program was also instituted in a number of disciplines. The process of consolidating and strengthening continued to be a major concern of the University, with phenomenal increase in students' enrollment in seventies. Consequently, the University College of Engineering was established in 1975 at Sahiwal. For three years it functioned at Sahiwal and than was shifted to its present campus at Taxila in 1978. Subsequently, this college was upgraded to a university and it is currently functioning as University of Engineering and Technology, Taxila.

Establishing traditions of research in the engineering and allied disciplines has been a major goal of the University. With this end in view, the University established a Directorate of Research, Extension and Advisory Services, now called office of Research, Innovation and Commercialization (ORIC), which strives for the promotion and organization of research activities.

In the recent past, there has been a substantial rise in students' enrollment and the figure has now gone up to over 13380. Currently, 2928 students are pursuing postgraduate studies. The number of female students enrolling for different disciplines is ever on the increase, and is 3239 at present. The number of foreign students coming from countries, like Iran, Jordan, Kuwait, Kenya, Nepal, Saudi Arabia, Iraq, Bangladesh and Sri Lanka is over 473 which gives the University Campus a cosmopolitan character.

The university has 789 teachers of which 362 have a Ph.D. degree holders, while 101 are doing Ph.D. abroad

The teaching departments of the University are grouped into the following seven faculties:

- Faculty of Electrical Engineering
- Faculty of Mechanical Engineering
- Faculty of Civil Engineering
- Faculty of Architecture & Planning
- Faculty of Chemical, Metallurgical and Polymer Engineering
- Faculty of Natural Sciences, Humanities and Islamic Studies
- Faculty of Earth Sciences and Engineering

The university set up a campus at Faisalabad in 2006 and also established a campus at Kala Shah Kaku in 2007, which is known as University's City Campus. Rachna College of Engineering & Technology, Gujranwala is a constituent college and follows the same academic curriculum and policies as the ones followed at the main campus in Lahore. In 2012, the university established a new campus in Narowal with an aim to produce quality technical manpower for the District of Narowal and its surroundings. In addition to managing its own campus, the University controls the academic programs and examinations of numerous institutions which are affiliated with it for award of degrees.

POSTGRADUATE PROCESS

1. To make a uniform policy for admission to the postgraduate classes, including Ph.D. classes, it was envisaged that admission to all postgraduate classes be opened at one time according to admission schedule under these regulations:

2. DEFINITIONS

i. 'University' means University of Engineering and Technology, Lahore
ii. 'Faculty' means the concerned faculty of the university.
iii. 'Dean' means the Dean of the faculty concerned.
iv. 'Chairman' means the chairman of the department concerned.
v. 'Controller of Examinations' means the controller of examinations of the university
vi. 'Academic Year' means a year consisting of Spring and Fall Semester.
vii. 'Vice Chancellor' means the Vice Chancellor of the University.
viii. 'Pro Vice Chancellor' means the Pro Vice Chancellor of the University.
ix. "Student" means a bonafide student of a degree program of the University who does not maintain admission simultaneously in any other degree/diploma program of the University or in any other Institution

EXPLANATION

a. In these regulations the pronoun 'he' and 'its' are used for both male and female persons.
b. The medium of instruction, writing thesis and examination shall be English except for Islamic Studies where the medium of instruction, writing thesis and examination may be Urdu, Arabic or English.

3. AWARD OF POSTGRADUATE DEGREES

Postgraduate Degrees shall be awarded in the following disciplines:

a. In the department of Electrical Engineering (Lahore Campus):
- Ph.D. Electrical Engineering
- M.Sc. Electrical Engineering with specializations in:
  i. Power System
  ii. Computer
  iii. Electronics & Communication
- M.Sc. Telecommunication Networks

b. In the department of Electrical Engineering (Faisalabad Campus):
- M.Sc. Electrical Engineering with specializations in:
  i. Power System
  ii. Electronics & Communication

c. In the department of Computer Engineering:
- Ph.D. Computer Engineering
- M.Sc. Computer Engineering

d. In the department of Computer Science (Lahore Campus):
- Ph.D. Computer Science
- M.Sc. Computer Science with specializations in:
  i. Software Engineering
  ii. System Engineering
  iii. Artificial Intelligence
  iv. Database Systems

e. In the department of Mechanical Engineering (Lahore Campus):
- Ph.D. Mechanical Engineering
- M.Sc. Mechanical Design Engineering
- M.Sc. Thermal Power Engineering
- M.Sc. Automotive Engineering
- M.Sc. Railway Engineering
- M.Sc. Renewable Energy Systems Engineering

f. In the department of Mechanical Engineering (Kala Shah Kaku Campus):
- M.Sc. Thermo-fluid Engineering

g. In the department of Industrial and Manufacturing Engineering:
- Ph.D. Industrial and Manufacturing Engineering
- M.Sc. Manufacturing Engineering
- M.Sc. Engineering Management

h. In the department fo Mechatronics and Control Engineering:
- Ph.D. Mechatronics and Control Engineering
- M.Sc. Mechatronics Engineering

i. In the Center for Energy Research and Development (Kala Shah Kaku Campus):
- M.Sc. Energy Engineering

j. In the Department of Civil Engineering:
- Ph.D. Civil Engineering
- M.Sc. Structural Engineering
- M.Sc. Geotechnical Engineering
- M.Sc. Hydraulics & Irrigation Engineering

k. In the Department of Architectural Engineering and Design:
- M.Sc. Integrated Building Design
- M.Sc. Architectural Engineering
- M.Sc. Construction Management

l. In the department of Transportation Engineering:
- Ph.D. Transportation Engineering
- M.Sc. Transportation Engineering
- M.Sc. Transportation Informatics

m. In the Institute of Environmental Engineering and Research:
- Ph.D. Environmental Engineering
- M.Sc. Environmental Engineering
- M.Phil. Environmental Sciences

n. In the department of Chemical Engineering (Lahore Campus):
- Ph.D. Chemical Engineering
- M.Sc. Chemical Engineering with specializations in:
  i. Process Engineering
  ii. Industrial Pollution Control Engineering
  iii. Bio-Chemical Engineering
  iv. Computer Aided Design

o. In the department of Chemical Engineering (Kala Shah Kaku Campus):
- M.Sc. Safety Health and Environment

p. In the department of Chemical Engineering (Faisalabad Campus):
- M.Sc. Chemical Engineering

q. In the department of Polymer and Process Engineering:
- Ph.D. Polymer Engineering
- M.Sc. Polymer & Process Engineering
- M.S. Polymer Science and Technology

r. In the department of Metallurgical & Materials Engineering:
- Ph.D. Metallurgical and Materials Engineering
- M.Sc. Metallurgical & Materials Engineering

s. In the department of Mining engineering:
- Ph.D. Mining Engineering
- M.Sc. Mining Engineering
- M.Sc. Tunneling and Underground Excavation Engineering

t. In the department of Geological Engineering:
- Ph.D. Geological Engineering
- M.Sc. Geological Engineering
- M.Sc. Geological Sciences

u. In the department of Petroleum and Gas Engineering:
- Ph.D. Petroleum and Gas Engineering
- M.Sc Petroleum & Gas Engineering

v. In the department of City & Regional Planning:
- Ph.D. City and Regional Planning
- M.Sc. City & Regional Planning
- M.Sc. Community Development and Environmental Management
- M.Sc. Disaster Management

w. In the department of Architecture:
- Ph.D. in Architecture
- Master's in Architecture

x. Master's in Product and Industrial Design:

y. In the department of Chemistry:
- Ph.D. Chemistry
- M.Phil. Applied Chemistry
- M.Phil. Food Science and Technology

z. In the department of Physics:
- Ph.D. Physics
- M.Phil. Applied Physics
- M.Phil. Nano Science and Technology

aa. In the department of Mathematics:
- Ph.D. Mathematics
- M.Phil. Applied Mathematics

ab. Ph.D. Islamic Studies:

ac. In the Center of Excellence in Water Resource Engineering:
- Ph.D. Engineering Hydrology
- Ph.D. Water Resources Engineering
- Ph.D. Water Resources Management
- M.Sc. Water Resources Engineering
- M.Sc. Water Resources Management
- M.Sc. Engineering Hydrology
- M.Sc. Hydro Power Engineering

ad. In the Institute of Business and Management:
- Master in Business Administration and Management (MBA)
- Executive MBA
- M.S. Management
- M.S. Marketing

POSTGRADUATE APPLICATION PROCESS

1. ELIGIBILITY FOR ADMISSION INTO M.Sc., MASTERS and M.S. PROGRAMS

1.1 Only those applicants will be eligible for admission who have passed their undergraduate (16 years equivalent) degree by securing a minimum of 60% raw score under annual system or a CGPA of 2.50 out of a maximum of 4.00 under semester system. CGPAs on other scales will be translated accordingly. In case CGPA and marks are both recorded on the transcript, then CGPA score would be considered.

1.2 An applicant for admission to a postgraduate program, (other than those mentioned in the table below) must possess at least a 16 years equivalent Bachelor's degree in the relevant discipline/ subject from a HEC recognized institute/University unless higher qualification is laid down for a particular discipline.

Degree Title	Required Qualification from HEC Recognized Institute/ University
M.Sc Electrical Engineering	Bachelor's degree in Electrical Engineering or Telecommunication Engineering or Electronics Engineering
M.Sc. Telecommunication Networks	Bachelor's degree in Electrical Engineering or Telecommunication Engineering or Electronics Engineering
M.Sc. Computer Engineering	Sixteen years degree in Computer Science & Engineering or Computer Systems Engineering or Computer Engineering or Electrical Engineering or M.Sc. (16 years) in Physics with specialization in Electronics or M.Sc. (16 years) in Electronics
M.Sc. Computer Science	Sixteen years equivalent Bachelor's degree in Computer Science or Computer Science and Engineering or Computer Systems Engineering or Computer Engineering or M.Sc. (16 years) in Computer Science or equivalent or B.Sc. Electrical Engineering subject to completion of six additional CS foundations courses as determined by the Postgraduate Committee
M.Sc. Automotive Engineering	B. Sc. Mechanical Engineering
M.Sc. Thermo-fluid Engineering	B. Sc. Mechanical Engineering
M.Sc. Railway Engineering	B.Sc. in Mechanical Engineering; or Electrical Engineering; or Civil Engineering; or Mechatronics Engineering or Industrial and Manufacturing engineering
M.Sc. Renewable Energy Systems Engineering	B.Sc. Mechanical Engineering; or B.Sc./BE Renewable Energy/ Energy Systems Engineering
M.Sc. Mechatronics Engineering	B.Sc. in Mechatronics Engineering or Mechanical Engineering or Industrial & Manufacturing Engineering or Electrical/Electronics Engineering or Computer Engineering or Aerospace/ Avionics Engineering from HEC recognized university
M.Sc. Engineering Management	Any B.Sc. Engineering Degree
M.Sc. Environmental Engineering	B.Sc. in Civil Engineering or Chemical Engineering or Environmental Engineering or Transportation Engineering or Architectural Engineering & Design or Mechanical Engineering
M.Phil. Environmental Sciences	Sixteen years of education (B.Sc. or M.Sc.) in Environmental Sciences or Chemistry or Biochemistry, or Zoology or Botany or Agricultural Sciences or B.Sc. in Environmental Engineering or Civil Engineering
M.Sc. Integrated Building Design	B.Sc. Architectural Engineering & Design or B.Sc. Civil Engineering or Bachelor of Architecture
M.Sc. Construction Management	B.Sc. in Architectural Engineering or Civil Engineering or Transportation Engineering or Construction Management or City and Regional Planning or Bachelor of Architecture
M. Sc. Transportation Engineering	B.Sc. in Transportation Engineering or Civil Engineering or Urban Engineering
M. Sc. Transportation Informatics	Sixteen years of education (B.Sc. or M.Sc.) in Computer Science or B.Sc in Computer Engineering or Transportation Engineering
M.Sc. Geological Engineering	B.Sc. Geological Engineering or B.Sc. Mining Engineering or B.Sc. Petroleum & Gas Engineering or B.Sc. Civil Engineering

Degree Title	Required Qualification from HEC Recognized Institute/ University
M.Sc. Geological Sciences	B.S. Geology or M.Sc. Geology (16 years) or B.Sc. Geological Engineering or B.Sc. Mining Engineering or B.Sc. Petroleum & Gas Engineering or B.Sc. Civil Engineering. However, pre-requisite subjects, if required, will be decided at the time of admission considering the subjects opted by the students
M. Sc. Petroleum and Gas Engineering	B.Sc. Petroleum and Gas Engineering or Geological Engineering. Candidates selected on the basis of Geological Engineering will be required to study pre-requisite subjects as determined by departmental Postgraduate Research Committee
M.S. Polymer Science and Technology	16 years degree in Chemistry or Applied Chemistry or Physics or Applied Physics or Chemical Engineering or Chemical Engineering Technology or Polymer Engineering or Mechanical Engineering or Materials Science and Engineering
M.Sc. Safety Health and Environment Technology	16 years of education (Bachelor's in Engineering or Bachelor's in Technology programs) from a recognized institution
M.Sc. Metallurgical and Materials Engineering	B.Sc. in Metallurgical and Materials Engineering or Chemical Engineering or Polymer Engineering or Mechanical Engineering or Industrial and Manufacturing Engineering
M.Sc. Tunneling & Underground Excavation Engineering	B.Sc. in Mining Engineering or in Geological Engineering or in Civil Engineering
Master of Architecture (M.Arch.)	Bachelor of Architecture or B.Sc. Architectural Engineering & Design or City & Regional Planning or Civil Engineering
M.Sc. City & Regional Planning	B.Sc. City & Regional Planning or Bachelor of Architecture or B.Sc. Civil Engineering
M.Sc. Community Development and Environmental Management	Sixteen years equivalent degree from HEC recognized University/ Institution in one of the following disciplines: Civil Engineering, Architectural Engineering and Design, Environmental Engineering, Transportation Engineering and Management, Environmental Science, Architecture, City and Regional Planning, Product and Industrial Design, Sociology, Social Work, Economics, Geography, Geographical Information Systems, Development Studies, Public Administration, Public Policies, Gender Studies, Management Sciences, Mass Communication
M.Sc. Disaster Management	Sixteen years of education (B.Sc. or M.Sc.) in any of the following subjects: Disaster Management, Earth Sciences, Environmental Sciences, Space Sciences, Biological Sciences, Management Sciences, Agriculture Sciences, Agricultural Engineering, Medical Sciences, Economics, Sociology, Social Work, Psychology, Anthropology, Forestry, Architecture, Gender Studies, Civil/ Electrical/ Mechanical/Chemical/ Mining/Geological Engineering, City/Urban & Regional Planning, Bachelor's in Architecture or Product and Industrial Design
Master in Product and Industrial Design (M.PID)	Undergraduate degree in PID or equivalent
M.Phil. Nano Science and Technology	16 years degree in Physics or Chemistry or B.Sc. Engineering degree in Electrical or Chemical or Metallurgical or Polymer. B.Sc. (Engineering) Technology degree in Electrical or Chemical or Metallurgical
M.Phil. Food Science and Technology	16 years degree in Food Science and Technology or Chemistry or Biochemistry or Agricultural Chemistry or Biotechnology

2. MINIMUM ELIGIBILITY FOR ADMISSION IN Ph.D. PROGRAMS

a. The applicant must have earned at least sixteen years bachelor's degree in relevant discipline in first division or with a CGPA of 3.0 out of a maximum of 4.0.
Applicants having a seventeen years or above Masters/ M.Sc./ M.Phil., or equivalent degree who earned their degree in relevant discipline in first division or with a CGPA of 3.0 out of a maximum of 4.0 will have a maximum of 24 ch transferred towards Ph.D.

b. In case, applicant's transcript shows percentage as well as CGPA, CGPA would be considered for eligibility. CGPAs on a scale other than 4.00 would be translated accordingly.

3. APPLICATION FEE

a) The application processing fee is Rs.1,000/-.

b) The application processing fee once remitted shall not be refunded.

c) Applicants wishing to apply for admission into more than one program will be required to pay Rs 1,000/- as processing fee for each. Thus, applicants applying to two programs will fill two applications forms and pay Rs. 2,000/- (Rs. 1,000/- for each application).

4. PROCEDURE FOR FILLING AND SUBMISSION OF APPLICATION FORM

You will require an Admission Code to be able to login to the option of "**Fill Postgraduate Admission Application**" on the admission portal.

4.1 Purchasing Prospectus for Admission Code

Admission Code is available on the inner side of the back-title cover of the prospectus. This code is valid for only one on-line admission application submission. In case an applicant wishes to apply in more than one postgraduate program, he will have to buy as many prospectuses.

4.2 Getting the Admission Code On-line

In case you have NOT purchased the prospectus, you may get the Admission Code on-line by:

a) Login to the admission portal ***admission.uet.edu.pk***

b) Select "**Generate PG Admission Challan**" button on the admission portal.

c) You will be asked to enter your name, father's name and CNIC number.

d) A challan number will be generated. You may pay the application fee using this number on-line using one of the following options:

4.3 Payment through HBL/ Konnect APP.

i. Login to the Konnect mobile application and tap the" **LIFESTYLE"** button.

ii. Select **"EDUCATION**" option.

iii. Tap on "**SCHOOL FEE".**

iv. A list of institutions will appear. Select **UET Lahore** and enter Challan Number.

v. After verifying your name, make the payment.

vi. Now you may use this paid Challan Number as your Admission Code.

4.4 Payment through HBL On-line Banking (For HBL Account Holders only)

i. Login to the HBL on-line banking application on your computer or mobile if you have access to a HBL account.

ii. Select **"MORE"** option.

iii. Select "**EDUCATION**" under Bill Payment category.

iv. A list of institutions will appear. Select **UET Lahore** and enter Challan Number.

v. After verifying your name, make the payment.

vi. Now you may use this paid Challan Number as your Admission Code.

5. FILLING AND SUBMISSION OF APPLICATION FORM

a) You will fill the admission application form by logging into https://admission.uet.edu.pk

b) You will be asked to enter the following information:
- CNIC Number
- Admission Code

c) You will fill the requisite information. It is emphasized that if you have obtained 16 years degree under annual system of examination, you are required to add all marks obtained from first year to final year without any weightage, while entering data in their application.

d) If you are a Ph.D. applicant:

i. You will choose a Ph.D. supervisor from the list of faculty members available on the admission portal. Your choice may be amended, if required, by the department.

ii. You will write/ upload a Statement of Purpose (SoP) of at least 400 words, which will be used by the

department's admission committee to ascertain the your preparedness and interest in pursuing doctoral studies, and whether the department has the requisite resources to train and supervise you in the subspeciality you are interested in.

e) The applicant will scan the following document and make a single PDF file titled "Documents-your Name.pdf":
   i. Matriculation or equivalent certificate
   ii. Intermediate or equivalent certificate
   iii. 16 years education degree and transcript/ Detailed Marks Sheet
   iv. Copy of Pakistan Engineering Council (PEC)/ PCATP registration card, if required.
   v. CNIC
   vi. Domicile
   vii. No Objection Certificate from employer, if employed
   viii. No Objection Certificate from Registrar, if employed by UET Lahore

f) The "Documents-your Name.pdf" file will be uploaded with the application.

g) On successful submission, an "Admit Card" will be generated to facilitate the applicant in appearing in the Subject Test.

6. **SUBJECT TEST**

Subject tests will be conducted by the respective departments on dates specified by the departments. Qualifying score for M.Sc./ M.Phil./ Masters/ M.S. is 50% in the subject test. The qualifying score for Ph.D. applicants is 70% in the subject test.

7. **INTERVIEW FOR ADMISSION**

Only qualifying applicants will appear in the interviews according to schedule published by respective department.

In case of PhD applicants, the department will assess the following during the interview:

i. Relevancy of the applicant's discipline in the last degree and will verify that the applicant's prior education has sufficiently prepared him/ her to undertake the course of studies of the doctoral program or the committee may deem the preparation satisfactory subject to taking few additional courses, over and above the PhD course requirement, after admission.

ii. The SoP submitted by the applicant.

8. **ADMISSION OF FOREIGN CANDIDATES**

Admission of foreign applicants will be made on the basis of the academic record of the applicant and the assessment of his scholarship made by the Postgraduate Research Committee (PGRC) of the Department concerned. The PGRC may ask the applicant to appear for test and interview, if feasible.

9. **DETERMINATION OF MERIT**

i. Merit of applicants from within Pakistan will be computed as under:
   - 16 years UG score: 40%
   - Subject Test score: 40%
   - Interview: 20%

ii. Merit of international applicants will be determined as under:
   - 16 years UG score: 100%

iii. CGPA of 2.5 out of 4.0 will be treated as 60% for M.Sc/ M.Phil/ Masters/ M.S. programs and a CGPA of 3.0 out of 4.0 will be treated as 60% for Ph.D. programs and CGPA of 4.0 out of 4.0 will be treated as 90% for both programs for the purpose of determining merit weight. Intermediate CGPA scores will be interpolated linearly.

iv. Ph.D. applicants scoring minimum overall merit of 70% will be considered for admission.

10. **ADMISSION ON MERIT**

Admission will be granted on merit.

11. **AGE LIMIT**

There is no age restriction for admission to postgraduate degree program.

12. **PRE-REQUISITE COURSES**

Depending upon the number and nature of courses studied by an applicant at the undergraduate level, the candidate may be directed by the PGRC to study and pass a certain number of pre-requisite courses at the undergraduate level before permission to attend the postgraduate classes.

13. **PROCEDURE FOR SELECTED APPLICANTS**

13.1 Notification of Selection

A list of selected applicants will be put up on the University notice boards and on the UET website "https://admission.uet.edu.pk". Kindly note that no written offer letter would be dispatched to selected applicants. It is responsibility of the applicant to remain abreast with the status of admissions as available on the website and on the notice boards. Fee Challan for first semester and admission dues will be visible in the applicant's login on the admission portal.

13.2 Depositing of Dues and Documents

Within the prescribed time, a selected applicant is required to pay the University dues and submit the following documents in all manners prescribed on the website in the office of the Deputy Registrar Students Section:

i. Paid Original Bank Challan as proof of payment of dues. Candidate must keep photocopies of this challan/documents for his/her own record and for submission to the department.
ii. One set of photocopies of each educational document including domicile.
iii. Original B.Sc. Degree/Provisional Certificate and Detail Marks Certificate/ Transcript along with six sets of photocopies of the same.
iv. NOC from employer (if employed).
v. Six copies of the most recent passport size photograph
vi. Two copies of CNIC.
vii. Muslim applicants will submit a Finality of Prophethood Declaraton Form
viii. Bio-data card Form-I duly completed in all respects.
ix. Medical Certificate Form-II duly signed and stamped by Medical Practitioner registered with PMDC
x. Undertaking (Sample Form –III) on a Rs. 100/- judicial paper duly completed

14. **RELAXATION IN TIME LIMIT**

If a selected applicant is prevented by unavoidable circumstances from timely fulfillment of the requirements laid down in the above clause, then he should intimate the Convener Admission Committee about it within the prescribed time limit along with relevant documentary proof. The Convener Admission Committee may, at his discretion, grant relaxation in the time limit.

15. **FORFEITURE OF RIGHT OF ADMISSION**

a. A selected applicant who fails to fulfill the requirements laid down in the above clause within the prescribed time-limit shall forfeit his right of admission.
b. No applicant shall normally be admitted after 15 days from the beginning of the classes.

16. **REGISTRATION IN THE DEPARTMENT**

On fulfillments of the requirements mentioned above, the applicants admitted to applicable Ph.D. M.Sc. Masters, M.S. or M.Phil. program shall report to the respective department according to the published schedule. They will receive registration numbers from their department through University Learning Management System.

Ph.D. REGULATIONS

PREAMBLE

Ph.D. regulations of the university have been formulated in accordance with the guidelines notified by the Higher Education Commission (HEC) of Pakistan. These regulations may be modified, as the need arises, to include recommendations made by the Advanced Studies and Research Board (ASRB) of the university.

INTRODUCTION

Ph.D. program of a university reflects the intellectual standing and its overall academic quality. Ph.D. regulations provide the necessary mechanism to meet these goals. Climax of the Ph.D. program is the thesis which is expected to:

a) Make a distinct contribution to knowledge, and

b) Show ability on the part of the candidate to conduct original investigations and to test ideas whether his own or of others and to understand the relationship of his investigations with a wider field of knowledge

1. MEDIUM OF INSTRUCTION

The medium of instruction, writing thesis and examination shall be English except for Islamic Studies where the medium of instruction, writing thesis and examination may be Urdu, Arabic or English.

2. ADMISSION PROCESS

a) Minimum Eligibility

i. The applicant must have earned at least sixteen years bachelor's degree in relevant discipline in first division or with a CGPA of 3.0 out of a maximum of 4.0.

ii. In case, applicant's transcript shows percentage as well as CGPA, CGPA would be considered for eligibility. CGPAs on a scale other than 4.00 would be translated accordingly.

b) Submission of Application

i. Every applicant for the degree of Ph.D. shall apply for admission on-line through UET admission portal along with scanned copies of the prescribed documents.

ii. The applicants shall define the area of research and proposed supervisor. Profile of supervisors will be uploaded on the UET website for guidance of candidates.

c) Statement of Purpose

A Statement of Purpose (SoP) written in at least 400 words will be submitted by the applicant, which will be used by the departmental admission committee to ascertain the preparedness and interest of the applicant in pursuing doctoral studies, and whether the department has the requisite resources to train and supervise the doctoral candidate in the subspeciality he / she is ineterested in.

d) Ph.D. Admission Test

I. Ph.D. Admissions Subject Test will be arranged and conducted by UET.

ii. Minimum qualifying score is 70% in the subject test. International candidates will be required to submit score of ETS GRE (General)Test. Minimum eligible percentile score in quantitative GRE(General) will be 70%.

iii. Local applicants qualifying in the Subject Test will appear in an interview before the departmental admission committee.

e) Admission Interview

Department's admission committee will interview the qualified applicants and assess the following:

i. Relevancy of the applicant's discipline in the last degree and will verify that the applicant's prior education has sufficiently prepared him to undertake the course of studies of the doctoral program or the committee may deem the preparation satisfactory subject to taking few additional courses, over and above the Ph.D. course requirement, after admission.

ii. The SoP submitted by the applicant.

f) Merit Calculation

i. Merit of applicants from within Pakistan will be computed as under:
- 16 years UG score: 40%
- Subject Test score: 40%
- Interview: 20%

ii. Merit of internatonal applicants will be determined as under:
- 16 years UG score: 100%

iii. CGPA of 3.0 out of 4.0 will be treated as 60% and a CGPA of 4.0 out of 4.0 will be treated as 90% for the purpose of determining merit weight. Intermediate CGPA scores will be interpolated linearly.

iv. Minimum overall merit should be 70% to be eligible for admission consideration.

3. ADMISSION DECISIONS

a) Post Graduate Research Committee (PGRC) of the concerned department shall evaluate the applications on merit. Advisors from department, for accepted applicants will be appointed by the PGRC for their guidance and counseling. Accepted applications would be forwarded to the Admission Office, through the concerned Dean, for further processing.

b) Admission Office will issue provisional admission letters to qualifying applicants and they will be classified as "Ph.D. students" after admission.

4. TRANSFER OF COURSES

Students having seventeen years or above Masters/ M.Sc./ M.Phil., or equivalent degree at the time of admission may apply to the department for transfer of courses. The Post Graduate Research Committee will assess the courses studied in Masters/ M.Sc./ M.Phil., or equivalent degree and recommend transfer of subject as per the following policy.

a) A maximum of 24 credit hours of course work may be transferred.

b) Courses have been studied in an HEC approved university.

c) The overall CGPA in transferred courses is at least 3.0 out of 4.0.

d) Transferred course has the same depth and breadth as the postgraduate course, offered by the department, in lieu if which it is being transferred.

e) The credits transferred shall be counted towards the degree requirements of the student.

f) GPA of transferred credits shall not be counted towards the calculation of CGPA, and that only "Transferred" shall be written against those course(s) in which transfer of credits was allowed.

g) Courses will be transferred as per the university policy on "Transfer of Postgraduate Courses" for students applying for transfer of courses who have been enrolled in a Ph.D. program at an HEC approved university after having earned a Masters/ M.Sc./ M.Phil., or equivalent degree. This transfer will be over and above the maximum 24 credit hours of course work admissible to such students.

5. CONFIRMATION OF Ph.D. ADMISSION AND AWARD OF CANDIDACY

a) A Ph.D. student shall complete a minimum of 48 credit hours of course work from within the departments or from other departments in consultation with the department's Advisor. Transferred credit hours will be counted towards fulfillment of this minimum requirement. He is required to maintain a CGPA of 3.3 out of 4.00 in these courses.

b) The student shall sit in a comprehensive examination after fulfilling course requirements.

c) Comprehensive examination shall be conducted by the concerned department once each semester under the general supervision of the PGRC. The comprehensive examination shall cover the core area of specialization (as notified by the Department) and shall consist of written and oral parts in the proportion of 80% and 20%, respectively. The combined pass percentage shall be 60 percent.

d) A student will be given a second chance to appear in the comprehensive examination in the subsequent semester if he fails in the first attempt. Failure in second attempt shall be communicated to the Admission Office and his provisional admission to the Ph.D. program shall be canceled. Such students will not be eligible to seek readmission in UET. However, they may be awarded Masters/ M.Sc./ M.Phil., if admissible according to university regulations.

e) The Ph.D. student will be awarded "Candidacy" upon successful completion of the comprehensive examination.

f) Post Graduate Research Committee may recommend cancellation of admission of students failing to earn candidacy within six regular semesters following their admission into Ph.D. program.

g) Department's PGRC will recommend a three members Advisory Committee for the Ph.D. candidate including a HEC approved supervisor, co-supervisor (optional) and area of research. Co-supervisor will constitute the fourth member, if appointed. The supervisor will be the chairman of the committee and one member from remaining two being appointed from outside the department/ university.

h) The Ph.D. candidate shall present his research proposal to PGRC. After presentation, PGRC shall assess the research proposal or have it assessed through a process established for this purpose. After establishing suitability of the proposal as a potential Ph.D. topic, proposal along with the title shall be submitted to Director ORIC for placement before Advanced Study and Research Board (ASRB) for approval.

6. PROGRESS REPORTS

After approval of the proposal, the candidate will submit a thesis progress report after passage of each semester which will be forwarded to the ASRB through the concerned PGRC and Dean.

7. **CHANGE OF SUPERVISOR/TOPIC**

a) Any subsequent changes in the proposal, title or the topic shall also be routed through the same channel.

b) The candidate may request for change in Ph.D. supervisor or a supervisor may opt to withdraw from supervision of a candidate. The candidate or the supervisor shall submit their request to the chairperson concerned. Recommendation for change of supervisor will be made by PGRC of the department through Dean concerned for approval by ASRB. No relaxation in maximum allowable time for completion of Ph.D. degree would be granted to the candidate on the basis that his supervisor has changed.

8. **Ph.D. DURATION AND RESIDENCY**

a) The date of notification of the award of the Ph.D. degree subsequent to the Ph.D. defense shall be considered to be the date of completion of Ph.D. studies.

b) Minimum permissible period for completion of Ph.D. studies is 06 regular semesters.

c) Maximum permissible period for completion of Ph.D. studies is 16 regular semesters.

d) The ASRB, under exceptional circumstances, can grant extension up to a maximum period of four semesters, on the recommendation of the PGRC and the concerned Dean, if it has been established that the delay in completion of Ph.D. studies has been caused by circumstances beyond the student's control.

e) Two years residency requirement at the university is mandatory. Residency implies enrollment in at least 09 credit hours per semester at the university as a Ph.D. student or as a Ph.D. candidate.

9. APPOINTMENT OF EXTERNAL REVIEWERS

a) The Advisory committee shall propose a list of five external reviewers from technologically advanced countries and five external reviewers from Pakistan in relevant areas to the PGRC for its recommendation to be forwarded to the Director ORIC through the Chairman/Dean. The Vice Chancellor shall appoint five external reviewers (three from technologically advanced countries and two from Pakistan) from the proposed list.

b) The candidate shall submit five copies of his thesis, typed, and bound in addition to the soft copy, to the Controller of Examinations, through Supervisor, Chairperson, Dean and Director ORIC for onward dispatch to the approved external reviewers.

10. Ph.D. RESEARCH PUBLICATION

In order to be eligible for the award of Ph.D. degree, the candidate is required to publish, out of his research work, at least one research publication as its first auhor in an Impact Factor journal recognized by HEC Journal Recognition System (HJRS) with at least "Y" categorization in his relevant field. Letter of acceptance will be considered as sufficient for fulfilling the Ph.D. degree requirements. In case of Islamic Studies and Architecture, HEC acceptable publication standard will be required.

11. EXTERNAL REVIEWERS REPORTS

a) Each external reviewer shall submit his report to the Vice-Chancellor independently on the prescribed Performa and make one of the following recommendations:

i. That the quality of the Thesis merits award of Ph.D. degree to the candidate.

ii. That the quality of the Thesis merits award of Ph.D. degree to the candidate after incorporating the suggested changes to the satisfaction of the candidate's supervisor.

iii. That the Thesis be resubmitted for evaluation after revision as suggested by the reviewer(s).

iv. That the Thesis be rejected as not being of sufficient merit for the award of Ph.D. Degree.

b) The Vice Chancellor shall forward the received reports to the Controller of Examinations (CoE).

12. INTERPRETATION OF REPORTS

a) If the recommendation of three of the external reviewers including two from abroad and one from Pakistan is that the Thesis merits award of Ph.D. degree, it shall be implemented.

b) In case, any of the external reviewers is asking for changes, candidate's Advisory Committee shall submit a certificate to CoE certifying compliance of recommendations of external reviewer(s) by the candidate.

c) The thesis shall be resubmitted after incorporating revisions and major changes suggested by external reviewer(s), if

external reviewer(s) is/are asking for resubmission after revision.

13. **RESUBMISSION OF Ph.D. THESIS**
    a) In case of first resubmission to external reviewers, their new recommendations shall be interpreted as in Regulation 11.
    b) In case, external reviewers ask for a second resubmission, the candidate will be asked to work on his thesis for a minimum period of six months before submitting it for re-evaluation. Recommendations of reviewers shall again be interpreted as in Regulation 11.
    c) Third resubmission is not allowed, and the candidate shall be declared fail and shall not be allowed to continue with his Ph.D. even if external reviewers ask for a third resubmission.

14. **EVALUATION PROCESS IF EXTERNAL REVIEWERS FAIL TO RESPOND**
    a) In case, any of the external reviewers fails to respond within three months, the required number of reviewers will be approved from a new panel of reviewers recommended by PGRC of the concerned department.
    b) The process would be repeated until two or one, as the case may be, evaluation report(s) is/are received.

15. **PUBLIC DEFENCE OF Ph.D. THESIS/DISSERTATION**
    a) A public/ open defence of the Ph.D. dissertation will be held after positive evaluation by external reviewers.
    b) Director ORIC will ensure fulfilment of requirements as laid down in these regulations for award of Ph.D. degree before forwarding the case to CoE for declaration of Ph.D. result.

16. **AWARD OF Ph.D.**
    The candidate shall be admitted to the Ph.D. Degree in the relevant branch of Engineering, Architecture, City & Regional Planning, Physics, Chemistry, Mathematics and Computer Science, Business and Management, Islamic Studies etc., on fulfillment fo requirements laid down in these regulations.

17. **CODE OF ETHICS**
    a) Ph.D. candidate or his spouse or his relatives shall not communicate with external referees directly or indirectly.
    b) Any faculty member of the department shall not participate in the Ph.D. process of a candidate at any stage, if the candidate is his blood relation or his spouse or the faculty member is a candidate himself.
    c) External examiners may not be co-author of any publication with the candidate or his spouse or his blood relative.

18. **CONFLICT RESOLUTION**
    In case of a conflict in the interpretation of Ph.D. Regulations at any stage, the matter may be resolved by ASRB.

19. **SUBMISSION OF HEC PERFORMA**
    HEC performa as communicated vide letter number 3(2)/DG(Stats)/HEC/2017/03 dated 16-01-2017, is required to be submitted by all candidates successfully completing their Ph.D. degrees.

20. **APPLICABILITY OF REVISED CLAUSES ON STUDENTS ENROLLED BEFORE NOTIFICATION OF THE Ph.D. REGULATIONS 2021**
    The following clauses of these Ph.D. Regulations shall also be applicable to Ph.D. students/ candidates who were enrolled before the effective date of this current regulation.
    - Clause 8: Ph.D. duration
    - Clause 9: Appointment of external reviewers
    - Clause 10: Ph.D. research publication

The Department of Electrical Engineering was established in 1923 as a part of the Maclagan Engineering College. The Department started a postgraduate program in 1966 and offers three degrees:

1. Ph.D. in Electrical Engineering
2. M.Sc. in Electrical Engineering
3. M.Sc. in Telecommunication Networks
4. M.Sc. in Artificial Intelligence (Subject to the grant of NOC by HEC)

The first M.Sc. degree was awarded in 1969 and the first Doctoral Degree was awarded in 1979.

The student can choose amongst one of the following specializations while pursuing his master's degree in electrical engineering:

1. Computer
2. Electronics and Communications
3. Power Systems

The M.Sc. degree courses are aimed at bringing the students abreast with the most recent developments in their fields of specialization. For graduation, there are two options for the students – either he needs to do a thesis in his area of specialization (one of the above three) along with at least six courses from his major specialization area and a maximum of two courses from any of other two specialization areas or at least eight courses from his major specialization area and a maximum of two courses from any of other two specialization areas plus a design project. Faculty advisement is mandatory for all enrolled students. Please note that the specialization opted at the time of admission is final.

It is mandatory for all Ph.D. students to pass the GRE Subject type Ph.D. admission test administered by the Department, eight graduate courses (when admission is given after 16 years of undergraduate education) or six graduate courses (when 24 unit credit is given for a graduate degree which is earned with a CGPA of atleast 3.0 out of 4.0) , a comprehensive exam based on these courses and publish at least one article, based on his original research, in an impact factor journal before the award of that degree. There is no tuition fee for full-time Ph.D. students.

The Department has highly qualified and experienced faculty with most of the Ph.D. faculty members graduates of reputed national and international universities. Faculty members with higher qualifications are

engaged in M.Sc./Ph.D. teaching and research supervision.

Research work being carried out at the Department has direct bearing on the needs of national industry. The Office of Research, Innovation and Commercialization of the University, in particular, funds this research. A number of research papers are produced every year by faculty members and graduate students, which are normally published (presented) in major national and international journals (conferences).

The Department has a well-stocked and up-to-date library for the use of faculty and students. This also houses a large number of numerous books donated by late Dr Masood Ahmad. Department also offers consultancy services and testing facilities to local manufacturers of electrical and electronics equipment. It also arranges frequent seminars and workshops in various areas of electrical power, electronics, communications, computer and control systems engineering. Faculty members and prominent researchers from home and abroad deliver these seminars.

The department is also home to ZTE-UET Telecommunication Center, which offers M.Sc. in Telecommunication Network to professionals and students.

In today's world and in the foreseeable future, artificial intelligence (AI) is and will remain an essential component of all engineering applications. Its vast areas of application include diverse fields such as industrial robotics, e-commerce, and the defence industry. The Master of Science in AI program is designed to provide a rigorous and intensive training to students in the areas of machine learning, artificial intelligence, and robotics. The curriculum is rigorous enough that it adequately prepares the student to excel in academia and higher education yet is practical enough that it easily qualifies the student to work in the ever-growing AI industry.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Muhammad Kamran Professor and Dean	Algorithmic digital system design & networking, Power quality and transients, High voltage engineering and protection.
Dr. Khalid Mahmood ul Hasan Professor and Chairman	Power electronics, Machine drives and Control systems
Dr. Muhammad Imran Sheikh Professor	Adaptive antenna arrays, Wireless channel modeling and Microwave circuits
Dr. Muhammad Tahir Professor	Network resource optimization, Wireless sensor networks, Wireless network modeling, Distributed control of dynamical systems and Networked control systems
Dr. Muhammad Asghar Saqib Professor	Arcing in high voltage, Fuses and circuit breakers, Renewable energy and power electronics
Dr. Kashif Javed Professor	Machine learning
Dr. Asim Loan Associate Professor	Digital communications and Software defined radios.
Dr. Irfan Ullah Chaudhary Associate Professor	Machine Learning, Artificial Intelligence, Theoretical Computer Science.
Dr. Umar T Shami Associate Professor	Power electronics
Dr. Syed Abdul Rahman Kashif Associate Professor	Power electronics
Dr. Farhan Mahmood Associate Professor	Power Systems and High voltage engineering.
Dr. Rabia Nazir Associate Professor	Digital control of power converters,
Dr Haq Nawaz Associate Professor	Antennas
Dr. Ahsen Tahir Assistant Professor	Machine and deep learning, hardware accelerator, reconfigurable\computing, health sensing and informatics, natural language processing.
Dr. Nauman Ahmed Assistant Professor	High performance computing.
Dr Syed Shah Irfan Hussain Assistant Professor	Array signal processing, Adaptive signal processing, Antennas and Microwave systems.
Dr. Naveed Nawaz Assistant Professor	IoT, fog/ cloud computing
Dr. Adeem Aslam Assistant Professor	
Dr Omer Lateef Assistant Professor	Power Systems.
Dr Ubaid Ullah Fayyaz Assistant Professor	Coding, Synchronization and Software defined radios.
Dr Awais Yousaf Assistant Professor	Interconnection of solar generators with the grid.
Dr Hasan Erteza Gelani Assistant Professor	DC power distribution microgrids, Energy efficiency of power systems
Dr Muhammad Ali * Associate Professor KSK Campus	Ipv6 Networks, Inter-domain Routing, SIP Signaling, Quality of Service of Multimedia apps, Satellite Networking, Cryptography and Network Security

Dr Fahim Gohar Awan * Associate Professor KSK Campus	Electromagnetic compatibility, Digital communications, Wireless communications, Electronics, measurements and instrumentation.
Dr Hifsa Shahid * Assistant Professor KSK Campus	Design & Fabrication of semiconductor LASERs, Optical circuits and system design concentrated photovoltaic.
Dr Umar Rashid * Assistant Professor KSK Campus	Communications and Signal processing
Dr Farooq Mukhtar * Assistant Professor KSK Campus	Microwaves, Electromagnetics theory and Computation
Dr Bilal Wajid * Assistant Professor KSK Campus	Genomics
Dr Farrukh Arslan * Assistant Professor KSK Campus	Data mining, System engineering
Dr Muhammad Haris * Assistant Professor KSK Campus	Electronics and Communication Systems
Dr Muhammad Akram * Associate Professor FSD Campus	Video compression, Image and video processing and computer vision
Dr Faizan Dastageer * Assistant Professor FSD Campus	Power engineering, DC power distribution and Power electronics
Dr Ashir Waleed * Assistant Professor FSD Campus	Energy generation and conversion, Nano structured enhanced photovoltaics, Nano photonics
Dr Muhammad Nasir * Assistant Professor FSD Campus	Antenna systems
FSD Campus	Power quality, Power distribution system modeling, Impacts of DG, V2G and EV's on power systems.
Dr Haroon Farooq * Assistant Professor RCET Gujranwala Campus	Embedded systems, Digital integrated circuits,
Dr Tayyab Mehmood * Assistant Professor RCET Gujranwala Campus	Fault-tolerant circuits and systems, Microprocessor architecture emerging on-chip memory technologies. Image processing and Multiple target tracking.
Dr Ata-ur-Rehman * Assistant Professor RCET Gujranwala Campus	
Dr Farooq Ahmad * Assistant Professor NWL Campus	Micro Electro Mechanical Systems (MEMS)
Dr Rana Tariq Mehmood Ahmad * Assistant Professor NWL Campus	Semi-conductor materials and electronics
Dr Muhammad Imran Javaid * Assistant Professor NWL Campus	Communications

* Faculty at satellite campuses is also involved in teaching graduate courses.

Subjects referred in M.Sc./Ph.D. in Electrical Engineering

Two options for M.Sc. in Electrical Engineering program, each with total credit hours of 30, are being offered:

(a) Thesis Option: 8 Subjects (24 credit hours) + Research Thesis (6 credit hours)

(b) Non-Thesis Option: 10 Subjects (30 credit hours) + Design Problem (zero credit hour)

Note: All courses are 3(3+0) credit hours each unless otherwise specified.

Computer

Course Code	Course Title
EE-502	Stochastic Processes (Core)
EE-503	Linear Systems Theory (Core)
EE-506	Engineering Mathematics (Core)
EE-510	Advanced Computer Architecture
EE-511	Advanced Computer Networks
EE-512	Machine Learning
EE-516	Image and Video Processing
EE-517	Design and Analysis of Algorithms
EE-519	Cybersecurity
EE-527	Advanced VLSI System Design
EE-550	Deep Learning
EE-599a	Special Topics in Computer
EE-611	Artificial Intelligence

Electronics & Communications

Course Code	Course Title
EE-502	Stochastic Processes (Core)
EE-503	Linear Systems Theory (Core)
EE-506	Engineering Mathematics (Core)
EE-510	Advanced Computer Architecture
EE-511	Advanced Computer Networks
EE-516	Image and Video Processing
EE-520	Wireless and Mobile Communications
EE-521	Information and Coding Theory
EE-522	Statistical Signal Processing
EE-524	Optical Communications
EE-525	Advanced Electromagnetic Theory
EE-527	Advanced VLSI System Design
EE-528	Antenna Theory and Design
EE-529	Advanced Microwave Circuits
EE-561	Array Signal Processing
EE-562	Adaptive Array Processing
EE-563	Micro-Electro-Mechanical-Systems (MEMS)
EE-599b	Special Topics in Electronics & Communications
EE-620	Advanced Wireless and Mobile Communications

Power Systems	
Course Code	**Course Title**
EE-502	Stochastic Processes (Core)
EE-503	Linear Systems Theory (Core)
EE-506	Engineering Mathematics (Core)
EE-530	Power Electronics Converters
EE-535	Control of Electric Machines Drives
EE-541	Power System Dynamics and Stability
EE-547	Advanced Power Electronics
EE-549	High Voltage DC and Flexible AC Transmission
EE-570	Power System Transients and Insulation Coordination
EE-571	Power Inverters
EE-572	Smart Grids and Renewable Energy Systems
EE-599d	Special Topics in Power Systems
EE-641	Advanced Power System Operation and Control
EE-642	Condition Monitoring of High Voltage Equipment
EE-643	Power System Reliability

SUBJECT OFFERED IN M.Sc. TELECOMMUNICATION NETWORKS

Two options for M.Sc. in Telecommunication Networks program, each with total credit hours of 30, are being offered:

(a) Thesis Option: 8 Subjects (24 credit hours) + Research Thesis (6 credit hours)

(b) Non-Thesis Option: 10 Subjects (30 credit hours) + Design Problem

Note: All courses are 3 (3+0) credit hours each unless otherwise specified.

Semester-I (Group-A)
TN 500 – Mathematics for Networks
TN 520 – Advanced Communication Systems
TN 530 – Network Programming
Semester-II (Group-A)
TN 531 – Software Defined Networking
TN 522 – Optical Networks
TN 533 – Network Security and Cryptography
Semesters-III, IV (Group-A & B)
TN 502 – Optimization Theory
TN 550 – Queuing Theory
TN 561 – Next Generation Networks (3+1)
TN 562 – Broadband Access Network (3+1)
TN 564 – Radio Frequency Engineering (3+1)

SUBJECT OFFERED IN M.SC. ARTIFICIAL INTELLIGENCE

The curriculum for the M.Sc. in AI requires three Core courses, five Electives, and a Thesis (or two further Electives): Elective courses are divided into two specializations. Students will have to choose at least one course from each specialization. The specializations are:

1. Applications of Artificial Intelligence
2. Theory of Artificial Intelligence

Note: All courses are 3 (3+0) credit hours each unless otherwise specified.

M.Sc. in Artificial Intelligence

Core Courses
AI-501: Mathematical and Computational Foundations for Artificial Intelligence
AI-502: Artificial Intelligence
AI-503: Machine Learning
Applications of Artificial Intelligence
AI-511: Deep Neural Networks
AI-512: Natural Language Processing
AI-513: Computer Vision
AI-514: Reinforcement Learning
AI-515: Modern Robotics
AI-516: Artificial Intelligence for Robotics
Theory of Artificial Intelligence
AI-521: Statistical Learning Theory
AI-522: Advanced Machine Learning
AI-523: Convex Optimization
AI-524: Probabilistic Graphical Models
AI-525: Special Topics in Machine Learning
AI-526: Intelligent Control Systems
AI-527: Aspects of Computational Intelligence

Introduction

The Department of Computer Science is one of the most prominent and oldest centers of computer education in the country. Its history dates back to the year 1968 when UET Lahore established a Computer Center under the supervision of Department of Mathematics. The center was equipped with a contemporary IBM 1130 third generation batch processing system that was equipped with a disk and a monitor. The center was responsible for teaching of courses in Computer Science and Numerical Analysis, which formed an integral part of the curricula for all disciplines of B.Sc. Engineering degrees offered by UET. The center also offered short term computer courses for private and public sector organizations. A Bachelor degree program in computer science center was started in 1976. In 1978, the course was upgraded to M.Sc. Computer Science degree which made the department the first center in the country to offer a graduate program in computer science. The center became an independent department of Computer Science in 1991. The department holds an endowment chair given by His Majesty Sultan Qaboos Bin Said-Al-Said, Sultan of Oman.

Mission

To impart high quality computing education to the students in order to develop critical thinking, analytical skills and abilities to solve real-world problems for the technological and socio-economic development.

Degree Programs

The department launched M.Sc. Computer science program in 2003, whereas a Ph.D. program in Computer Science was launched in 2002. The Department offers two MS CS programs; Morning and Weekend MS CS Programs.

A minimum of 30 credit hours are required for the completion of the program. Each course corresponds to three credit hours and the M.Sc. thesis corresponds to 6 credit hours. As such, a student is required to complete 8 courses and one thesis.

Facilities

With expansion in academic programs, there are four computer laboratories in the department. These laboratories are equipped with 160

latest fully networked computers with state-of-the-art servers. In addition, the department has an FYP Lab. Computer to student ratio is 1:1. The department is proud of its no-piracy policy. All the operating systems installed are either licensed or open-source operating systems.

Department's computing facilities are linked with UET Research Center, Main Library and other teaching departments through a fiber optic backbone. Multimedia projectors are fitted where required in the class rooms and high speed internet facility is available in all laboratories. Department's class rooms are located in a purposely built adjacent building known as New Lecture Theaters.

Academic Policies Specific to Computer Science Department

The following policies are in addition of Semester System regulations of the University as given in the prospectus:

1. A set of four core courses are compulsory for each student enrolled in the program. A newly admitted student is advised to register, preferably, in the three courses during the first semester.
2. The M.Sc. CS students are required to study at least two courses in their area of specialization. The remaining two may be selected from other specializations. The students are advised to complete these specialization courses in two or more semesters.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Muhammad Kamran Professor and Dean	Algorithmic digital system design & networking, Power quality and transients, High voltage engineering and protection.
Prof. Dr. Muhammad Shoaib Professor and Chairman	Web Engineering, Information Retrieval, Software Engineering, Software Metrics, Management.
Dr. Shazia Arshad Professor	Information Retrieval System, Software Design Quality Metrics, Computerized Inventory Systems.
Dr. Muhammad Aslam Professor	Intelligent agents, Multi-agent agents, Computer Supported Cooperative Work , E-learning, E-health, Natural Language Processing (NLP), Speech Processing, Human Computer Interaction (HCI), Speech Processing, Image processing.
Dr. Usman Ghani Khan Professor	Natural Language Processing, Computer Vision, Image Processing, Computer, Graphics, Augmented Reality Audio, Speech Processing, Recognition and Perception, Machine learning for Bioinformatics Data.
Dr. Muhammad Junaid Arshad Associate Professors	Wireless Mobile Communication, Network Simulation Modeling, Computer Architecture. Methodologies, GIS, Remote Sensing Algorithms, Big Data.
Dr. Tauqir Ahmad Associate Professors	Software Engineering, Bioinformatics, Image Processing, Cloud Computing.
Dr. Amjad Farooq Associate Professors	Artificial Intelligence, Reinforcement Learning, Multi-agent Systems, E-learning, Adaptive Education Systems, Learning and Technologies.
Dr. Muhammad Awais Hassan Associate Professors	Knowledge Based Systems, E-Health and E-Learning, Health and Unani Medicine Informatics, Activity Theory, Semantic Modeling.
Dr. Talha Waheed Assistant Professors	Health & Unani Medicines Informatics, E-learning, Activity Theory, Semantic Modelling
Dr. Syed Khaldoon Khurshid Assistant Professors	Information Retrieval Systems, Natural Language Processing (NLP), E-learning and Smart Education Systems, Artificial Emotional Intelligent Systems.
Dr. Sheikh Faisal Rashid Assistant Professors	Explainable AI, Deep Learning, Machine Learning, Image Processing, Medical Imaging, NLP, Information Extraction, Speech Processing.
Dr. Amna Zafar Assistant Professors	Wireless Sensor Networks, Fault tolerance in Wireless Sensor Networks Modeling and Simulation, Machine Learning.
Dr. Sadaf Hina Assistant Professors	Cyber Security, Security in critical infrastructure, policies and compliance

Core Courses for M.Sc.

Course Code	Course Title
CS-601	Advanced Operating Systems
CS-602	Advanced Computer Architecture
CS-604	Theory of Computation
CS-605	Advanced Algorithm Analysis
CS-700	Thesis (6 Credit Hours)

Research Methodologies

Course Code	Course Title
CS-609	Research Methodologies
CS-592	Advanced Research Methodologies
CS-591	Problem Formulation Techniques

Software Engineering

Course Code	Course Title
CS-606	Advanced Software Architecture
CS-611	Advanced Software Engineering
CS-627	Theory of Measurement in Software Engineering
CS-613	Software Quality Assurance
CS-615	Object Oriented Software Engineering
CS-621	Requirement Engineering
CS-625	Advanced Topic in Software Engineering

System Engineering

Course Code	Course Title
CS-603	Distributed Systems
CS-616	Advanced Parallel & Distributed Computing

Information Systems & DBMS

Course Code	Course Title
CS-619	Web Engineering
CS-623	Advanced Web Semantics
CS-629	Web Retrieval and Information Access
CS-631	Advanced DBMS
CS-633	Advanced information Retrieval Systems
CS-635	Object Oriented Databases
CS-636	Cloud Computing
CS-637	Web Based DBMS
CS-639	Advanced Topic in DBMS

Artificial Intelligence

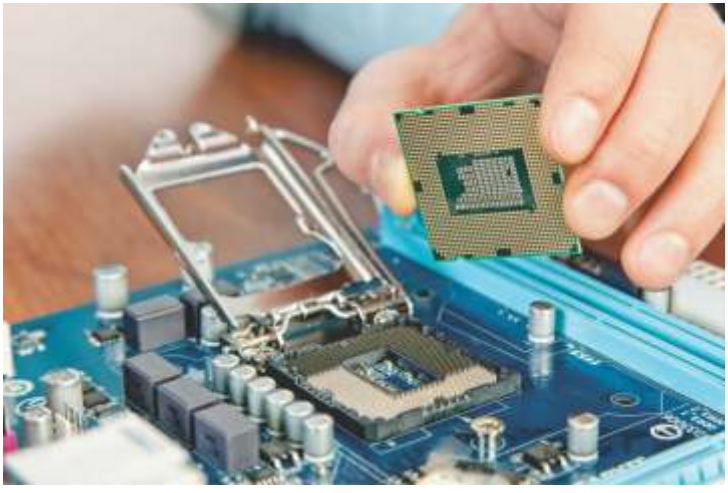
Course Code	Course Title
CS-640	Knowledge Discovery in Databases
CS-641	Design of Intelligent System
CS-642	Artificial Neural Network
CS-643	Machine Learning
CS-644	Expert System and Knowledge Management
CS-645	Intelligent Agents
CS-650	Reinforcement Learning
CS-651	Affective Computing
CS-660	Human Computer Interaction
CS-662	Distributed Artificial Intelligence

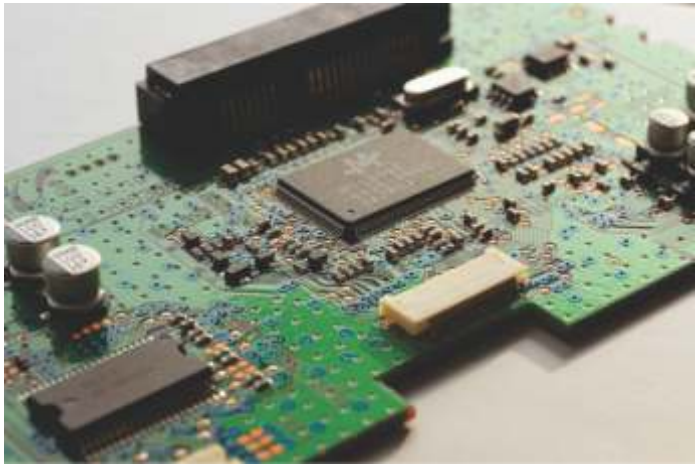
Speech and Language Processing

Course Code	Course Title
CS-721	Seminar in Statistical Language Processing
CS-722	Seminar in Urdu Computational Grammar

Bio-informatics

Course Code	Course Title
CS-655	Bio-informatics Concepts
CS-656	Introduction to Brain Informatics
CS-751	Advance Topics in Bioinformatics





Introduction

The Department of Computer Engineering was established as an independent department in 2020. It was originally part of the Department of Computer Science and Engineering. The department offers Ph.D., M.Sc. and B.Sc. degree programs in Computer Engineering. The B.Sc. Computer Engineering program is accredited by Pakistan Engineering Council (PEC) under OBE.

Mission

To disseminate computing education to the students of the department emphasizing entrepreneurship and ethical standards while encouraging them to remain abreast with latest developments in computing tools and processes and use their skills to identify and find solution to society's problems; and to use department's resources and computing expertise to help industry, government and community in solving their problems.

Facilities

Department's computing facilities are linked with Research Center, Main Library and other teaching departments through a fiber optic backbone. Multimedia projectors are fitted where required and Internet facility is available in all Laboratories. In addition, the department has two Electronics Systems Laboratories, an Artificial Intelligence and Industrial Automation Laboratory and an Embedded Systems Laboratory.

Research

Current topics of research of CE faculty members include, but are not limited to, the following areas:

Estimation Theory, Signal Processing, Modern Control and related areas,. Data bases, Semantic Web and related areas, Communications, Wireless Telecommunication and related areas, Software Engineering, Modeling and related areas, Data mining, Data warehousing, Artificial Intelligence and related areas, Artificial Intelligence, Multi-agents expert systems and related areas, Information Retrieval, Web Engineering, data bases and related areas, Computer Networks and related areas, Bio-informatics. Speech and Language Processing.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Muhammad Kamran Professor and Dean	Algorithmic digital system design & networking, Power quality and transients, High voltage engineering and protection.
Dr. Ali Hammad Akbar Professor and Chairman	Speech Processing, Signal Processing, Control Systems, System Identification
Dr. Muhammad Shahbaz Professor	Data Science/ Data Mining, Data warehousing, Artificial Intelligence, Health Informatics and related areas
Dr. Yasir Saleem Associate Professor	Systems (I0T), Power Electronics and Systems
Dr. Faisal Hayat Associate Professor	Image Processing
Dr. Asim Rehmat Assistant Professor	Artificial Intelligence
Dr. Fareed Ud Din Mehmood Jafari Assistant Professor	Computer
Dr. Beenish Ayesha Assistant Professor	Computer Networks

M.Sc. in Computer Engineering

Core courses (4 out of 5)

Course Code	Course Title
CMPE-511	Advanced Algorithms (mandatory)
CMPE-521	Advanced Computer Architecture (mandatory)
CMPE-531	Advanced Computer Networks
CMPE-541	Advanced Machine Learning
CMPE-551	Random Variables and Stochastic Processes

Control Systems and Hardware Design

Course Code	Course Title
CMPE-621	Linear Systems
CMPE-622	Advanced Control Systems
CMPE-623	Advanced Embedded Systems
CMPE-624	Advanced Digital Design
CMPE-631	Advanced Operating Systems

Networks and Communication Systems

Course Code	Course Title
CMPE-632	Wireless and Mobile Communication
CMPE-633	Network Security and Cryptography
CMPE-634	Network Performance and Evaluation
CMPE-635	Telecommunication Networks and Protocols
CMPE-636	Design and Modeling of Wireless Sensor Networks
CMPE-637	Advanced Topics in Wireless Sensor Networks
CMPE-638	Digital Forensics

Artificial Intelligence

Course Code	Course Title
CMPE-641	Artificial Neural Networks
CMPE-642	Deep Learning
CMPE-643	Reinforcement Learning
CMPE-644	Autonomous Robots
CMPE-645	Natural Language Processing
CMPE-646	Special Topics in Artificial Intelligence
CMPE-647	Special Topics in Machine Learning

Big Data and Cloud Computing

Course Code	Course Title
CMPE-661	Knowledge Discovery in Databases
CMPE-662	Advanced DBMS
CMPE-663	Advanced Cloud Computing and Big Data Analytics
CMPE-664	Advanced Data Mining
CMPE-665	Bioinformatics Concepts
CMPE-666	Theory of Computation

Digital Signal Processing

Course Code	Course Title
CMPE-671	Advanced Digital Signal Processing
CMPE-672	Speech Processing
CMPE-673	Computer Vision
CMPE-674	Digital Image Processing

M.Sc. Thesis

Course Code	Course Title
CMPE-691	Thesis

The Department of Mechanical Engineering has the distinction of being one of the oldest disciplines since 1923, when this institution came into being as "Maclagan Engineering College". In the year 1961, when this institution was upgraded to an independent Engineering University, Master and Doctorate degree programs in Mechanical Engineering were introduced. At present, in addition to its well-established undergraduate program, the Department of Mechanical Engineering is offering the following postgraduate programs:

1. M.Sc. Thermal Power Engineering
2. M.Sc. Mechanical Design Engineering
3. M.Sc. Automotive Engineering
4. M.Sc. Renewable Energy Systems Engineering
5. Ph.D. Mechanical Engineering

Research Activities

The Department of Mechanical Engineering is engaged in a number of research projects of theoretical, experimental as well as computational nature. The main areas of research include Power Generation, Heat Exchangers, Turbomachines and Heat Engines, Alternative fuels for Automobiles, Exhaust Emissions Pollution Control, Energy Conservation and Renewable Energy Resources. The research areas also deal with Computational Fluid Dynamics, Modeling of Engine Flows, Fuel Sprays Formation, Fuel Spray-wall Interaction and Flows Across Aerodynamic Configurations. A number of computer software are available to facilitate the postgraduate students to carry out quality research projects in the related field of study. Recently, the following two centers have been established to further promote the research activities.

Automotive Engineering Center

This center has been established to contribute to the automotive engineering field through research and innovation. A wide variety of research and development facilities such as engine performance testing, emission testing, automotive noise level measurements are available at the center to support educational and industrial requirements.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Nadeem Ahmad Mufti Professor and Dean	Conventional and Non-Conventional Manufacturing Processes, Project Management, Operations Management, Total Quality Management and Human Factors Engineering.
Dr. Nasir Hayat Professor and Chairman	Manufacturing Systems, Engineering Economic Analysis, Operation Research (Scheduling), Application of Artificial Intelligence in Manufacturing.
Dr. Tauseef Aized Khan Professor	Energy Technology, Management and Policy, Manufacturing Processes and Systems.
Dr. Asad Naeem Shah Professor	Combustion in IC Engines, Exhaust Emissions.
Dr. Muhammad Asif Mahmood Qureshi Professor	Design, Analysis, and Manufacturing of Composite Materials.
Dr Amjad Hussain Professor	
Dr. Ghulam Moeen Ud Din Professor	Tribology, Thin Films, Nanotechnology, Process Modeling.
Dr. M. Mahmood Aslam Bhutta Associate Professor	Thermal Power Engineering and I.C Engines, Application of CFD and FEA.
Dr. Muhammad Asim Associate Professor	Renewable Energy Resources, Solar Energy Applications.
Dr. Awais Ahmad Khan Associate Professor	Design and Manufacturing Engineering
Dr. Ali Hussain Kazim Associate Professor	Heat Transfer, Energy Conservation, Nanoengineering.
Dr. Muhammad Usman Associate Professor	Energy sources, recovery utilization and environmental effects.
Dr. Zia ul Rehman Tahir Assistant Professor	Bio mechanics in Sports, Biodynamics Biomanu facturing, Elastic Stability of Resource Assessment, Solar Reditation Measurement System
Dr. Naseer Ahmad Assistant Professor	Instrumentation and Control
Dr. Jawad Sarwar Assistant Professor	Biomechanics in Sports, Biodynamics, Biomanufacturing, Elastic Stability of Structures, Vibration Analysis, Finite Element Modelling. Wind and Solar Resource Assessment, Solar Radiation Measurement Systems. Renewable Energy, Thermodynamics, Fluid Mechanics, Applications of Computational Fluid Dynamics, Application of FEA.
Dr. Muhammad Wajid Saleem Assistant Professor	Water Desalination, Renewable Energy, Carbon Capture Techniques.
Dr. Jafar Hussain Assistant Professor	Automobile Breaking system, I.C Engines, Applied Thermodynamics.

M.Sc. Thermal Power Engineering

Course Code	Course Title
Group-A	**Compulsory Subjects**
TPE-501	Thermal Power Systems
TPE-502	Advanced Heat and Mass Transfer
TPE-503	Advanced HVAC Systems
ME-601	Research Methods and Engineering Analysis
Group-B	**Elective subjects**
TPE-504	Advanced Thermodynamics
TPE-505	Gas Turbine Engineering
TPE-506	Advanced Aerodynamics
TPE-507	Air Pollution Engineering
TPE-508	Convection Heat Transfer
TPE-509	Advanced IC Engines
TPE-510	Thermal Energy Storage Systems
TPE-511	Carbon Capture, Storage and Utilization
TPE-512	Advanced Fluid Dynamics
TPE-513	Clean Coal Technologies
TPE-514	Sustainable Energy Systems
TPE-515	Energy Efficiency and Conservation
TPE-516	Fuel and Combustion
TPE-517	Energy Management
TPE-518	Turbo Machinery
TPE-519	High Pressure Boilers
TPE-601	Radiation Heat Transfer
TPE-602	Advanced Experimental Methods in Thermal and Fluid Engineering
TPE-603	Computational Fluid Dynamics
TPE-604	Compressible Fluid Flow
TPE-605	Energy System Modelling
TPE-606	Micro and Nano Fluids
ME-501	Mathematical Methods
ME-502	Environmental Management and Safety
ME-503	Advanced Mechanical Vibration
ME-504	Condition Monitoring
ME-505	Experimental Methods
ME-602	Modeling and Simulation
ME-603	Advanced Finite Element Methods
ME-604	Machine Noise and Vibration Analysis
ME-605	Failure Analysis of Engineering Materials
ME-606	Computer Aided Die and Fixture Design
ME-607	Welding and NDT
ME-608	Reliability and Quality Engineering
Group-C	**Research Thesis**
ME-699	Research Thesis in the relevant area and Oral Examination

M.Sc. Mechanical Design Engineering

Course Code	Course Title
Group-A	**Compulsory Subjects**
MDE-501	Advanced Stress Analysis
MDE-502	Theory of Plasticity
MDE-503	Theory of Elasticity
ME-601	Research Methods and Engineering Analysis
Group-B	**Elective subjects**
MDE-504	Finite Element Analysis
MDE-505	Biomechanics
MDE-506	Nano-Mechanics
MDE-507	Reliability Engineering
MDE-508	Advanced Engineering Dynamics
MDE-509	Pressure Vessel Design
MDE-510	Theory of Plates and Shells
MDE-511	Advanced Control Engineering
MDE-512	Advanced Computer Aided Design
MDE-513	Mechanics of Composite Materials
MDE-601	Non-linear Analysis of Structures
MDE-602	Advanced Shell Structures
MDE-603	Advanced Fatigue and Fracture Mechanics
MDE-604	Analytical Methods in Vibrations
MDE-605	Structural Health Monitoring
MDE-606	Design Optimization and Analysis Techniques
MDE-607	Continuum Mechanics
ME-501	Mathematical Methods
ME-502	Environmental Management and Safety
ME-503	Advanced Mechanical Vibration
ME-504	Condition Monitoring
ME-505	Experimental Methods
ME-602	Modeling and Simulation
ME-603	Advanced Finite Element Methods
ME-604	Machine Noise and Vibration Analysis
ME-605	Failure Analysis of Engineering Materials
ME-606	Computer Aided Die and Fixture Design
ME-607	Welding and NDT

ME-608	Reliability and Quality Engineering
Group-C	**Research Project**
ME-699	Research Thesis in the relevant area and Oral Examination

M.Sc. Automotive Engineering

Course Code	Course Title
Group-A	**Compulsory Subjects**
AME-501	Automotive IC Engines
AME-502	Automotive Control Systems
AME-503	Vehicle Dynamics
ME-601	Research Methods and Engineering Analysis
Group-B	**Elective subjects**
AME-505	Exhaust Emissions and Control
AME-505	Automotive Vibration, Noise and Harshness
AME-506	Automotive Manufacturing Processes
AME-507	Tribology in Automotive Engineering
AME-508	TQM in Automotive Engineering
AME-509	Operation Management in Automotive Manufacturing
AME-510	Thermal Management in Automotive Applications
AME-511	Automotive Sensor Systems
AME-512	Advanced CAD & CAM
AME-513	Automotive Air-conditioning Systems
AME-514	Computer Integrated Manufacturing (CIM)
AME-515	Advanced Thermodynamics
AME-516	Computational Fluid Dynamics
AME-517	Electric Vehicles
AME-518	Materials for Automotive Applications
AME-601	Fracture Mechanics
AME-602	Micro and Nano Manufacturing
AME-603	Advanced Aerodynamics
AME-604	Vehicle Propulsion Systems
ME-501	Mathematical Methods
ME-502	Environmental Management and Safety
ME-503	Advanced Mechanical Vibration
ME-504	Condition Monitoring
ME-505	Experimental Methods
ME-602	Modeling and Simulation
ME-603	Advanced Finite Element Methods
ME-604	Machine Noise and Vibration Analysis
ME-605	Failure Analysis of Engineering Materials
ME-606	Computer Aided Die and Fixture Design
ME-607	Welding and NDT
ME-608	Reliability and Quality Engineering
Group-C	**Research Project**
ME-699	Research Thesis in the relevant area and Oral Examination

M.Sc. Renewable Energy Systems Engineering

Course Code	Course Title
GROUP-A	**Compulsory Subjects**
RES-501	Photovoltaic Systems
RES -502	Solar Thermal Systems
RES -503	Wind Energy Systems
RES -504	Micro & Mini Hydro Energy Systems
GROUP-B	**Elective Subjects** (Any four for option (a); any six for option (b))
RES-505	Renewable Energy Resource Assessment
RES-506	Bio Energy Engineering
RES-507	Energy Systems Modelling and Simulation
RES-508	Hybrid Energy Systems
RES-509	Conventional Hydro Power Plants
RES-510	Energy Audit and Management
RES-511	Concentrated Solar Power System
RES-512	Renewable Energy Integration and Applications
RES-513	Energy Transmission and Distribution
RES-514	Energy and Environment
RES-515	Sustainable Energy systems
RES-516	Smart Grids Systems
RES-517	Manufacturing and Materials for Renewable Energy Application
RES-518	Energy Efficient Buildings
RES-519	Renewable Energy Policy, Regulations and Standards
RES-520	Waste to Energy Systems & Management
RES-521	Energy Analytics, Economics and Planning
RES-522	Energy Storage Technologies
RES-523	Renewable Energy Projects Management
RES-524	Computational Fluid Dynamics
RES-525	Wave and Tidal Energy Systems
RES-526	OTEC and Geothermal Energy Systems
RES-527	Special/Advanced Topics in Renewable Energy
Group-C	**Research Project/Design Problem**
RES-698	Research Thesis in the relevant area and Oral Exam (Compulsory for option (A))
RES-699	Design Problem (Compulsory for option (B))

The postgraduate program of department of Industrial & Manufacturing Engineering is well established, offering M.Sc. and Ph.D. degrees in two specializations i.e. Engineering Management & Manufacturing Engineering. The program has earned its credibility over the years due to its updated curriculum that is designed taking into consideration the industrial requirements and the technological advancements.
The postgraduate degrees offered by the department include:

1) M.Sc. in Manufacturing Engineering
2) M.Sc. in Engineering Management
3) Ph.D. in Manufacturing Engineering
4) Ph.D. in Engineering Management

Manufacturing Engineering
Mission
The M.Sc. Manufacturing Engineering Program of the Department of Industrial & Manufacturing Engineering, UET Lahore aims to produce cross-functional engineers, equipped with: a solid technical background, comprehension of new process technologies, a firm grasp of business matters and aspects of manufacturing policy, strong understanding of productivity improvement techniques and readiness to lead diverse teams while satisfying customers' expectation for high quality products.

Engineering Management
Mission
The aim of M.Sc. Engineering Management Program of the Department of Industrial & Manufacturing Engineering, UET Lahore is to prepare practical engineers who respond successfully to the ever changing demands of the global marketplace, integrate analytical skills with managerial decision making in the concept, design and development of profitable products and efficient processes, while striving to conserve energy and protect the environment.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Nadeem Ahmad Mufti Professor and Dean	Manufacturing Engineering Engineering Management
Dr. Muhammad Qaiser Saleem Professor and Chairman	Manufacturing Engineering Engineering Management
Dr. Kashif Ishfaq Associate Professor	Manufacturing Engineering Engineering Management
Dr. Rakhshanda Naveed Assistant Professor	Manufacturing Engineering
Dr. Sadaf Zahoor Assistant Professor	Manufacturing Engineering Engineering Management
Dr. Sarmad Ali Khan Assistant Professor	Manufacturing Engineering
Dr. Syed Farhan Raza Rizvi Assistant Professor	Manufacturing Engineering
Dr. Muhammad Faisal Shahzad Assistant Professor	Manufacturing Engineering Engineering Management
Dr. Muhammad Salman Habib Assistant Professor	Engineering Management

M.Sc. Manufacturing Engineering

Course Code	Course Title	*Core*
MF-501	Concurrent Product and Process Design (Core)	
MF-502	Production Planning and Control (Core)	
MF-503	Advanced Topics in Manufacturing (Core)	
MF-504	Lean Manufacturing (Core)	
		Electives
MF-505	Manufacturing Strategy	
MF-506	CAD/CAM	
MF-507	CIM and Industry 4.0	
MF-508	Tool Design	
MF-509	Manufacturing Systems Analysis	
MF-510	Research Methodology in Manufacturing	
EM-504	Total Quality Management	
EM-506	Economic Decisions in Engineering	
EM-507	Environmental Management and Safety	
EM-502	Operations Management	
EM-515	Sustainability in Operations	
MF-601	Trends in Manufacturing Processes	
MF-599	Thesis	

M.Sc. Engineering Management

Course Code	Course Title	*Core*
EM-501	Human Resource Management (Core)	
EM-502	Operations Management (Core)	
EM-503	Project Management (Core)	
EM-504	Total Quality Management (Core)	
		Electives
EM-505	Principles of Engineering Management	
EM-506	Economic Decisions in Engineering	
EM-507	Environmental Management and Safety	
EM-508	Management Information Systems	
EM-509	Legal and Ethical Aspects in Engineering Management	
EM-510	Business Communications	
EM-511	Industrial Marketing Management	
EM-512	Operations Research	
EM-513	Logistics and Supply Chain Management	
EM-514	Research Methodology in Engineering Management	
EM-515	Sustainability in Operations	
MF-552	Production Planning and Control	
EM-601	Project Constraint and Risk Management	
EM-599	Thesis	

The continued requirement of technology coupled with needs of the need industry have called for merging of electronics engineering with mechanical engineering into a new discipline called "Mechatronics". Mechatronics is the synergistic combination of precision mechanical engineering ,electronics, control engineering and computer science. It deals with the integration of mechanical devices, actuators, sensors, electronics, intelligent controllers and computers. Mechatronics is essential in the design of intelligent products; it allows engineers to transform their concepts into reality. During the forthcoming decades, the use of intelligent products with improved flexibility, performance, reliability and maintainability will be crucial for the economic vitality of any country. The curriculum and the courses, generally, aim at hands-on experience in mechatronics engineering, with special emphasis on the engineering design of mechatronic products. Specifically, the graduate program at the department also emphasizes the cutting edge research in the field.

Postgraduate degrees offered by the department:

1. M.Sc. in Mechatronics Engineering
2. Ph.D. in Mechatronics Engineering

Course Requirements

To graduate, a student needs to accumulate a total of 30 credit hours and obtain a minimum of 2.5 CGPA taking either "30 credit hours of course work including compulsory and elective courses alongside a semester design project" or "24 credit hours of course work including compulsory and elective courses along with a 6 credit hours of Research Thesis". The students who opt for research thesis may apply for allocation of thesis topic after successful completion of four courses.

Research

Human-Centered Robotics Lab of our department is part of newly established National Center of Robotics and Automation. The lab aims to indigenously design and develop integrated robotic systems, based on smart sensing and actuation, to seamlessly interact with humans, actively learn from them and eventually create an effective collaborative environment. A dedicated team of Mechatronics Engineers is currently working on the indigenous development of collaborative robots, industrial exo-skeletons and active prostheses.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Nadeem Ahmad Mufti Professor and Dean	Manufacturing Industrial Management and Mechanical Engineering.
Dr. Ali Raza Associate Professor and Incharge	Bio-inspired Computational Intelligence, Robot Heterogeneity, Artificial Immune Systems, Sports Bio-Mechanics
Dr. Mohsin Rizwan Associate Professor	Optimal Control Systems, Micro Scale Manipulation and Assembly, NonLinear Structural Analysis
Dr. Ummul Baneen Assistant Professor	Structural Health Monitoring, Condition Monitoring, Vibrations, Modal Analysis, Finite Element Analysis.
Dr. M. Ahsan Assistant Professor	Machine Learning, Artificial Intelligence, Quantum Computing, Quantum Control, Computer Architecture
Dr. Syed Abbas Zilqarnain Naqvi Assistant Professor	Statistical machine Learning.
Dr. Sajid Iqbal Assistant Professor	Nonlinear dynamics, chaos, electronic circuits, education
Dr. Maria Akram Assistant Professor	Artificial Immune System, Robotics

DEGREE OPTIONS

Following options are available:

a) Thesis Option: 8 Subjects (24 credit hours) + Research Thesis (6 credit hours)

b) Non-thesis option: 10 Subjects (30 credit hours) + Design Problem

SUBJECTS OFFERED IN M.Sc./Ph.D.

Note: All courses are 3(3+0) credit hours each unless otherwise specified.

M.Sc. Mechatronics Engineering

Course Code	Course Title	*Core*
MCT-551	Robotics and Automation (Core)	
MCT-561	Modeling of Physical Systems (Core)	
MCT-562	Mechatronic Systems (Core)	
MCT-566	Engineering Analysis (Core)	
		Electives
MCT-602	Advanced Numerical Methods	
MCT-603	Product Design & Development	
MCT-604	Research Methodology	
MCT-611	Advanced Dynamics	
MCT-612	Precision Machine Design	
MCT-613	Condition Monitoring	
MCT-614	Structural Health Monitoring	
MCT-615	Nonlinear Dynamical Systems	
MCT-621	Signal Conditioning and Processing	
MCT-631	Modern Control Systems	
MCT-633	Digital Control Systems	
MCT-634	Adaptive Control Systems	
MCT-635	Estimation and Filtering	
MCT-636	Nonlinear Control Systems	
MCT-637	Dynamics and Control of Automotive Systems	
MCT-638	Robust Control Systems	
MCT-639	Optimal Control Systems	
MCT-641	Machine Intelligence	
MCT-643	Digital Image Processing	
MCT-652	Mobile Robotics	
MCT-656	Principles of Artificial Intelligence	
MCT-653	Artificial Intelligence For Robotics	
MCT-654	Intelligent Systems	
MCT-661	Intelligent Manufacturing Systems	
MCT-663	Advanced Embedded Systems	
MCT-664	Sensors and Actuators	
MCT-665	Biomedical Instrumentation and Systems	
MCT-666	Hydraulics and Pneumatics	
MCT-667	Micro-Electro-Mechanical Systems	
MCT-668	Mechatronics Project Management	
MCT-691	Advance Topics in Mechatronics	
	Research Thesis	
MCT-699	Research Thesis	

The Department of Civil Engineering is one of the oldest departments in the country imparting civil engineering courses at undergraduate and postgraduate levels. The department was established in 1939 as a part of the Maclagan Engineering College, Lahore. Currently, it has an enrollment of over 1000 students in bachelor, Master and Ph.D. The department has strong alumni backup numbering more than 8000 alumni, leading the national and regional development. The number of Ph.D. faculty members serving in the department are maximum comparable to any other Civil Engineering program offered in the country.

The department has the following divisions to conduct its teaching and research programs:

1. Structural Engineering
2. Geotechnical Engineering
3. Hydraulics and Irrigation Engineering

M.Sc. Degree Program Offered

The department offers the following courses of studies at postgraduate level:

1. **M.Sc. Structural Engineering**
2. **M.Sc. Geotechnical Engineering**
3. **M.Sc. Hydraulics and Irrigation Engineering**
4. **Ph.D. Civil Engineering**

The master's degree courses consist of lectures, design work, laboratory investigations, presentations, seminars and research. The emphasis is on introducing students to modern trends and techniques besides imparting advanced knowledge in their fields of specialization.

Laboratories and other Facilities

The department has the following well-equipped laboratories with the latest testing machinery, which meet the academic needs of students and teachers as well as the professional needs of the government and private organizations, which includes:

- Bridge Engineering
- Computer

- Concrete
- Earthquake Engineering
- Transportation Engineering
- Hydraulics & Irrigation Engineering
- Geotechnical Engineering
- Strength of Materials
- Engineering Mechanics
- Surveying
- Test Floor

The department has adequate research facilities for the postgraduate students and the faculty. Priority of the department has been towards solution of different problems faced by the public/private sectors in the field of civil engineering. Civil Engineering Department also has a possession of shaking table for simulation of dynamic response of physical models and prototypes in its earthquake laboratory.

The faculty members are engaged in a variety of research programs such as Low Cost Housing, Investigation of Mechanical Properties of Concrete, Alkali-Silica Reaction, Geopolymer Concrete and Brick Development, Use of Indigenous Materials, Composite Space Structures, Towers, Stability of Slopes, Soil improvement techniques, determination of B.C., Pneumatic Techniques, Seepage, Water Logging and Salinity Control, Sedimentation in Channels and Reservoirs, River Flood Hydraulics, Application of Geographical Information Systems (GIS) in various fields of Civil Engineering, Hydrological Modeling, Soil Erosion and Sediment Transport Modeling, Flood Modeling for Coastal Areas due to Climate Change, Offshore Hydraulics, Bond Strength of Ultra-high Strength Concrete, Development and use of FRP materials, High Performance Concrete, Earthquake Risk Assessment & Retrofitting Techniques, Reliability based Design and Development of Computer Software for the Complex Civil Engineering Problems.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Habib-ur Rehman Professor and Dean	Hydrology, Regional Scale Soil Erosion and Sediment Transport Modelling, Remote Sensing and GIS, Reservoir Sedimentation.
Dr. Khalid Farooq Professor and Chairman	Soil Improvement Techniques, Slope Stability and Expansive Soils.
Dr. Muhammad Ashiq Professor	Sediment Transport, Hydraulics and Flood Management.
Dr. Noor Muhammad Khan Professor	Simulation and Optimization of Water Resources Projects, Reservoir Sedimentation, River flood modeling, GIS & RS Applications in Civil Engg.
Dr. Asad Ullah Qazi Professor	Structural Dynamics and Earthquake Engineering. Performance evaluation of infilled masonry walls.
Dr. Asif Hameed Professor	Innovation and new trends in bridge structures, Active and passive control of structures, Structural dynamics and earthquake response of the structures, Construction management and planning.
Dr. M. Burhan Sharif Professor	Concrete Materials and development of software Analysis and Design of Structures, Seismic design of structures
Dr. Rashid Hameed Professor	Structural Properties and Numerical Analysis of Fiber Reinforced Concrete structures.
Dr. Riaz Ahmad Associate Professor	Design, Construction & Maintenance of Structures Precast Tunnel Lining Design & Application.
Dr. Safeer Abbas Associate Professor	Durability of RCC, Fiber Reinforced Concrete, Structural Optimization.
Dr. Hassan Mujtaba Associate Professor	Developing correlations between various geotechnical parameters for non-cohesive and cohesive soils Problematic soils and their mitigation techniques
Dr. Muhammad Irfan-ul-Hassan Associate Professor	Elasticity, Strength & Creep investigation of Cement and Concrete: Experimental & Multiscale Modelling Approach, Analysis and Design of Structures, Seismic design of structures, Sustainable Construction Materials.
Dr. Nauman Khurram Associate Professor	Non-Linear FE analysis of RCD & steel structure, structural Health Monitoring strengthening & Retrofitting of structures
Dr. Waseem Abbas Associate Professor	Fiber reinforced concrete, supplementary cementitious composites, Durability of concrete, High performance concrete.
Dr. Ali Ahmed Associate Professor	Study of dynamic behavior of structures. Rehabilitation of damaged structural elements. Properties and durability of concrete. Structural Mechanics.
Dr. Qasim Shaukat Khan Associate Professor	Fiber reinforced tube confined concrete, Geopolymer concrete.
Dr. Jehanzeb Israr Associate Professor	Soil Mechanics and Foundation Engineering stability of granular filters under cyclic loading
Dr. Imtiaz Rashid Associate Professor	Geotechnical Exploration
Dr. Muhammad Yousaf Assistant Professor	Self-Compacting Concretes

Dr. Usman Akmal Assistant Professor	Durability of Concrete, Analysis and Design of Tall building and Dynamics Analysis of structures.
Dr. Mazhar Saleem Assistant Professor	Dynamic Testing
Dr. Rizwan Azam Assistant Professor	Assessment and rehabilitation of structures. Sustainable building materials.
Dr. Umbreen us Sahar Assistant Professor	The numerical modelling and simulation of mechanical behavior of strain hardening cementitious composites and high strength concrete under short-term and time-dependent loading. Durability of thin bonded cement-based overlays
Dr. Syed Asad Ali Gillani Assistant Professor	Earthquake Engineering, Disaster Management, Structural Dynamics, Finite Element Modeling,
Dr. M. Rizwan Riaz Assistant Professor	Eco-friendly structural materials
Dr. Aqsa Shabbir Assistant Professor	Project Management

in M.Sc./Ph.D. SUBJECTS OFFERED

- All subjects are 3(2+1) credit hours unless specified.
- Degree requirement is completion of 30 credit hours including 24 credit hours of course work and 6 credit hours of research thesis.

M.Sc. Structural Engineering

Course Code	Course Title	*Core*
SE-501	Structural Analysis (Core)	
SE-502	Reinforced Concrete Structures (Core)	
SE-503	Properties of Structural Materials (Core)	
SE-504	Pre-stressed Concrete (Core)	
SE-505	Steel Structures (Core)	
SE-506	Seismic Design of Structures (Core)	
		Electives
SE-507	Bridge Engineering	
SE-508	Design of Structures	
SE-509	Theory of Plates and Shells	
SE-510	Structural Mechanics	
SE-511	Stability of Structures	
SE-512	Structural Dynamics	
SE-513	Seismology and Earthquake Engineering	
SE-514	Seismic Design of Masonry Structures	
SE-515	Structural Optimization	
SE-516	Fracture Mechanics of Concrete	
SE-517	Advanced Concrete Technology-I	
SE-518	Advanced Concrete Technology-II	
GE-501	Advanced Soil Mechanics	
GE-502	Foundation Engineering-I	
GE-503	Foundation Engineering-II	
GE-505	Geotechnical Investigation	
GE-509	Environmental Geo-Techniques	
GE-511	Numerical Methods in Engineering	
HI-501	Hydraulic Structures	
HI-503	Hydro Power Engineering	
HI-504	Irrigation Engineering & Practices	
HI-511	Application of RS & GIS in Civil Engg.	
TE-503	Pavement Analysis and Design	
TE-505	Airport Planning and Design	
TE-506	Railway Engineering	
TE-510	Highway Construction Materials & Equipment	

M.Sc. Hydraulics & Irrigation Engineering

Course Code	Course Title	*Core*
HI-501	Hydraulic Structures	
HI-502	Advanced Fluvial Hydraulics	
HI-503	Hydro Power Engineering	
HI-504	Irrigation Engineering & Practices	
HI-505	Applied Hydrology	
HI-506	Sediment Transport	
		Electives
HI-507	Fluid Mechanics	
HI-508	Drainage Engineering	
HI-509	Computer Aided Design of Hydraulic Structures	
HI-510	River Engineering & Flood Management	
HI-511	Application of RS & GIS in Civil Engineering	
HI-512	Soil Erosion & Watershed Management	
HI-513	Hydrological Modeling	
HI-514	Water Resources Planning & Management	
HI-515	Ground Water Engineering	
SE-502	Reinforced Concrete Structures	
SE-503	Properties of Structural Materials	
SE-507	Bridge Engineering	
GE-501	Advanced Soil Mechanics	
GE-504	Dam Engineering	
GE-505	Geotechnical Investigation	
GE-506	Soil Improvement Techniques	
GE-507	Earth Retaining Structures	
GE-509	Environmental Geo-Techniques	
TE-503	Pavement Analysis and Design	
TE-505	Airport Planning and Design	
TE-506	Railway Engineering	
TE-510	Highway Construction Materials & Equipment	

M.Sc. Geotechnical Engineering

Course Code	Course Title	*Core*
GE-501	Advanced Soil Mechanics	
GE-502	Foundation Engineering-I	
GE-503	Foundation Engineering-II	
GE-504	Dam Engineering	
GE-505	Geotechnical Investigation	
GE-506	Soil Improvement Techniques	
		Electives
GE-507	Earth Retaining Structures	
GE-508	Rock Engineering	
GE-509	Environmental Geo-techniques	
GE-510	Soil Dynamics	
GE-511	Numerical Methods in Engineering	
GE-512	Geo-Technical Engg. in Professional Practice	
MinE-512	Rock Slope Engineering	
TE-501	Transportation Planning and Engg.	
TE-502	Geometric Design and Highway Safety	
TE-503	Pavement Analysis and Design	
TE-504	Traffic Engineering	
TE-505	Airport Planning and Design	
TE-506	Railway Engineering	
TE-507	Payment Evaluation and Rehabilitation	
TE-510	Highway Construction Materials and Equipment's	
TE-511	Harbor and Dock Engineering	
TE-512	Bridge and Tunnel Engineering	
TE-515	Statistical Analysis with Computer Application	
HI-501	Hydraulic Structures	
HI-502	Advanced Fluvial Hydraulics	
HI-503	Hydro Power Engineering	
HI-504	Irrigation Engineering & Practices	
HI-505	Applied Hydrology	
HI-506	Sediment Transport	
HI-507	Fluid Mechanics	
HI-511	Application of RS & GIS in Civil Engg	
HI-512	Soil Erosion & Watershed Management	
HI-515	Ground Water Engineering	
SE-501	Structural Analysis	
SE-502	Reinforced Concrete Structures	
SE-503	Properties of Structural Materials	
SE-504	Pre-stressed Concrete	
SE-505	Steel Structures	
SE-506	Seismic Design of Structures	

The Department of Transportation Engineering and Management was established in February 2006 under the Faculty of Civil Engineering. The department offers undergraduate and postgraduate degrees in Transportation Engineering. The establishment of this department was demand based to improve existing transportation infrastructure, which in the present situation is in relatively mismanaged and becoming overly congested. In order to coup with this challenge, the department offers quality engineering education to students in the field of transportation engineering, comparable with accredited international standards as well as catering the industrial, technological and research needs of the country.

The Department offers two postgraduate programs on full time basis, M.Sc. Transportation Engineering and M.Sc. Transportation Informatics. The classes for these programs are conducted in the evening to facilitate working professional for their career building.

Laboratories and other Facilities

The department has various dedicated laboratories that include Geo-materials, Transportation Materials Improvement, Transportation Computer Aided Design, Asphalt and Concrete Mix Design, Traffic Engineering and is in a process of establishing Railway Engineering, and Geomatics Engineering Labs. In addition, the other relevant laboratories required for teaching are shared with the Civil, Electrical, Mechanical, Environmental and Geological Engineering Departments. The department is using latest state-of-the-art software and tools for teaching and training purposes. The Department has a well-stocked library with a large number of latest relevant books, journals and research publications.

Training Courses and Seminars

The Department organizes training courses/workshops and national/international seminars on regular basis. These activities are demand driven and are carried out for the students, faculty, private and

governmental organizations.

RESEARCH, CONSULTANCY AND COLLABORATION

Due to expertise of transportation engineering faculty, various public and private sector organizations frequently approach the Department for consultancy services.

The faculty members are actively engaged in research and regularly present/publish their papers in national and international conferences/seminars/journals.

Some of the major organizations that the Department works in collaboration with include: National Highway Authority (NHA), National Transport Research Centre (NTRC), Pakistan Railways, Punjab Traffic Police, City Traffic Police Lahore, Punjab Safe City Authorities (PSCA), National Highway and Motorway Police (NH&MP), Lahore Chamber of Commerce and Industries (LCCI), Daewoo Pakistan Motorway Service Limited (DPMSL), Civil Aviation Authority, Traffic Engineering and Transport Planning Agency (TEPA), Punjab Masstransit Authority (PMA), Lahore Parking Company (LePark), Lahore Transport Company (LTC), Metrobus Lahore and Chartered Institute of Logistic Transport Pakistan (CILT), All Pakistan Road User Association (ARUP) etc.

Following options are available:

a. Thesis Option: 8 Subjects (24 credit hours) + Research Thesis (6 credit hours)
b. Non-thesis option: 10 Subjects (30 credit hours) + Design Problem

SUBJECTS OFFERED IN M.Sc./Ph.D.

*Note: All courses are 3 (3+0) credit hours each unless otherwise specified *.*

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Habib-ur-Rehman Professor and Dean	
Dr. Ammad Hassan Khan Chairman and Professor	Asphalt Aggregate Characterization, Asphalt Mix Design, Railway Engineering, Transportation Geotechnics, Transportation Project Management.
Dr. Zia-ur-Rehman Professor	Soil Exploration and In-situ Testing Devices, Highway Materials and Pavement Design, Soil Improvement Techniques, Road Accidents Contributors, Bus Rapid Transit.
Dr. Amna Chaudhry Assistant Professor	Traffic Operations and Safety, Microsimulation Modeling, Urban Transportation Planning, Driver Psychology and Behaviour, Autonomous Vehicles
Dr. Saadia Tabassum Assistant Professor	Geomatics Engineering, Highway Geometric Design, Pavement Engineering
Dr. Abdur Rahim Assistant Professor	Asphalt Binder Characterization and Mix Design, Innovative Materials and Methods
Dr. Abdur Rahim Assistant Professor	Asphalt Binder Characterization and Mix Design, Innovative Materials and Methods
Dr. Izza Anwer Minhas Assistant Professor	Intelligent Transport Systems and Technologies. Information and Communication Technologies. Disasters and Disruptions. Advanced Statistical Analysis Methods and Techniques.

M.Sc. Transportation Engineering

Course Code	Course Title	*Compulsory*
TE-501	Transportation Planning and Engineering	
ATE-502	Geometric Design and Highway Safety	
ATE-503.	Pavement Analysis and Design	
ATE-504	Advanced Traffic Engineering	
ATE-506	Advanced Railway Engineering	
ATE-513A	Asphalt Mix Design and Construction	
		Electives
TE-505	Airport Planning and Design	
ATE-507	Pavement Evaluation and Rehabilitation	
ATE-508	Planning for Traffic Safety and Injury Prevention	
ATE-509	Pavement Management Systems	
ATE-510	Highway Construction Materials and Equipments	
ATE-511	Harbour and Dock Engineering	
ATE-512	Bridge and Tunnel Engineering	
ATE-514	Pavement Distress Identification and Preservation	
ATE-515	Statistical Analysis with Computer Application	
ATE-516	Field Investigation for Transportation Structures	
ATE-517	Soil Dynamics	
AGE-501	Advanced Soil Mechanics (2+1)*	
GE-502	Foundation Engineering-I (2+1)*	
GE-503	Foundation Engineering-II (2+1)*	
GE-504	Dam Engineering (2+1)*	
GE-505	Geotechnical Investigation (2+1)*	
GE-506	Soil Improvement Techniques (2+1)*	
GE-508	Rock Engineering (2+1)*	
SE-502	Reinforced Concrete Structures (2+1)*	
SE-504	Prestressed Concrete (2+1)*	
SE-506	Seismic Design of Structures (2+1)*	
HI-511	Application of RS & GIS in Civil Engineering (2+1)*	

M.Sc. Transportation Informatics

Course Code	Course Title	*Compulsory*
TI-501	Intelligent Transportation System and their Applications	
TI-502	Intelligent Solutions in Transportation	
TI-503	Data Science for Transportation Informatics	
TI-504	Programming Fundamentals and Data Structures	
		Electives
TI-505	Transport Informatics	
TI-506	Transport Planning GIS(Geographic Information System) – Expert Systems in Transportation	
TI-507	Transport Planning	
TI-508	Big Data Management and Analysis in Transportation	
TI-509	Management of Urban Traffic Congestion	
TI-510	Economic Analysis of Transportation Alternatives	
TI-511	Forecasting Urban Travel Demand	
TI-512	Control Theory for Transportation Engineering	
TI-636	Cloud Computing	
TI-640	Knowledge Discovery in Databases	
TI-641	Design of Intelligent System	
TI-643	Machine Learning	
TI-644	Experts Systems and Knowledge Management	
TI-513	Design Problems	

The course consists of lectures, design/practical work, laboratory/field investigations, presentations and research thesis. Thesis is a partial fulfillment of the requirement of the degree. The important areas of concentration include:

- Intelligent Transportation Systems
- Data Science for Transportation Informatics
- Transport Planning
- Control Theory for Transportation Engineering

Mission

To produce graduates capable to solve complex engineering problems related to environmental engineering, provide innovative and sustainable solutions for water supply, sewerage, water and wastewater treatment, solid waste management & air pollution problems, and devise appropriate solutions for above utility services.

Introduction

This Institute was established in 1972 as a post-graduate research institute. It is the premier educational institution in the field of Environmental Engineering in Pakistan. Its programs of education, training, research, advisory services and publications made their impact at national level. High quality problem-based research is the top priority of the Institute. Publications from the research work are accepted in high quality international journals and are widely cited throughout the world. It is also one of the oldest and most reliable organization providing commercial testing services in water, wastewater and air. The Institute played major role in framing National Environmental Quality Standards (NEQS) and National Standards for Drinking Water Quality (NSDWQ).

Laboratories and Library

The Institute has following state of art laboratories for the research and investigations:

1. Unit Process
2. Instrumental
3. Environmental Microbiology
4. Water and Wastewater Analysis
5. Environmental Chemistry
6. Advanced Equipment
7. Computer

Water and Wastewater Analysis, Air Pollution Measurement, Solid Waste Analysis, Heavy Metal Analysis, Pesticides, Insecticides, and other organic compounds analysis are performed in these laboratories. These laboratories provide facilities for routine laboratory work associated with undergraduate and postgraduate courses and also used for post-graduate research students. In addition, commercial testing of water and wastewater samples and air quality is also carried out in the labs. The

experience gained by the staff in establishing and maintaining these laboratories has enabled the Institute in helping other organizations to set up similar testing facilities.

The Institute is also equipped with one library containing literature on various aspects of environmental engineering. At present it has about 2,000 titles including proceedings of symposia, workshops, conferences, seminars and journals on air pollution, solid waste management, water and wastewater engineering, noise pollution and other related fields. The library is augmented with regular additions of books and reading material by utilizing its own resources. It is used by the University staff and students. Online digital library having more than 24,000 journals is now added to IEER library.

Research

Research is conducted in the Institute by the faculty and postgraduate students. The Institute has more than 200 M.Sc. thesis and 05 Ph.D. thesis to its credit. Faculty has published more than 153 research papers in national and international journals. This research work is cited in more than 1500 international journals and books. The faculty has also authored 3 books on the subject of (1) Laboratory Techniques in Environmental Field, (2) Solid Waste Management and (2) Water Supply and Sewerage.

Consultancy and Advisory Services

Institute renders advisory and consulting services to international and national organizations. To name few are: World Bank, Asian Development Bank, UNICEF, UNDP, USAID, The Urban Unit Punjab, PHEDs, National Planning Commission, Environmental and Urban Affairs Division, Provincial Public Health Engineering Departments and EPAs, Water and Sanitation Agencies, City Governments and individual establishments. These services are provided in the following fields.

1. Water & wastewater testing
2. Air pollution control
3. Solid waste management
4. Environmental impact assessment
5. Investigations and design of rural and urban water supply
6. Sanitation systems
7. Planning and design of water & wastewater treatment facilities

Academic Programs

The Institute offers postgraduate programs leading to the following degrees

1. M.Sc. Environmental Engineering
2. M.Phil. in Environmental Sciences
3. Ph.D. Environmental Engineering

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Prof. Dr. Habib Ur Rehman Professor and Dean	Physically based distributed Hydrological Modelling, Regional scale soil erosion and sediment transport modelling, Hydraulic Modelling, Reservoir sedimentation, Distributed Flood inundation modelling
Prof. Dr. Sajjad H. Sheikh Professor and Director	Wastewater Treatment, Designing and Optimization of Water Supply and Sewerage System using Computer Software, Water Source Development and Testing, Solid Waste Management
Dr. Amir Ikhlaq Associate Professor	Laboratory Techniques in Environmental Engineering, Environmental Chemistry, Environmental Science
Dr. Muhammad Umar Farooq Associate Professor	Environmental Impact Assessment, Water Quality Analysis, Nanotechnology in Environmental Chemistry
Dr. Muhammad Irfan Jalees Associate Professor	Laboratory Techniques in Environmental Engineering, Ecological Management
Dr. Mehwish Anis Assistant Professor	Advanced Wastewater Treatment, Solid Waste Management
Dr. Ghulam Hussain Assistant Professor	Water and Wastewater Treatment, Water Supply, Sewerage and Drainage, Water Quality Modeling

M.Sc. Environmental Engineering

Course Code	Course Title
	Compulsory
Env-E-501	Environmental Management and Impact Assessment
Env-E-502	Physicochemical Processes in Environmental Systems
Env-E-503	Wastewater Treatment and Design
Env-E-504	Experimental Methods in Environmental Engineering (2+1)
Env-E-505	Industrial and Hazardous Waste Management
Env-E-506	Water Supply and Wastewater Collection Systems
Env-E-509	Air and Noise Pollution Control
Env-E-512	Water Quality Modeling
Env-E-516	Municipal Solid Waste Principles and Management
Env-E-517	Research Methodology
	Elective
Env-E-507	Environmental Chemistry and Microbiology
Env-E-510	Ecology and Risk Assessment
Env-E-511	Environmental Health and Safety
Env-E-513	Marine Pollution and Control
Env-E-514	Modeling of Environmental Systems
Env-E-515	Agricultural Pollution and Control
EnS-552	Climate Change Adaptation and Mitigation
EnS-553	Strategic Environmental Assessment
EnS-562	Remediation Strategies for Contaminated Environment
EnS-564	Environmental Applications of Nanomaterials

M.Phil. Environmental Science

Course Code	Course Title
	Compulsory
EnS-551	Research methods in Environmental Sciences
EnS-552	Climate Change Adaptation and Mitigation
EnS-553	Strategic Environmental Assessment
EnS-554	Environmental Analytical Techniques (2+1)
	Elective
EnS-555	Environmental Chemistry
EnS-556	Water Quality and Treatment
EnS-557	Solid and Hazardous Waste Management
EnS-558	Environmental Risk Assessment and Management
EnS-559	Principles and Applications of Bioremediation
EnS-560	Health, Safety and Environment Management
EnS-561	Energy and Environment
EnS-562	Remediation Strategies for Contaminated Environment
EnS-563	Treatment and Management of Wastewater
EnS-564	Environmental Applications of Nanomaterials

In view of the tremendous challenges being faced by the construction industry in Pakistan, UET established the Department of Architectural Engineering and Design during the year 2001, which has now become a pioneer of Architectural Engineering discipline in Pakistan. The key objective of this department is to give quality education to the students and prepare them for the construction industry of Pakistan as successful professionals with innovative and multi-disciplinary approach. Architectural Engineering is a multidisciplinary program incorporating structural engineering, construction management, analysis and design of energy efficient buildings and design of building services like Mechanical, Electrical and Plumbing (MEP). The courses offered in various post graduate programs cover the core area of Structural Engineering, Construction Management and Integrated Building Design. The courses are based on the industry needs and have been designed with the consultation and feedback from professionals and experts serving in the construction industry.

The department offers the following post graduate programs

1. M.Sc. in Integrated Building Design
2. M.Sc. in Building Engineering
3. M.Sc. in Construction Management
4. Ph.D. in Architectural Engineering

Laboratories

The department has six laboratories for various subjects where undergraduate and post graduate students are working daily on various experiments:

- Structural
- Construction
- Survey
- Geotechnical
- Electrical
- Environmental

Postgraduate Faculty & Their Research Interests

Teacher Name

Dr. Habib Ur Rehman
Professor and Dean
Dr. Sajjad Mubin
Professor and Chairman
Dr. Sabahat Arif
Professor
Dr. Khuram Rashid
Professor

Degree Options:

Following options are available:

a) Thesis Option: 8 Subjects (24 credit hours) + Research Thesis (6 credit hours)

b) Non-thesis Option: 10 Subjects (30 credit hours) + Technical Report

M.Sc. in Integrated Building Design

Course Code	Course Title	*Compulsory*
AED-601	Building systems integration	
AED-602	Responsive design & built environment	
AED-603	Earthquake Resistant Building Structures	
AED-604	Sustainable building design	
		Electives
AED-605	Building Performance Simulation	
AED-606	Virtual Reality and Architectural design	
AED-607	Residential Building Design and Construction	
AED-608	Virtual Reality and Construction Management	
AED-609	Building Safety	
AED-610	Building Structures and Aesthetics	
AED-611	Building Information Modelling for Integrated Design	
AED-663	HVAC Systems	
AED-664	Lighting and Illumination in Buildings	
AED-665	Project Performance Management	
AED-699	Thesis	

M.Sc. in Building Engineering

Course Code	Course Title	*Compulsory*
AE-651	Advanced Concrete Technology	
AE-652	Advanced Reinforced Concrete Structures	
AE-653	Finite Element Methods in Engineering	
AE-654	Earthquake Engineering	
		Electives
AED-603	Earthquake Resistant Building Structures	
AED-609	Building Safety	
AED-610	Building Structures and Aesthetics	
AED-661	Forensic Engineering	
AED-662	Advanced Steel Structures	
AED-663	HVAC Systems	
AED-664	Lighting and Illumination in Buildings	
AED-665	Project Performance Management	
AED-666	Legal and Contractual Risk Management	
AED-667	Information Technology in Construction	
AED-668	Integrated Project Planning and Control	
Courses from Civil Engineering: Prestressed Concrete & Foundation Engineering		
AED-698	Selected topics in AE	
AED-699	Thesis	

M.Sc. in Construction Management

Course Code	Course Title	*Compulsory*
CM-501	Construction project management	
CM-502	Procurement and contract management	
CM-503	Risk Management in Construction	
CM-505	Advanced Construction Materials and Technology	
CM-510	Economic Decision in Construction	
CM-520	Engineering and Construction Laws and Regulations	
		Electives
CM-506	Construction Projects and Human Resource Management	
CM-508	Software application in Construction Project Management	
AED-601	Building Systems Integration	
CM-517	Construction Cost Estimating and Bidding	
CM-518	Construction Equipment and Productivity	
CM-512	Advanced Research Methodology for Construction	
CM-514	Construction Health and Safety	
CM-515	Thesis	
CM-516	Project Monitoring and Evaluation	
CM-519	Quality Management in Construction Projects	
CM-520	Engineering and Construction Laws and Regulations	
HI-514	Water Resources Planning and Management	
TE-510	Highway Construction Materials and Equipment	
TE-502	Geometric Design and Highway Safety	
HI-511	Application of RS and GIS in Civil Engineering	
AED-611	Building Information Modeling for Integrated Design	
AED-651	Advanced Concrete Technology	
AED-652	Advanced Reinforced Concrete Structures	

INTRODUCTION

Center of Excellence in Water Resources Engineering (CEWRE) was established in 1976 in the Annexe Block of the University of Engineering and Technology, Lahore. The Center was primarily established with the objectives of high level goal oriented teaching and research in water resources. These objectives are being realized by imparting M.Sc. and Ph.D. degrees in four disciplines in water resources, conducting specialized training programs, dissemination of knowledge through short courses, seminars, workshops and conducting research on problems of national importance. Water resources development and its management is an intricate and complex problem and engineers to be polished with the updated latest knowledge and engineering techniques. Therefore it is imperative to impart advanced training to create adequate research interest in engineers to enable them find balanced solutions of day-to-day technical problems arising in the water sector in the country.

Laboratory and Research Facilities

The Center has several well-equipped laboratories including Hydraulics, Hydrology, Irrigation and Drainage, Soil & Water Analysis, Remote Sensing & GIS and Computer. There is a well-equipped distance learning conference room. In addition, there is a large Model Tray Hall having facilities for analysis of physical and scale models of river and other water resources engineering structures e.g., dams, spillways, tunnels, etc. Research facilities also include electronics and machine shop. Field equipment is available for geo-physical investigations, flow and sedimentation measurements, infiltration tests, sprinkler and drip irrigations, and soil moisture monitoring and hydro-meteorological observations.

Library

Library of the Center has a very large collection of books and journals relating to water resources and allied fields. Apart from books, the library possesses proceedings of international seminars and conferences, publications of FAO & UN agencies and backfiles of thirty international journals relating to hydrology, hydraulic and water resources. The Center also collects local project reports for reference by the students and researchers.

Academic Programs

The Center offers postgraduate programs leading to M.Sc. and Ph.D. degrees in four disciplines namely Engineering Hydrology, Water Resources Engineering, Water Resources Management and Hydropower Engineering (M.Sc. only). M.Sc. degree comprises of course work and a research thesis.

In-Service Training Programs

To benefit the in-service engineers and scientists, this Center frequently holds refresher courses and training workshops of 1-3 weeks duration. These short courses are usually arranged on some latest topic to impart training of specialized nature. To-date, the Center has conducted more than 50 refresher courses and training workshops benefiting approximately 1500 (50 x 30) professionals. Mostly, the Center takes initiative to conduct a particular training. Sometime, these programs are also arranged on special request of some other department or an organization such as Wapda, PCRWR, PARC, Irrigation Departments and others.

Admission Requirement

The applicants should have B.Sc. degree (First Division or CGPA 2.50 out of 4) in Civil Engineering or Agricultural Engineering for admission in M.Sc. degree in Engineering Hydrology and Water Resources Engineering. For admission in M.Sc Water Resources Management, the applicants should have B.Sc. or equivalent in Civil Engineering, Agricultural Engineering, Agriculture (with major in water management, soil science), Water resources Management, Water Resources Management & Planning and Environmental Engineering and Sciences degree recognized by the Higher Education having sixteen years education with first division or CGPA of at least 2.5 out of 4. For Hydropower Engineering, the applicants having B.Sc. Civil Engineering degree (first division or CGPA 2.50 out of 4) are eligible. For admission in Ph.D. degree, refer to university regulations.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Prof. Dr. Habib ur Rehman Professor and Dean	Hydrology, Regional Scale Soil Erosion and Sediment Transport modeling, Remote Sensing and GIS, Reservoir Sedimentation.
Dr. Noor Muhammad Khan Professor and Director	Hydrology, Water resources system analysis, Optimization.
Dr. Ghulam Nabi Associate Professor	Sediment Transport, GIS and Remote Sensing, Fluid Hydrodynamics, Hydraulic Structures, Open Channel Hydraulics.
Dr. Sajjid Mahmood Assistant Professor	Irrigation System, Water resources management, Project planning and development, Pressurized irrigation, Water quality management.
Dr. Muhammad Masood Assistant Professor	Open Channel flow & Computational Hydraulics Physical & Numerical Modeling Remote Sensing & GIS Database Management.
Dr. Muhammad Kaleem Sarwar Assistant Professor	Hydraulic Structures Hydropower Engineering Physical and Numerical (CFD) Modelling of Hydraulic Structures Dam Engineering.
Dr. Ijaz Ahmad Assistant Professor	Surface water Hydrology, Groundwater Hydrology and Modeling Watershed Modeling, Hydro-Economic Wer Allocation Optimization.
Dr. Muhammad Waseem Assistant Professor	Extreme Events Assessment, Projection and Outlook, Statistical and Distributed Hydrological Modeling and Simulation, Watershed Modeling Climate-Vegetation-Hydrology Interaction Mechanism.
Dr. Mudassar Iqbal Lecturer	Hydrology and water resources, Land surface process and climate change, sediment transport and River engineering

SCHEME OF STUDIES

- The list of subjects given below include Ph.D. level subjects
- All subjects are 3(2+1) credit hours unless specified.
- Degree requirement is completion of 30 credit hours including 24 credit hours of course work and 6 credit hours of research thesis.

M.Sc. Water Resources Engineering

Course Code	Course Title	*Compulsory*
CWR-601	Applied Hydrology	
CWR-611	Advance Open Channel & Computational Hydraulics	
CWR-612	Dam and Reservoir Engineering	
CWR-613	Design of Hydraulic Structures	
CWR-614	Sediment Transport and River Engineering	
CWR-615	Physical and Numerical Modelling	
		Electives
CWR-602	Catchment Modelling	
CWR-603	Statistical Hydrology	
CWR-604	Reservoir Design and Operation	
CWR-605	Flood Estimation and Control	
CWR-606	Groundwater Hydrology and Exploration	
CWR-621	Design of Hydropower Plants	
CWR-622	Planning and Development of Hydropower Projects	
CWR-631	Drainage Engineering	
CWR-632	Irrigation Engineering and Management	
CWR-633	Water Quality Modeling and Management	
CWR-651	Arid Zone Hydrology	
CWR-652	Groundwater Modeling	
CWR-653	Hydrometeorology	
CWR-654	Snow and Ice Hydrology	
CWR-655	Watershed Planning and Development	
CWR-671	Geological and Geotechnical Investigations	
CWR-681	Pressurized Irrigation System	
CWR-682	Land Water Management	
CWR-691	Environmental Impact Assessment	
CWR-692	Project Construction and Management	
CWR-693	Remote Sensing and GIS Applications in Water Resources	
CWR-694	Water Resources Planning and Economics	
CWR-695	Water Resources System Analysis	
CWR-696	Computer Applications in Water Resources	
CWR-697	Participatory Water Management	
CWR-698	Research Methodology	
	Seminar & Thesis	
CWR-699	Seminar on current issues and special topics	
CWR-700	M.Sc. Thesis	
CWR-800	Ph.D. Dissertation	

M.Sc. Water Resources Management

Course Code	Course Title	*Compulsory*
CWR-601	Applied Hydrology	
CWR-606	Groundwater Hydrology and Exploration	
CWR-611	Advance Open Channels & Computational Hydraulics	
CWR-631	Drainage Engineering	
CWR-632	Irrigation Engineering and Management	
CWR-633	Water Quality Modeling and Management	
		Electives
CWR-602	Catchment Modeling	
CWR-603	Statistical Hydrology	
CWR-604	Reservoir Operation and Design	
CWR-605	Flood Estimation and Control	
CWR-612	Dam and Reservoir Engineering	
CWR-613	Design of Hydraulic Structures	
CWR-614	Sediment Transport and River Engineering	
CWR-615	Physical and Numerical Modeling	
CWR-651	Arid Zone Hydrology	
CWR-652	Groundwater Modeling	
CWR-653	Hydrometeorology	
CWR-654	Snow and Ice Hydrology	
CWR-655	Watershed Planning and Management	
CWR-681	Pressurized Irrigation System	
CWR-682	Land and Water Management	
CWR-691	Environmental Impact Assessment	
CWR-692	Project Construction and Management	
CWR-693	Remote Sensing and GIS in Water Resources	
CWR-694	Water Resources Planning and Economics	
CWR-695	Water Resources System Analysis	
CWR-696	Computer Applications in Water Resources	
CWR-697	Participatory Water Management 3(3,0)	
CWR-698	Research Methodology	
	Seminar & Thesis	
CWR-699	Seminar on current issues and special topics	
CWR-700	M.Sc. Thesis (6 Credit Hours)	
CWR-800	Ph.D. Dissertation	

M.Sc. Engineering Hydrology

Course Code	Course Title	*Compulsory*
CWR-601	Applied Hydrology	
CWR-602	Catchment Modeling	
CWR-603	Statistical Hydrology	
CWR-604	Reservoir Design and Operation	
CWR-605	Flood Estimation and Control	
CWR-606	Groundwater Hydrology and Exploration	
		Electives
CWR-611	Advance Open Channel & Computational Hydraulics	
CWR-612	Dam and Reservoir Engineering	
CWR-613	Design of Hydraulic Structures	
CWR-614	Sediment Transport and River Engineering	
CWR-615	Physical and Numerical Modeling	
CWR-631	Drainage Engineering	
CWR-632	Irrigation Engineering and Management	
CWR-633	Water Quality Modeling and Management	
CWR-651	Arid Zone Hydrology	
CWR-652	Groundwater Modeling	
CWR-653	Hydrometeorology	
CWR-654	Snow and Ice Hydrology	
CWR-655	Watershed Planning and Development	
CWR-681	Pressurized Irrigation System	
CWR-682	Land and Water Management	
CWR-691	Environmental Impact Assessment	
CWR-692	Project Construction and Management	
CWR-693	Remote Sensing and GIS Applications in Water Resources	
CWR-694	Water Resources Planning and Economics	
CWR-695	Water Resources System Analysis	
CWR-696	Computer Applications in Water Resources	
CWR-698	Research Methodology	
	Seminar & Thesis	
CWR-699	Seminar on current issues and special topics	
CWR-700	M.Sc. Thesis (6 Credit Hours)	
CWR-800	Ph.D. Dissertation	

M.Sc. Hydropower Engineering

Course Code	Course Title	*Compulsory*
CWR-601	Applied Hydrology	
CWR-611	Advance Open Channel & Computational Hydraulics	
CWR-612	Dam and Reservoir Engineering	
CWR-613	Design of Hydraulic Structures	
CWR-621	Design of Hydropower Plants	
CWR-622	Planning and Development of Hydropower Projects	
		Electives
CWR-602	Catchment Modelling	
CWR-603	Statistical Hydrology	
CWR-604	Reservoir Design and Operation	
CWR-605	Flood Estimation and Control	
CWR-606	Groundwater Hydrology and Exploration	
CWR-614	Sediment Transport and River Engineering	
CWR-615	Physical and Numerical Modelling	
CWR-651	Arid Zone Hydrology	
CWR-652	Groundwater Modeling	
CWR-653	Hydrometeorology	
CWR-654	Snow and Ice Hydrology	
CWR-655	Watershed Planning and Development	
CWR-671	Geological and Geotechnical Investigations	
CWR-691	Environmental Impact Assessment	
CWR-692	Project Construction and Management	
CWR-693	Remote Sensing and GIS Applications in Water Resources	
CWR-694	Water Resources Planning and Economics	
CWR-695	Water Resources System Analysis	
CWR-696	Computer Applications in Water Resources	
CWR-698	Research Methodology	
	Seminar & Thesis	
CWR-699	Seminar on current issues and special topics	
CWR-700	M.Sc. Thesis (6 Credit Hours)	

The Department of Chemical Engineering was established in 1962 at this University and is the first institution in the country to offer B.Sc, M.Sc., and Ph.D. degree programs in Chemical Engineering. Currently, it has an enrollment of about 400 students pursuing undergraduate studies. The Department started M.Sc. Chemical Engineering degree program in 1970, and since then, the postgraduate program has been on the road to progress. At present, there are more than 80 students pursuing M.Sc. studies. In addition, 15 scholars are pursuing their Ph.D. degrees in different areas of Chemical Engineering.

COURSES OF STUDY

The Department offers courses of study leading to the following degrees:

1. Ph.D. Chemical Engineering
2. M.Sc. Chemical Engineering
    a) Specialized in Process Engineering
    b) Specialized in Biochemical Engineering
    c) Specialized in Energy Engineering
3. B.Sc. Chemical Engineering

Ph.D. Chemical Engineering

For Ph.D. degree, the students undertake supervised research work for a minimum residency period of three years. Original research contributions are expected for the successful completion of the degree. On completion of research work, a thesis has to be submitted. Ph.D. degree is awarded after international review and approval of thesis by a board of examiners. Fifteen (15) doctorate degrees have been awarded by the Department in recent past.

M.Sc. in Chemical Engineering

The curriculum for the M.Sc. program has evolved over a number of years and is designed to prepare the students for research and development work. Students are encouraged to work independently on the assigned projects from their specialization

Orientation (6 CH)

Both M.Sc. by coursework and M.Sc. by research are offered as part of

the M.Sc. Chemical Engineering program. By the end of first semester, the students are required to submit Form ChE-PG-01 (Preference for degree program, specialization and research area) clearly mentioning:

- Whether M.Sc. by coursework or M.Sc. by research is chosen
- Order of preference (at least 3) from the departmental focus research areas
- If the student is opting for M.Sc. by research, the Form ChE-PG-01 must also be signed by a potential supervisor.

The students opting for M.Sc. by coursework are required to pass any two (2) of the following courses:

- Core courses not already taken
- Specialization courses not already taken
- Courses from any other area of specialization
- Additional postgraduate courses

In addition, the students opting for M.Sc. by coursework are required to undertake a non-credit, term project in their final semester.
The students opting for M.Sc. by research are required to undertake a supervised research project.

Research Extension and Advisory Services

The Department is engaged in a number of research projects of industrial and theoretical significance under its postgraduate and faculty research programs in the areas of pollution control, energy management, process development, unit operations, and process simulation. The outcome of this research is regularly published in journals of repute and receives recognition from the internal community of chemical engineers.

Laboratories and other Facilities

The Department has well-equipped and well-maintained laboratories in the following fields:

- Chemical Engineering Thermodynamics
- Chemical Reaction Engineering
- Computer Applications and Process Simulation
- Energy Engineering
- Environmental Engineering
- Fluid Flow
- Heat Transfer
- Instrumental Analysis
- Instrumentation and Control
- Mass Transfer
- Process/Wet Analysis
- Catalysis

The Instrumental Analysis laboratory is equipped with state-of-the-art equipment including Atomic Absorption Spectrophotometer, Bomb Calorimeter, Elemental Analyzer, Fourier Transform Infrared Spectrophotometer (FTIR), Gas Chromatograph (GC), High Performance Liquid Chromatograph (HPLC), and Ultraviolet (UV) Spectrophotometer.

The Department has a computer center equipped with latest systems. Apart from learning computer languages and applications in various courses of Chemical Engineering, the students are encouraged to use this laboratory for their design projects, research dissertations, and class assignments.

The Department has a well-organized library with a large number of textbooks, handbooks, reference books, journals, design projects, and research these submitted in the past. Latest publications are regularly added to the collection to cope with the modern research in the field.

Sponsored Projects

A number of sponsored research projects are being pursued in the Department. The current projects include:

- Development and performance evaluation of hierarchical nanocomposites for harsh environments
- Development of fly ash based adsorbent and its application in environmental remediation
- Development of low-cost catalysts for the hydrogenolysis of glycerol to propanediols
- Establishment of a state-of-the-art fuel/gas analysis lab at the Department of Chemical Engineering

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Ing. Naveed Ramzan Professor and Dean	Computer aided design; Process modeling; simulation and safety; Process systems engineering.
Dr. Saima Yasin Professor and Chairperson	Colloid and interface science; Nanotechnology; Rheology; Surface engieering
Dr. Hafiz Muhammad Zaheer Aslam Associate Professor	Adsorption; Wastewater treatment; Reaction engineering
Dr. Humayun Wali Assistant Professor	Phytochemicals and their metal complexes in drinking water disinfection.
Dr. Sidra Jabeen Assistant Professor	Energy from biomass (hydrothermal carbonization of microalgae)
Dr. Muhammad Faheem Assistant Professor	Catalysis/kinetics; Computational chemistry; Process modeling and simulation
Dr. Usman Ali Assistant Professor	Post combustion Co2 capture from power plants
Dr. Umair Aslam Assistant Professor	Biomass processing
Dr. Muhammad Wasim Tahir Assistant Professor	Electrochemical energy storage & conservation; battery modeling; Finite element & CFD modeling; Heat transfer
Dr. Umer Afzal Assistant Professor	Computational fluid dynamics
Dr. Muhammad Asif Akhtar Assistant Professor	Renewable Energy; Gasification of pyrolysis

Degree Options

Following options are available

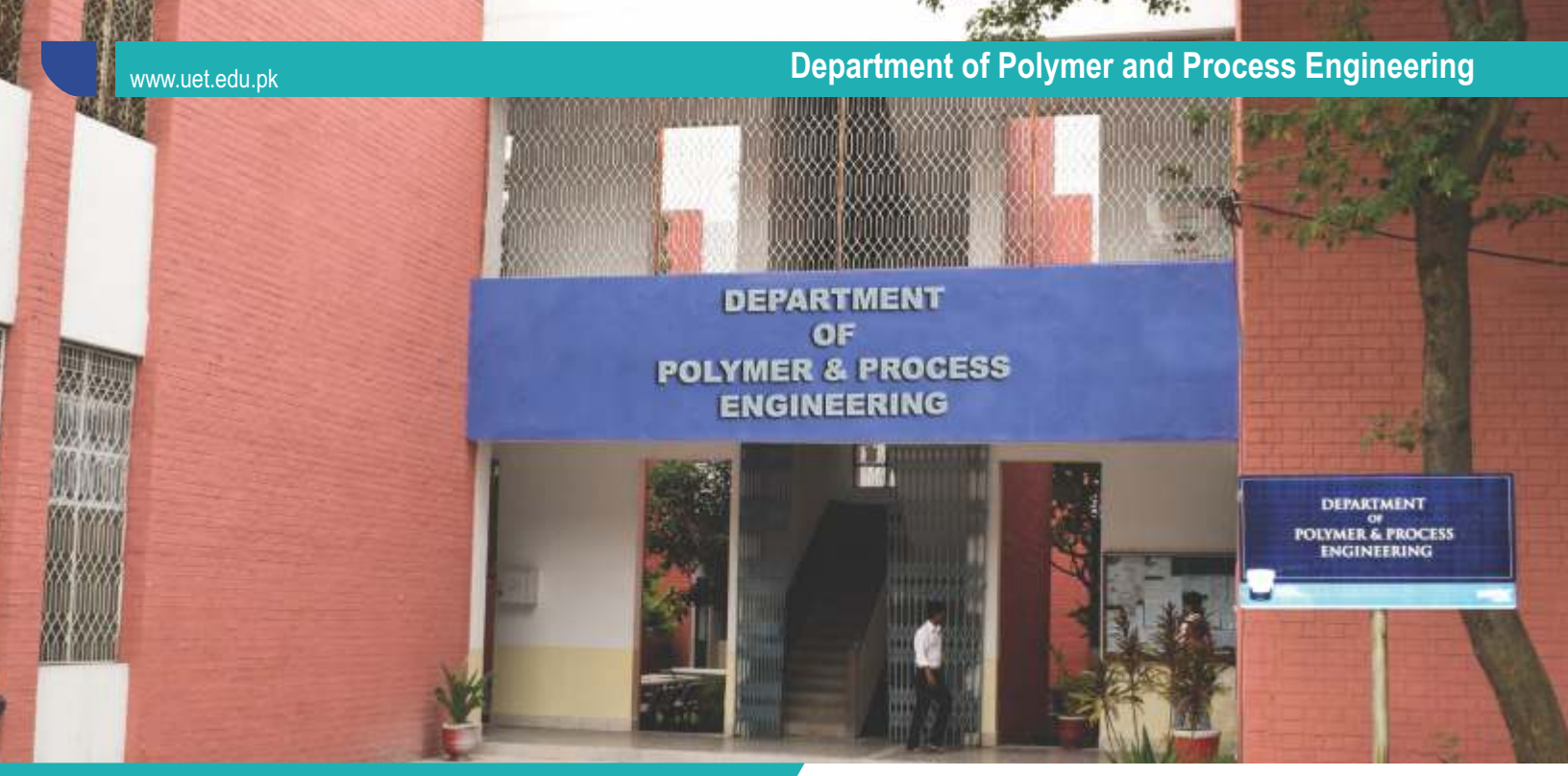
a) Thesis Option: 8 subjects (24 credit hours) + Research thesis (6 credit hours)

b) Non-thesis option: 10 subjects (30 credit hours) + Design problem (0 credit hours)

M.Sc. in Chemical Engineering

Course Code	Course Title	*Compulsory*
	(Common for All Specialization)	
ChE-501	Separation Processes	
ChE-502	Transport Processes	
ChE-503	Statistical Method in Research	
ChE-504	Mathematical Methods in Chemical Engineering	
ChE-505	Advanced Reaction Engineering	
ChE-506	Advanced Chemical Engineering Thermodynamics	
	Specialization in Process Engineering	*Electives*
ChE-511	Advanced Process Control	
ChE-512	Optimization of Chemical Processes	
ChE-513	Computer-Aided Process Synthesis	
ChE-514	Process Intensification	
ChE-515	Advanced Process Safety	
	Specialization in Biochemical Engineering	
ChE-521	Advanced Biochemical Engineering	
ChE-522	Bioreactor Design	
ChE-523	Bioseparations	
ChE-524	Biofuels and Biorefineries	
ChE-525	Biochemical Treatment of Wastes	

Course Code	Course Title	
	Specialization in Energy Engineering	*Compulsory*
ChE-531	Energy Conservation and Auditing	
ChE-532	Energy and Environment	
ChE-533	Oil and Natural Gas Energy	
ChE-534	Coal Technologies	
ChE-535	Combustion Engineering	
	Additional Postgraduate Courses	*Electives*
ChE-541	Project Management for Engineers	
ChE-542	Entrepreneurship for Engineers	
ChE-543	Advanced Process Economics	
ChE-551	Multiscale Modeling	
ChE-552	Statistical and Molecular Thermodynamics	
ChE-553	Advanced Distillation Technologies	
ChE-554	Industrial Catalysis	
ChE-555	Biofuels Development and Applications	
ChE-556	Colloid and Interface Engineering	
ChE-599	Thesis (for M.Sc. Research only) (6 credit hours)	
ChE-598	Design Project -0 Credit Hours (for M.Sc. Course Work only)	



Polymers are emerging field of research and industrial commercialization that are finding a wide-spread and fast-growing use ranging from consumer market to specialized industrial and defense applications. In Pakistan, the polymer industry is one of the fastest growing sectors that needs trained manpower and research support. Keeping this in view, the undergraduate degree program in Polymer and Process Engineering was launched, in 2002, under Polymer Engineering Division of the Department of Chemical Engineering. As a result of a far-reaching ambition, and keen vision which led to the realization of the increasingly important role that Polymer Engineering plays in the world today, the university decided to upgrade the division into an independent degree awarding department in January 2006. Further to this development, the postgraduate degree program in Polymer & Process Engineering was started in 2007.

The Department of Polymer and Process Engineering has already gained considerable prestige and standing in the academic and industrial world due to motivated and outstanding faculty, hardworking and dedicated administration and state of the art laboratories costing more than 100 million rupees. These factors led to commencement of an interdisciplinary M.S. Polymer Science & Technology degree program, and Ph.D. Polymer Science & Engineering degree program in 2017 and 2020 respectively.

Programs being offered

The department offers following degree programs:

1. B.Sc. Polymer Engineering
2. M.Sc. Polymer and Process Engineering
3. M.S. Polymer Science and Technology (Equivalent to 18 years of education)
4. Ph.D. Polymer Science and Engineering

Research Focus

The primary focus of the research in the Department is in the following areas:

a) Polymer membranes for reverse osmosis, electrodialys is, fuel cells, pervaporation and gas separation
b) Elastomers and polymer blends
c) Polymer composites

d) Dye-sensitized solar cells
e) Polymer processing and recycling

Some of the recent research activities at the department include:

- Development of Rotatory Ultrasonic Machining System (RUSM) for advanced aerospace composites (PSF Funded Project)
- Development of Nano-filtration membranes for water treatment (HEC Funded Project)
- Development of Fuel Cell membranes (Pak-Turk Collaboration)
- Novel Mixed Matrix Membranes for Gas Separation (HEC Funded Project)
- Elastomer blends/formulations for various applications related to automotive industry
- Application of polymer composites for energy storage devices including super-capacitors and batteries
- Polymer processing and recycling
- Development of dye-sensitized solar cells

Global Recognition

The postgraduate degrees offered by the Department are highly recognized worldwide and the graduates readily get Ph.D. scholarship/studentships from renowned universities all around the world.

Laboratory Facilities

The academic and research laboratories developed at the Department employ state of the art technology to gain insight into the complex processes and facilitate precise measurements. These laboratories house a wide range of characterization and testing instruments such as Gel Permeation Chromatography (GPC), Fourier Transform Infra-red Spectroscopy (FTIR), Differential Scanning Calorimeter (DSC), Brabender® Melt Measuring Mixer (MMM), Elemental Analyzer, Universal Testing Machine (UTM), Brookfield Rheometer, Moving Die Rheometer (MDR), Izod/Charpy Impact Tester, Lab Compression Press, UV Spectrometer, Hardness and Electrical Conductivity Testers, Electrochemical Potentiostat, Dynamic Mechanical Thermal Analyzer (DMTA), BET Surface Analyzer and Thermal Gravimetric Analyzer (TGA). A number of locally developed membrane rigs are available to facilitate the research activities in membranes application in desalination, nanofiltration, pervaporation and gas separation using real membrane samples. In addition, a fully functional Polymer Simulation laboratory is available for the students housing Autodesk® Mold Flow Simulation software.

The well-resourced process and synthesis laboratories in polymers, membranes, solar cells, elastomers and polymer composites are main strength of the department.
Melt processing laboratories such as extrusion, injection molding, blown film, blow molding and compounding are unique research resource for the research in polymer blends, nanocomposites, recycling and compounding.

Research Output

The research being carried out at the department is published in renowned international journals such as Journal of Membrane Science, Journal of Polymer Science, Polymers and Polymer Composites, Carbon to name a few. The students and faculty have published a large number of impact factor research articles and book chapters in last five years. Moreover, the faculty and students participate in various international conferences as keynote speaker/presenter as well as disseminate their research findings in various poster-presenting activities. The Department organizes Annual Symposium on Advanced Aerospace Composites in which a large number of experts from academia, industries and strategic organizations participate as presenters.

Liaison with Industry

At the department, we believe that universities always have been the centers of scholarship and innovation. Today, they have to extend their function and fully integrate research, education and innovation, and attract other centers of knowledge into cooperation. Research and thus postgraduate studies, have to be more focused on industrial problems. The Department is working relentlessly to establish a meaningful and productive link with prominent polymer related industries. The broad framework of cooperation is as follows:

1. Key sectors of attention at the Department
    - Polymer processing and recycling
    - Polymer membranes and their industrial applications
    - Flame retardant composites
    - Rubber compounding
    - Polymer blending and alloying
    - Polymer testing and characterization

2. Industrial Contribution
    - Industrial training and internships
    - Joint research projects and funding

- Scholarships

3. Modes of Interaction
   - Direct liaison on specific projects
   - Collaboration through HEC-Industry Linkage Program

Under the above mentioned themes, the Department has established very close and congenial relationships with the industries around, including Engro Polymers, Descon Chemicals, Awan Sports, Fibrecraft Ltd., Lucky Plastics, Pak Petrochemical, Packages, Roshan Packages, Popular Pipes, T. M. Rubbers, Samad Rubber Works, Minhas Pipes, Service Industries and many others.

The Department has signed Memorandum of Understanding (MOUs) with some of the leading industries. We provide industrial research and testing facilities to these industries whereas the industry provides practical knowledge to our graduates. Some of the major industries entering into agreement with department include:

- Packages (Pvt.) Ltd.
- SPELL Group of Industries
- Lucky Plastics
- Fibrecraft Ltd.
- Popular Pipes
- Forward Sports
- Minhas Pipes

The Department is working on the future collaboration and many more linkages are expected in the near future.

Industrial Consultancy and Testing

The Department is engaged with industry in research and developmental projects in the areas such as Membranes, Advanced Functional Polymers, Polymer Adhesives, Polymer Composites, Rheological Characterization, Polymer Modification, Polymer Blending, Process Simulation and Design. Testing and characterization of industrial materials and products using ASTM and ISO standards is a valuable industrial linkage mode where the Department generates a handsome revenue for the university.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Ing. Naveed Ramzan Professor and Dean	Computer aided design; Process modeling; simulation and safety; Process systems engineering.
Dr. Asif Ali Qaiser Professor and Chairman	Membranes, Polymer Blending and Alloying, Batteries and Fuel Cells.
Dr. Atif Javaid Associate Professor	Multifunctional Polymers Composites
Dr. Farhan Saeed Associate Professor	Elastomeric Materials, Polymer Processing and Compounding.
Dr. Muhammad Shafiq Irfan Associate Professor	Polymer Composites, Process Modelling and Simulation, Sensors
Dr. Yasir Qayyum Gill Assistant Professor	Flexible Packaging, Polymer Recycling and Processing.
Dr. Muhammad Sarfraz Assistant Professor	Gas Separation Membranes
Dr. Rabia Nazar Assistant Professor	Photo-synthesis of Metal Nano-particles
Dr. Umar Mehmood Assistant Professor	Dye-synthesized Solar Cells
Dr. Muhammad Aamir Shehzad Assistant Professor	Membranes for Electrodialysis

M.Sc. Polymer & Process Engineering

Course Code	Course Title	Core
PPE-501	Polymer Rheology and Viscoelasticity	
PPE-502	Macromolecule Design and Characterization	
PPE-503	Advanced Separation Processes	
PPE-504	Optimization and Process Design	
		Electives
PPE-505	Polymer Reactor Design	
PPE-506	Modeling and Simulation in Polymer Processing	
PPE-507	Elastomeric Materials & Processes	
PPE-508	Advanced Polymer Composites	
PPE-509	Polymer Membrane Design and Applications	
PPE-510	Compounding Principles and Polymer Blending	
PPE-511	Advanced Functional Polymers	
PPE-512	Polymer Coatings and Applications	
PPE-513	Statistical Techniques for Data Analysis	
PPE-514	Advanced Process Control	
PPE-515	Polymer Packaging	

* 12 Credit Hours (4 courses from above list for M.Sc. Research)
* 18 Credit Hours (6 courses from above list for M.Sc. Course Work)

Thesis (for M.Sc. Research only)

PPE-601 Thesis

Design Project (for M.Sc. Course Work only)

PPE-602 Design Project

M.S. Polymer Science & Technology

Course Code	Course Title	Core
PST-501	Polymer Processing Technology	
PST-502	Polymer Materials and Synthesis	
PST-503	Physical and Mechanical Properties of Materials	
PST-504	Advanced Testing and Characterization Techniques	
		Electives
PST-505	Functional Nano-Materials	
PST-506	Polymer Composites	
PST-507	Polymer Compounding and Blending	
PST-508	Degradable Polymeric Materials	
PST- 509	Polymer Coating Technology	
PST-510	Packaging Technology	
PST-511	Elastomeric Materials and Technology	
PST-512	Membrane Science and Technology	
PST-513	Advanced Surface Chemistry	
PHY-726	Spectroscopy	

* 12 Credit Hours (4 courses from above list for M.S. Research)
* 18 Credit Hours (6 courses from above list for M.S. Course Work)

Thesis

PST-601 Thesis

Design Project (for Course Work only)

PST-602 Design Project

Ph.D. Polymer Science & Engineering

Course Code	Course Title
PPE-603	Advanced Characterization Techniques
PPE-604	Polymers in Energy Storage and Generation
PPE-605	Advanced Functional Polymers
PPE-606	Elastomer Engineering
PPE-607	Membrane Separation Technology
PPE-608	Smart Packaging
PPE-609	Multifunctional Polymer Composites
PPE-610	Nanomaterials
PPE-611	Electrochemical Methods
PPE-612	Research Methodologies
PPE-613	Polymer Rheology and Viscoelasticty
PPE-614	Essentials of Polymer Science and Engineering
PPE-699	Ph.D. Thesis

The Department of Metallurgical and Materials Engineering was established in 1965. It has the distinction of being one of the oldest institutions in the country to offer a bachelor's degree in Metallurgy. The Department has been the fundamental contributor in teaching Metallurgy in Pakistan, and thus maintains its leading role in the education of Metallurgical & Materials Engineering. The graduate programs include studies leading to M.Sc. and Ph.D. The Master's degree program was started in 1978. It is primarily a theory-based course though the research work forms a significant part. These courses have been designed primarily for Metallurgical Engineers and Materials Scientists who are working in the Metal Industry and research organizations. Emphasis is being laid on the development of students' ability to integrate and apply their knowledge effectively in industrial organizations. Most of the students enrolled for the M.Sc. come from major organizations of the country. The students have carried out comprehensive research projects relating to the problems faced by our metal industry. The Ph.D. studies are based both on research and course work.

The department has a highly qualified faculty. At present, eight out of thirteen faculty members hold Ph.D. degrees. Three of the faculty members are abroad, pursuing their Ph.D. The department also invites a number of prominent metallurgical engineers and professionals from various organizations as visiting teachers and examiners.

The Department has organized the research work in such a way that it has a direct bearing on our national industry. The Department has links with several industries/organizations which provide necessary facilities for undergraduate projects/experiments and graduate faculty research. These facilities for practical/experimental training relate to foundry techniques, forging, rolling, heat treatment, inspection and testing, welding and corrosion protection.

The Departmental library is well equipped with up to date books for the use of teachers and students. In addition to this, a well-equipped computer laboratory has also been set up to meet the academic and research requirements. The Department organizes seminars and workshops in various areas of Metallurgical and Materials Engineering and offers testing facilities and consultancy services to local industry.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Ing. Naveed Ramzan Professor and Dean	Computer aided design; Process modeling; simulation and safety; Process systems engineering.
Dr.-Ing. Furqan Ahmed Professor and Chairman	Mechanical behavior/Failure Analysis/Coatings/ Thin Films
Dr. Muhammad Asif Rafiq Professor	Ceramics & Composites, Electrical & Magnetic Materials, Characterization Techniques, High Temperature Materials
Dr. Ather Ibrahim Associate Professor	Nanomaterials, Heat treatment of metals, High temperature materials, Materials chacterization
Dr. Zain ul Abdein Associate Professor	Mechanics of materials, Computational materials, Welding simulation, Composite micro simulation
Dr. Ehsan ul Haq Assistant Professor	Geopolymers, Composites, Bio Materials, Energy Materials
Dr. Adnan Maqbool Assistant Professor	Nanomaterials, Electrical Materials
Dr. Muhammad Asif Hussain Assistant Professor	Catalytic materials, Functionally graded materials, Bio and Nanocomposites, Hybrid materials

Degree Options

Following options are available:

Thesis Option: 8 Subjects (24 credit hours) + Research Thesis (6 credit hours)

Subjects Offered in M.Sc./Ph.D.

Note: All courses are 3(3+0) credit hours each unless otherwise specified.

M.Sc. Metallurgical and Materials Engineering

Course Code	Course Title	*Core*
MME-501	Mechanical Behavior of Engineering Materials	
MME-502	Characterization of Engineering Materials	
MME-503	Corrosion and Corrosion Control	
MME-504	Production of Metals and Alloys	
MME-500	Thesis	
		Elective
MME-505	Advance Ceramics	
MME-506	Composite Materials	
MME-507	Joining of Materials	
MME-508	Solidification Processes	
MME-509	Metal Working Processes	
MME-510	Fracture Mechanics and Failure Analysis	
MME-511	Coating Techniques and Surface Analysis	
MME-512	Polymeric Materials Electronic,	
MME-513	Magnetic and Optical Material	
MME-514	Phase Transformation in Materials	
MME-515	Nuclear Materials	
		General Electives
MME-526	Production Management and Quality Control	
MME-527	Industrial Safety and Occupational Hazards	

M.Sc. Metallurgical and Materials Engineering with Specialization in Nano and Advanced Materials

Course Code	Course Title	*Core*
MME-501	Mechanical Behaviour of Engineering Materials	
MME-502	Characterization of Engineering Materials	
MME-503	Corrosion and Corrosion Control	
MME-504	Production of Metals and Alloys	
MME-500	Thesis	
		Elective
MME-516	Nanomaterials and Nanotechnology	
MME-517	Energy Materials	
MME-518	High Temperature Materials	
MME-519	Biomaterials	
MME-520	Advanced Materials	
MME-521	Nanostructured Devices	
MME-522	Carbon Nanomaterials	
MME-523	Thin film Technology	
MME-524	Advanced Powder Processing	
MME-525	Nanocomposites	
		General Electives
MME-526	Production Management and Quality	
MME-527	Control Industrial Safety and Occupational Hazards	

M.Sc. in Surface Science and Engineering

Course Code	Course Title	*Core*
SSE-501	Principles of Surface Science	
SSE-502	Surface analysis and characterization	
SSE-503	Mechanical Behaviour of Thin Films and Coatings	
MME-504	Corrosion and Corrosion control	
SSE-500	Thesis	
		Elective
SSE-504	Conventional Surface Engineering Methods	
SSE-505	Advance Surface Engineering Practices	
SSE-506	Tribology of Surfaces	
MME-502	Composite Materials	
MME-518	High Temperature Materials	
SSE-508	Functional Materials and Coatings	
SSE-509	Biomaterials and Bioactive Coating	
MME-512	Polymeric Materials	
SSE-510	Vacuum Technology	
		General Electives
MME-526	Production Management and Quality Control	
MME-527	Industrial Safety and occupational hazards	

Introduction

The Department of Mining Engineering was established in 1954 as part of the Maclagan Engineering College. It is one of the oldest and best mining schools of the region. The faculty is highly motivated and is focused on carrying out research to find innovative and sustainable solutions for mining industry and the society. There is a well-stocked and a well-equipped computer center for the postgraduate students. The Department offers consultancy and testing facilities to various Mining, Geotechnical, Geological and Civil Engineering Companies as well as Government and Public sector agencies involved in Mining, Minerals and Earth- sciences fields.

The postgraduate program in Mining Engineering started in 1976. M.Sc. and Ph.D. degrees in Mining Engineering are currently being offered by the Department. The Department is going to commence a new M.Sc. degree program in "Tunneling and Underground Excavation Engineering" from September 2017.

The M.Sc. courses are aimed at bringing the students abreast with the most recent developments in their fields of specialization. The Master's degrees are offered on Full-time basis. The Ph.D. program is, however, offered as Full-time studies for external students and as Part-time studies for the teachers of the department.

Postgraduate Courses of Study

1. M.Sc. in Mining Engineering
2. M.Sc. in Tunneling and Underground Excavation Engineering
3. Ph.D. in Mining Engineering

M.Sc. in Mining Engineering

The M.Sc. in Mining Engineering was started in 1976 and is producing good quality graduates, who are serving in Pakistan and abroad. The Department aims to improve the quality of the program through continuous self-assessment, planning and implementation. The eligibility for admission for M.Sc. in Mining Engineering includes a B.Sc. degree in Mining Engineering.

M.Sc. in Tunneling and Underground Excavation Engineering

The Department of Mining Engineering is offering a new program in "Tunneling and Underground Excavation Engineering" to cater the needs and requirements of tunnel industry. This initiation of this program is based on the overwhelming feedback of stakeholders and alumni. The program will consider applicants from relatively diverse academic background including Mining Engineering, Civil Engineering and Geological Engineering.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Ing. Naveed Ramzan Professor and Dean	Computer aided design; Process modeling; simulation and safety; Process systems engineering.
Dr. Zulfiqar Ali Professor and Chairman	Mineral Processing, Coal Cleaning and Desulphurization, Simulation & Modeling of Mineral Processing Circuits
Dr. Shahab Saqib Associate Professor	Explosives Engineering, Mine Surveying, Coal Mining, Mineral, Processing &.Mineral Exploration
Mr. M. Mansoor Iqbal Assistant Professor	Rock Mechanics, Rock Slope Engineering, Mineral Processing, Surveying.
Dr. Yasir Majeed Associate Professor	Rock Mechanics, Hard Rock Mining, Mining Law
Dr. Muhammad Zaka Emad Associate Professor	Numerical modelling, Rock mechanics, Rock Fragmentation, Ground control
Dr. Muhammad Azeem Raza Assistant Professor	Surface Mine Planning & Design, Computer Applications Operations Research and Mine Process Optimization
Dr. Muhammad Badar Hayat Assistant Professor	Mineral Processing, Explosive Engineering, Machine learning and Artificial Intelligence, Rock mechanics
Dr. Muhammad Usman Khan Assistant Professor	Ventilation Engineering, Rock Mechanics Excavation Engineering
Dr. Muhammad Shahzad Assistant Professor	Mineral Processing, Coal Technology, Coal Preparation Rock Slope Engineering, Mine Safety & Hazards.

M. Sc. Mining Engineering

	Core (Select any 4 courses from the following)
Course Code	**Course Title**
Min-E-501	Advanced Rock mechanics
Min-E-502	Advanced Explosives Engineering
Min-E-503	Advanced Excavation Engineering
Min-E-504	Advanced Mine Ventilation
Min-E-505	Advanced Mineral Processing
Min-E-506	Open Pit Mine Planning & Design
	Electives (Select any 4 courses from the following)
Min-E-611	Rock Slope Engineering
Min-E-612	Subsidence Engineering
Min-E-613	Stability of Underground Openings
Min-E-614	Finite Element Method
Min-E-615	Geo Statistics Ore Reserve Modeling
Min-E-621	Environmental Controls For Blasting
Min-E-631	Explosive Rock Fragmentation
Min-E-651	Advance Coal preparation
Min-E-652	Processing Engineering
Min-E-653	Chemistry of Flotation
Min-E-654	Mineral processing Simulation and Control
Min-E-655	Advanced Flotation
Min-E-656	Design of Mineral Processing Plants
Min-E-657	Engineering Data Analysis
Min-E-661	Surface Coal Mining & Equipment Design
Min-E-662	Mine Operation Analysis
Min-E-663	Mine Systems Simulation
Min-E-701	Modern Mine Management
Min-E-702	Mine Cost Analysis & Control
Min-E-703	Mineral Economics
Min-E-704	Management Finance
Min-E-705	Management Information System
Min-E-706	Mine Waste Management
Min-E-711	Rock Mechanics
Min-E-712	Rock Mechanics
Min-E-790	Research Philosophy & Methods
Min-E-799	Research Thesis

Note:

- The completion of M.Sc. (Mining Engineering) degree program requires a total of eight courses (24 credit hours course work)
- In addition, a 6 credit hours Research Thesis is to be completed on Pass/Fail basis

M.Sc. Tunneling & Underground Excavation Engineering

	(Select any 2 courses from the following)
Course Code	**Course Title**
Min-E-500	Tunnel Design
Min-E-501	Advanced Rock Mechanics
Min-E-502	Advanced Explosive Engineering
Min-E-617	Numerical Methods for Design & Construction of Tunnels
	Electives (Select any 2 courses from the following)
Geo-E-519	Advanced Rock Engineering
Min-E-503	Advanced Excavation Engineering
Min-E-616	Underground Construction Methods
Min-E-507	Geological Investigation & Ground Characterization
	(Select any 4 courses from the following)
GE-501	Advanced Soil Mechanics
GE-502	Foundation Engineering-I
GE-503	Foundation Engineering-II
GE-512	Geotechnical Engineering in Professional Practice
Geo-E-504	Advanced Geotechnical Engineering
Geo-E-512	Advanced Engineering Geology
Geo-E-523	Discontinuous Rock
Min-E-611	Rock Slope Engineering
Min-E-618	Health, Safety & Environmental Considerations
Min-E-619	Construction Management
Min-E-620	Communication &
Min-E-622	Tunnel Ventilation Engineering
Min-E-631	Non-Explosive Rock Fragmentation
Min-E-657	Engineering Data Analysis
Min-E-711	Rock Mechanics -I
Min-E-712	Rock Mechanics -II
Min-E-790	Research Philosophy & Methods
Min-E-800	Research Thesis

Note:

- 24 credit hours course work
- 6 credit hour Research Thesis on Pass/Fail basis

The Department of Geological Engineering is continuously striving to improve the standard of postgraduate teaching and research quality to be at par with the best universities in the world. The Department started its M.Sc. program in 2009 in two disciplines i.e., M.Sc. Geological Engineering and M.Sc. Geological Sciences. Department is also offering a Ph.D. degree program in Geological Engineering. These degree programs are designed for students who have the aptitude for higher education in the field of rock engineering, Geotechnical engineering, Exploration of natural energy resources and environmental engineering.

The courses in M.Sc. Geological Engineering and M.Sc. Geological Sciences aim to bring the students abreast with the most recent developments in their field of specialization, either in Geotechnical or Petroleum Exploration sectors. The curriculum of M.Sc. Geological Engineering and M.Sc. Geological Sciences has been designed keeping in view the local needs and international trends.

The Department has a well-qualified faculty for teaching and research for M.Sc. as well as Ph.D. studies. In addition to regular faculty, the Department has a number of professional Mining, Geotechnical (Civil) and Petroleum Engineers on the list of experts who can be invited as visiting teachers, research advisors and examiners.

There is a well-stocked and up-to-date library and computing center for the teachers and postgraduate students. The Department has established links with several industries and organizations which provide necessary technical assistance to undergraduate and postgraduate students and faculty research projects. The Department organizes seminars and workshops on a regular basis in various areas of Geological Engineering and Sciences to enhance the knowledge base of its faculty and students.

Collaboration with International Universities

The Department of Geological Engineering is currently collaborating with Saitama University, Japan. This research and academic collaboration mainly focus on promoting mutual research projects and the exchange of faculty and students between the Department of Geological Engineering and the Department of Civil and Environmental Engineering, Saitama

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Muhammad Zubair Abu Bakar Professor and Dean	Mechanical Rock Fragmentation, Abrasion and Tool Wear, Rock Mechanics, Engineering Geology
Dr. Muhammad Farooq Ahmed Chairman	Engineering Geology, GIS & Remote Sensing, Landslide
Dr. Muhammad Arshad Associate Professor	Geotechnical Engineering, Site Characterization
Dr. Ghulam Mohyuddin Sohail Assistant Professor	Geophysics and Geomechanics, Petroleum Related Rock Mechanics, Borehole Geomechanic
Dr. Hafiz Muhammad Awais Rashid Assistant Professor	Geotechnical Engineering, Geo Environmental Engineering

Scheme of Studies

Notes: All subjects are 3 (3+0) credit hours unless specified

The degree requirement is the completion of 30 credit hours including 24 credit hours of course work and 6 credit hours of research thesis.

The completion of M.Sc. Geological Engineering degree program requires total of eight courses with at least four courses from Group A and two courses from Group B.

The completion of M.Sc. Geological Sciences degree requires a total of eight courses with at least four courses from Group A and two courses from Group B. Specialization in Petroleum Geology or Engineering Geology requires the completion of at least four courses from Section I or Section II of Group A respectively.

DEGREE OPTION

The following option is available:

Thesis Option: 8 Subjects (24 credit hours) + Research Thesis (6 credit hours)

SUBJECT OFFERED IN M.Sc./ Ph.D.

Note: All courses are 3 (3+0) credit hours each unless otherwise specified.

M.Sc. in Geological Engineering

Course Code	Course Title	*Group A*
Geo-E-501	Underground Excavation and Tunneling	
Geo-E-502	Advanced Rock Mechanics	
Geo-E-503	Geohydrology and Environmental Engineering	
Geo-E-504	Advanced Geotechnical Engineering	
Geo-E-505	Advanced Foundation Engineering	
Geo-E-506	Rock Reinforcement and Strata Control Design	
Geo-E-508	Ground Improvement and Geosynthetics	
Geo-E-512	Advanced Engineering Geology	
Geo-E-516	Slope Stability Analysis	
Geo-E-518	Geotechnical Earthquake Engineering	
Geo-E-519	Advanced Rock Engineering	
Geo-E-527	Geostatistics	
Geo-E-601	Earth Dams and Related Problems	
Geo-E-602	Geoenvironmental Engineering	
		Group B
Geo-E-507	Basin Analysis	
Geo-E-511	Subsurface Geological Investigation	
Geo-E-513	Introduction to Reservoir Engineering	
Geo-E-514	Advanced Well Logging	
Geo-E-515	Mud Logging and Drilling	
Geo-E-517	Geophysical Exploration Techniques	

Geo-E-520	Geotechnical Construction Practice
Geo-E-522	GIS & Remote Sensing
Geo-E-523	Discontinuous Rock
Geo-E-524	Hydrogeology and Contaminant Transport Processes
Geo-S-521	Tectonics and Structural Geology
Geo-S-524	Field Geology & Report Writing
Geo-S-701	Mechanical Rock Fragmentation
DE-506	Fracture Mechanics
	Research Thesis (Module III)
Geo-E-521	Thesis

M.Sc. in Geological Sciences

Course Code	Course Title	*Group A*
Section I: Petroleum Geology Specialization*		
Geo-S-501	Reservoir Sedimentology	
Geo-S-502	Advanced Well Log Interpretation and Petrophysics	
Geo-S-503	Principles of Basin Analysis	
Geo-S-504	Petroleum and Coal Geology	
Geo-S-505	Organic & Petroleum Geochemistry	
Geo-S-506	Sequence Stratigraphy	
Section II: Engineering Geology Specialization		
Geo-S-511	Soil Mechanics	
Geo-S-512	Advanced Rock Mechanics	
Geo-S-513	Geological Investigations	
Geo-S-514	Advanced Engineering Geology	
Geo-S-515	Tunnel & Excavation Engineering	
Geo-S-516	Natural Geological Hazards and their Environmental Impact	
		Group B
Geo-S-521	Tectonics and Structural Geology	
Geo-S-522	Applied Biostratigraphy	
Geo-S-523	Applied Hydrology	
Geo-S-524	Field Geology & Report Writing	
Geo-S-525	Wellsite Geology and Drilling Engineering	
Geo-S-526	Geophysical Exploration Techniques	
Geo-S-527	GIS Applications	
Geo-S-528	Reserve Analysis and Geostatistics	
Geo-E-513	Introduction to Reservoir Engineering	
Geo-E-516	Slope Stability Analysis	
Geo-E-519	Advanced Rock Engineering	
Geo-E-523	Discontinuous Rock	
Geo-E-524	Hydrogeology and Contaminant Transport Processes	
Research Thesis and Viva Voce		
Geo-S-541	Thesis	

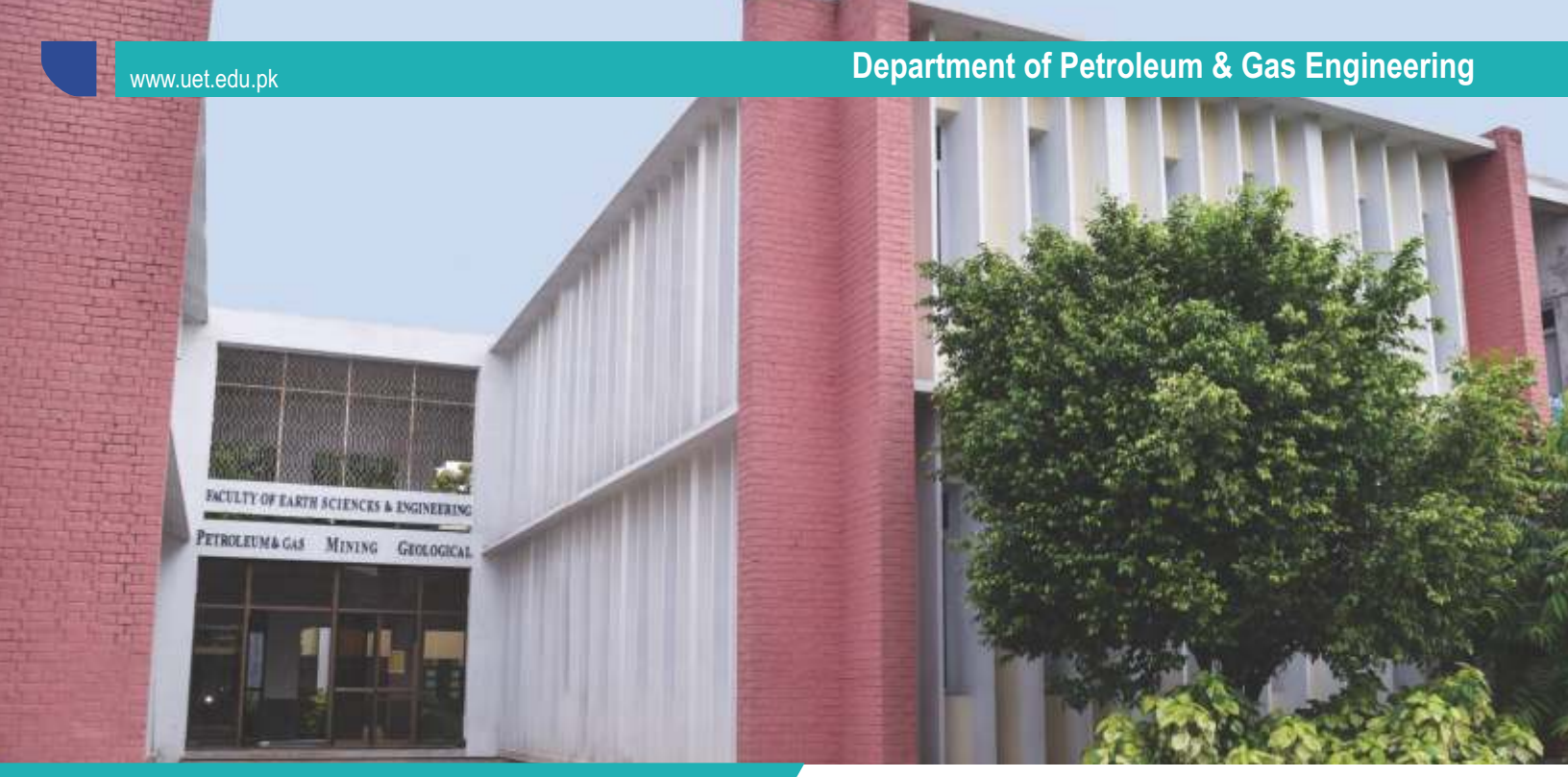
* M.Sc. Geological Sciences with specialization in Petroleum Geology is subject to the availability of relevant faculty in the department.

Ph.D. in Geological Engineering

Course Code	Course Title
Geo-E-501	Underground Excavation and Tunneling
Geo-E-502	Advanced Rock Mechanics
Geo-E-503	Geohydrology and Environmental Engineering
Geo-E-504	Advanced Geotechnical Engineering
Geo-E-505	Advanced Foundation Engineering
Geo-E-506	Rock Reinforcement and Strata Control Design
Geo-E-508	Ground Improvement and Geosynthetics
Geo-E-512	Advanced Engineering Geology
Geo-E-516	Slope Stability Analysis
Geo-E-518	Geotechnical Earthquake Engineering
Geo-E-519	Advanced Rock Engineering
Geo-E-527	Geostatistics
Geo-E-507	Basin Analysis
Geo-E-511	Subsurface Geological Investigation
Geo-E-513	Introduction to Reservoir Engineering
Geo-E-514	Advanced Well Logging
Geo-E-515	Mud Logging and Drilling
Geo-E-517	Geophysical Exploration Techniques
Geo-E-520	Geotechnical Construction Practice
Geo-E-522	GIS & Remote Sensing
Geo-E-523	Discontinuous Rock
Geo-E-524	Hydrogeology and Contaminant Transport Processes
Geo-S-522	Tectonics and Structural Geology
Geo-S-533	Field Geology & Report Writing
Geo-E-601	Earth Dams and Related Problems
Geo-E-602	Geoenvironmental Engineering
Geo-E-701	Mechanical Rock Fragmentation
DE-506	Fracture Mechanics

Note 1: Ph.D. students are allowed to take any other postgraduate courses offered in the University other than this list with the consent of Ph.D. supervisor.

Note 2: The admission eligibility requirement for Ph.D. Geological Engineering will be according to the University policy.



Petroleum Engineering is a field for prospective students who are willing to accept challenges to achieve an exciting and rewarding career. Current oil & gas production in Pakistan is relatively small compared to major oil-producing countries in the world; nonetheless, it plays a vital role in Pakistan's economy. Exploring new energy resources and new technologies is an important need of the hour in which petroleum engineers has a lot to contribute.

Addressing local industry issues from an academic perspective is a significant objective of our graduate program, yet, the key focus is to impart necessary skills and inculcate critical thinking and research attitude towards problem-solving. These goals are achieved by utilizing softwares, laboratory investigations and theoretical developments. In recent past, our candidates have successfully conducted research in Well Testing, Water flooding, Enhanced Oil Recovery, Rock Properties, Fluid Properties, Risk Analysis, Numerical Simulation, Gas Condensate Reservoirs, Tight Gas Reservoirs and Naturally Fractured Reservoirs.

Courses of Study
The department offers following degree programs at the postgraduate level:

1. M.Sc. Petroleum & Gas Engineering
2. Ph. D. Petroleum & Gas Engineering

M. Sc. Petroleum & Gas Engineering
The program is aimed at preparing students for conducting industry-oriented research by working on research projects. This brightens their prospects for being absorbed into the local industry.

The minimum eligibility for admission to the M.Sc. degree course is an undergraduate (B.Sc.) degree in Petroleum & Gas Engineering. Candidates with a B.Sc. degree in Geological Engineering may also apply. However, they will be required to take pre-requisite courses as determined by Departmental Postgraduate Admission Committee on case-to-case basis.

The admitted students become eligible for the award of degree upon successful completion of twenty four (24) Credit Hours of course work and research thesis of six (06) Credit Hours. At least twelve (12) out of twenty four (24) Credit hours of course work must be from Group A.

Ph. D. Petroleum & Gas Engineering

The Ph. D. at the department consists of course work combined with extensive research work. It is one of the conditions for Ph. D. candidates to produce original contribution to the chosen research field/area as per University/HEC criteria.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Prof. Dr. Muhammad Khurram Zahoor Professor and Chairman	Integrated Asset Management; Production Optimization; Reservoir Simulation Studies; Designing & Implementing EOR Methods.
Dr. Arshad Raza Associate Professor	Petrophysics, Reservoir Characterization, Fluids Flow in porous Media.
Dr. Arshad S.A. Shahid Assistant Professor	Geomechanics; Hydraulically Fractured Reservoirs; Fracture Reactivation

Postgraduate Courses in Petroleum & Gas Engineering

Course Code	Course Title	
	(Group-A)	***Core***
Pet.E-501	Enhanced Oil Recovery	
Pet.E-502	Advanced Well Testing	
Pet.E-503	Advanced Production Engineering	
Pet.E-504	Advanced Drilling Engineering	
Pet.E-505	Advanced Reservoir Engineering	
Pet.E-506	Reservoir Simulation –I	
	(Group-B)	***Electives***
Pet.E-511	Naturally Fractured Reservoirs	
Pet.E-512	Mechanics of Gas Flow in Porous Media	
Pet.E-513	Well Log Interpretation	
Pet.E-514	Reservoir Simulation-II	
Pet.E-515	Petroleum Economics	
Pet.E-517	Horizontal Well Technology	
Pet.E-516	Petroleum Production Operations	
Pet.E-518	Drilling Fluids Hydraulics	
Pet.E-519	Production Optimization	
Pet.E-520	Natural Gas Processing	
Pet.E-521	Technology of Artificial Lift	
	Research Thesis	
Pet.E-500	Thesis	

The Department of Architecture was established in 1962 and has the distinction of being the first in the country to offer a bachelor's degree in Architecture. The Department, thus, has been the fundamental contributor towards the founding and establishment of the profession of Architecture in Pakistan and this maintaining its leading role through offering higher programs of architectural education. These programs include Master of Architecture (M.Arch) and Doctor of Philosophy (Ph.D.).

Master of Architecture (M.Arch)
The program was instituted in 1990. It comprises of 24 credit hours' coursework and a research dissertation. Ever since, students from all over the country as well as from outside the country, has shown keen interest to obtain admission. The M.Arch students have carried out comprehensive research projects related to various aspects of our built environment and architectural heritage. The projects help understand hitherto unexplored aspects of our built environment and propose innovative solutions.

Ph.D. in Architecture
The Ph.D. program is offered to make a distinct and valuable contribution to the existing body of knowledge. It is generally expected that architects who wish to join the program have had significant professional experience and have developed an interest in some particular aspect of the built environment which they wish to explore. The Ph.D. program is undertaken by taught courses and research work (Thesis).

The Department has a highly qualified faculty. In addition to the regular faculty, the Department also invites a number of prominent architects and other professionals from the field as visiting teachers, jurors and examiners. Most of the faculty is also involved in research which mainly includes postcolonial theories in architecture, contemporary architecture in Pakistan, energy efficient architecture, planning and design for disaster-prone areas, housing and urban studies and digital architecture.

In addition to above, a fully equipped computer laboratory has also been set up to meet the academic and Information Technology requirements. The department is also working to establish a Centre for Architecture in

Pakistan, which will focus on studying and analyzing the past, present and the future trends for the development of built environment in Pakistan.

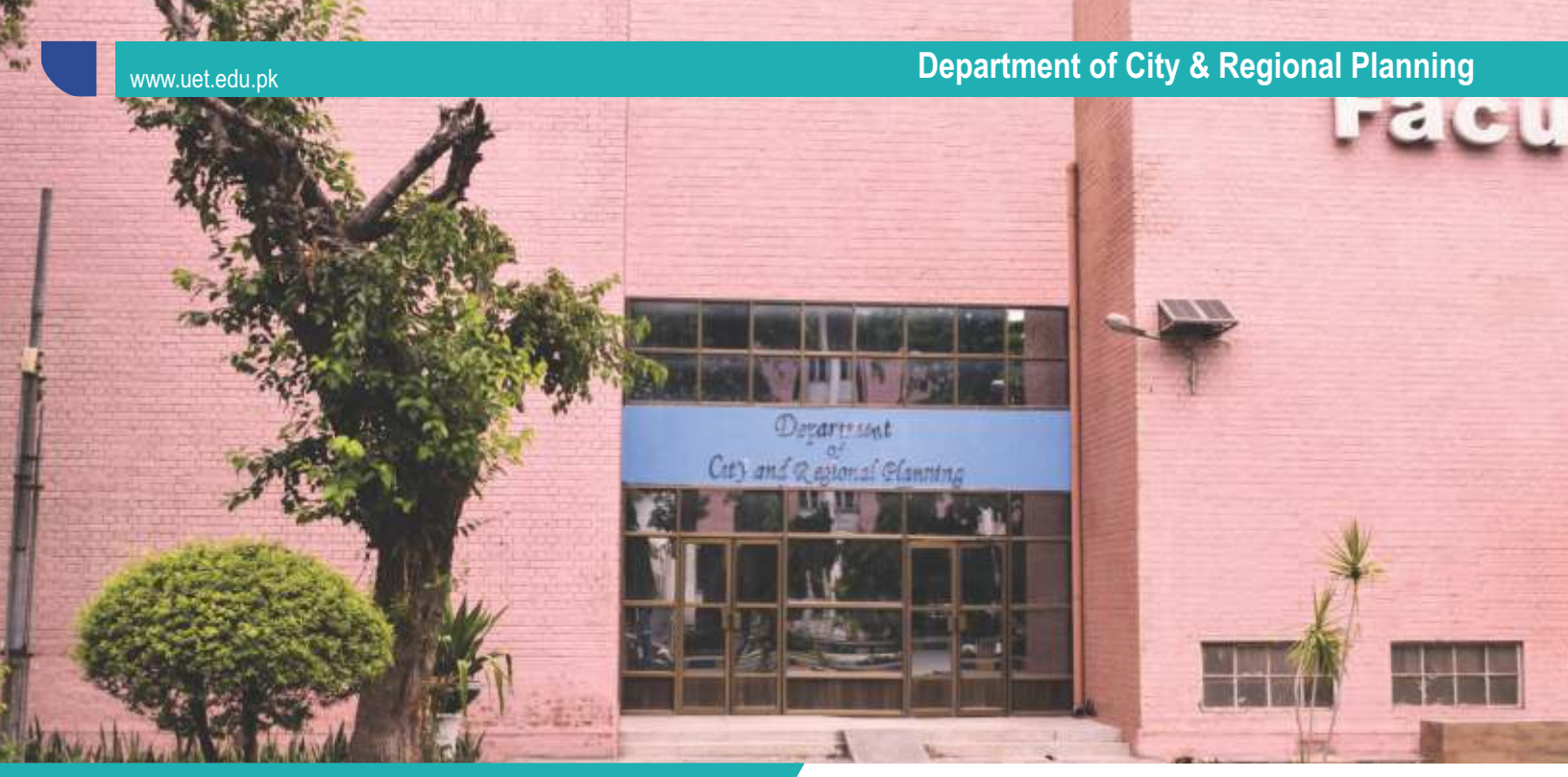
Admission Criteria

(a) Primary undergraduate degree should be B.Arch or B.Sc CRP from a PCATP accredited institute.
(b) The applicant should have scored a minimum of 60 percent marks under term system or 3.0 CGPA under semester system.
(c) The applicant should have scored at least 50 marks in NTS-GAT.
(d) The applicant should score at least 50 percent marks in departmental test and interview.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Rizwan Hameed Professor, Dean and Chairman	Environmental Planning Transport & Environment Housing Policy and Practice Waste Management
Dr. Munazzah Akhtar Assistant Professor, In-charge	Architecture & Art of Islam South Asian Visual Culture British Colonial Architecture Cross Cultural Issues in Architecture
Dr. Shama Anbrine Assistant Professor	Postcolonial Theories in Architecture Urban Design Colonial Architecture and Urban Development Research Methods
Dr. Malik Usman Mehmood Awan Assistant Professor	Sustainable Architecture, Energy Efficient Architecture Efficient Building Services Environmental and Low Carbon Building Designing
Dr. Maryam Siddiq Assistant Professor	Sustainable and Environmentally Friendly Design Social Sustainability and Identity Research Methods

Course Code	Course Title
M.Arch-602	Research Methods
M.Arch-603	Architectural Heritage of Pakistan
M.Arch-604	Contemporary Architecture in Pakistan
M.Arch-605	Theory of Architecture
M.Arch-606	Urban Design Studio-I
M.Arch-607	History of Urban Form
M.Arch-608	Integrated Building Design
M.Arch-609	Building Services and Systems
M.Arch-610	Energy Efficient Architecture
M.Arch-611	Earthquake Architecture-I
M.Arch-612	Sultanate Period Architecture
M.Arch-613	Theory of Digital design Culture
M.Arch-614	Framework for Sustainable Design
M.Arch-615	History of Lahore
M.Arch-616	Interior Design
M.Arch-617	Landscape Architecture
M.Arch-621	Understanding Urban Settlements
M.Arch-622	Advanced Architectural Presentation
M.Arch-623	Business Communication
M.Arch-624	Conservation of Architectural Heritage
M.Arch-625	Conservation of Urban Built Heritage
M.Arch-626	Legislation and Conservation of Cultural Heritage
M.Arch-627	Urban Design Studio–II
M.Arch-628	Technologies and Strategies for Passive Design Architecture
M.Arch-629	Advanced Structural Systems
M.Arch-630	Construction Management
M.Arch-631	Building Energy Simulation and Design
M.Arch-632	Earthquake Architecture-II
M.Arch-633	Urban Renewal and Revitalization in Practice
M.Arch-634	Comprehensive Urban Planning Studies
M.Arch-641	Parametric Urbanism
M.Arch-642	Biomimicry in Architecture
M.Arch-643	Islamic Funerary Architecture
M.Arch-644	Ornamentation in Islamic Architecture
M.Arch-700	Thesis (Compulsory)



The Department of City and Regional Planning (CRP) is contributing to nation building through its graduates since 1962. It is an advanced planning institution in Pakistan, offering top quality education in the fields of:

1. City and Regional Planning (CRP)
2. Community Development and Environmental Planning (CDEM) and
3. Disaster Management (DM)

The Department fascinates national and international students due to its inclusive and vibrant environment and internationally recognized degree programs in CRP, CDEM, and DM. The teaching focuses on equipping the students with all essential skills to transform them into a proficient, knowledgeable, and ethical professional. Majority of the faculty members of this Department are foreign qualified and holding Ph.D. degrees. They actively conduct research to find innovative solutions to plan and manage resilient human settlements in a sustainable manner. The detail of the department and the faculty can be accessed through university weblink https://crp.uet.edu.pk/

NATIONAL AND INTERNATIONAL RECOGNITION

In addition to its undergraduate program, the Department also offers M.Sc./ M.Phil. and Ph.D. Degree Programs. It is worth mentioning that the M.Sc./M.Phil. and Ph.D. degrees offered by the Department are recognized and accredited by the Higher Education Commission (HEC). In addition, the Department has long-established and time-honoured recognition by the International Institutes of City and Regional Planning and the associated professional bodies all over the world such as Asian Planning Schools Association (APSA). The graduates of this Department are also eligible to get registered with international bodies of professional planners such as, American Planning Association, Royal Town Planning Institute, International Society of City and Regional Planners. This has also enabled several of our graduates to work as city planning and development management experts in various countries of the developed and developing world.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Rizwan Hameed Professor and Dean	Environmental Planning, Transport & Environment, Housing Policy & Practice, Waste Management, EIA, Implementation of policies & plans
Dr. Shaker Mahmood Mayo Professor and Chairman	Regional/District Development Planning, Participatory Planning Workshops, Urban Settlements Planning, Project Appraisals, Disaster Management
Dr. Obaidullah Nadeem Professor	Environmental Impact Assessment, Urban Land Management, Housing Policy and Practice, Comparative Urban Planning
Dr. Ijaz Ahmad Professor	Regional Development Planning, Urban Infrastructure Planning, Conflict Resolution and Management
Dr. Amer Aziz Professor	Vehicular Air Pollution and its Environmental Impacts, Land use Traffic Interaction, Mathematical Modelling
Dr. Muhammad Asim Assistant Professor	Urban Land Management, Disaster Risk Reduction and Management, Rural Planning, Advanced Research Methods
Dr. Atif Bilal Aslam Assistant Professor	Sustainable Urban Development, Migration, Urban Mobility, Resilience, Housing Development Planning
Dr. Zareen Shahid Assistant Professor	Climate Change Impacts and Adaptation Community Organization and Development
Dr. Humaira Tabassum Assistant Professor	Planning of Safer Cities, Planning Theories, and Community Planning

POSTGRADUATE COURSES OF STUDY

- M.Sc./ M. Phil in City and Regional Planning
- M.Sc. in Community Development & Environmental Management
- M.Sc. in Disaster Management
- Ph.D. in City and Regional Planning

Courses of Reading for M.Sc. in City and Regional Planning
(Effective from September 2019 Session and onward)

Thesis Option: 8 subjects (24 credits hours) + Research thesis (06 Credit Hours)
Non-thesis option: 10 subjects (30 credit hours) + Design Project

M.Sc. in City and Regional Planning

Course Code	Course Title	Core
4 to 6 courses to be selected		
CRP-601	Planning Theory	
CRP-602	Comparative Urban Planning	
CRP-603	Regional Development Planning	
CRP-604	Advanced Research Methods	
CRP-605	Advanced Planning Techniques	
CRP-606	Housing Policy and Practice	
CRP-607	Urban Transportation Planning	
CRP-608	Environmental Planning	
CRP-616	Mathematical Models in Planning	
CRP-617	Urban Land Management	
CRP-618	Implementation of Policies and Plans	
2 to 4 courses to be selected		*Electives*
CRP-609	Public Transport Planning	
CRP-610	Local Planning Practice	
CRP-611	Environment, Resources and Development	
CRP-612	Urban Design	
CRP-613	Rural Planning	
CRP-614	Geographical Information Systems	
CRP-615	Community Organization and Development	
CRP-619	Project Appraisal	
CRP-620	Transport and the Environment	
CRP-621	Guided Individual Studies in U & R P	
CRP-625	Participation and Social Assessment	
CRP-628	Negotiation and Conflict Resolution Skills	
CRP-629	Poverty Alleviation	
CRP-630	Infrastructure Development	
CRP-631	Disaster Management \	
CRP-632	Participatory Approaches to Waste Management	
CRP-634	Environmental Impact Assessment	
CRP-635	Climate Change Impacts and Adaptation	
		Mandatory
CRP-622	Research Thesis (compulsory only for thesis option)	
CRP-701	Design Project (compulsory only for non-thesis option)	
	Total Credit Hours = 30	

M.Sc. in Community Development and Environmental Management

Course Code	Course Title	Core
4 to 6 courses to be selected		
CRP: 623	Introduction to Community Development Institutions	
CRP: 624	Local Government and Environmental Laws	
CRP: 625	Participation and Social Assessment	
CRP: 626	Community and Sustainable Development	
CRP: 627	Project Planning and Management	
CRP: 628	Negotiation and Conflict Resolution Skills	
2 to 4 courses to be selected		*Electives*
CRP: 604	Advanced Research Methods	
CRP: 611	Environment, Resources and Development	
CRP: 629	Poverty Alleviation	
CRP: 630	Infrastructure Development	
CRP: 631	Disaster Management	
CRP: 632	Participatory Approaches to Waste Management	
CRP: 634	Environmental Impact Assessment	
CRP: 635	Climate Change Impacts and Adaptation	
CRP:622	Research Thesis (compulsory only for thesis option)	
CRP:701	Design Project (compulsory only for non-thesis option)	
	Total credit Hours = 30	

M.Sc. in Disaster Management

Course Code	Course Title
(4 courses to be selected from the following in case of thesis option and 5 courses to be selected in case of Non-thesis option)	*Core*
DM-601	Introduction to Disaster Management
DM-602	Disaster Risk Assessment
DM-603	Disaster Planning and Management
DM-604	Emergency Response Management
DM-605	Disaster and Development
DM-606	Natural Hazards of Pakistan
DM-607	Community Based Disaster Risk Management
CRP-604	Advanced Research Methods
DM-609	Disaster Response and Recovery
DM-610	Disaster Risk Reduction and Preparedness
DM-611	Fundamental of GIS and RS in Disaster Management
DM-612**	Climate Change Adaptation and Mitigation
DM-613**	Resilience through Sustainable Development
(4 courses to be selected from the following in case of thesis option and 5 courses to be selected in case of Non-thesis option)	*Electives*
DM-614	Management of Desertification of Hazard
DM-615	Disaster Management and Economy of Pakistan
DM-616	Disaster Management Policies Disaster
DM-617	Risk and Vulnerability Assessment
DM-618	Disaster Risk Financing
DM-619	Disaster Risk and Urbanization
DM-620	Management of Drought Hazard
DM-621	Management of Earthquake hazard and mitigation
CRP-634	Environmental Impact Assessment
DM-623	Management of Flood Hazard
DM-624	Forecasting of Hydro-Meteorological Hazards
	Course Title
DM-625	Gender Mainstreaming in Disaster Management
DM-626	Impacts of Climate Change and Disasters in Pakistan
DM-627	Management of Landslide Hazard
DM-628	Disaster Planning and Management in Pakistan
DM-629	Psychological Impacts of Disaster and its Management
DM-630	Media and Disaster
DM-631	Urban Safety
DM-632	Infrastructure Development
DM-633	Hazards and Urban Planning
	Mandatory
CRP-622	Research Thesis (compulsory only for thesis option)
CRP-701	Design Project (compulsory only for non-thesis option)
	Total credit Hours = 30

** Added in the existing course of HEC Curriculum of M.Sc. Disaster Management.

Option-1 (Thesis Option): 8 subjects (24 credit hours) + M.Sc. Thesis (6 Credit Hours)

Option-2 (Non-thesis Option): Non-thesis option: 10 subjects (30 credit hours) + Design Project

INFRASTRUCTURE AND FACILITIES

Geographic Information System (GIS) Laboratory

The GIS laboratory of the department is equipped with latest desktop computers having Core i7 processors to facilitate use of satellite imageries for spatial data analysis and planning. The computers are connected to a high-speed server based local network and internet facility. The laboratory is also equipped with modern scanning and printing facilities. The GIS laboratory remain quite helpful for research work of both undergraduate and postgraduate students of the Department.

Library and Equipment

The Department has a well-stocked library, with a wide range of latest books, international journals, reports, and other documents related with the field of City & Regional Planning. The Departmental library was established with the assistance of the British Government. Several new books are added in the library every year. The Department has also got latest mapping/ planning and survey equipment such as global positioning systems and total station, digital planimeters, pantographs, colour plotters, laser jet printers and scanners. In addition, the equipment like noise level meters for noise pollution studies, spectro photometer for chemical testing of water and flue gas analyzer for automotive and industrial emissions testing are also available.

Seminars and Conference Room

The Department has established state of the art seminar and conference rooms. Both are air-conditioned and equipped with smart boards. Symposia and extension lectures of world-renowned research scholars, professional planners and students' discussion forums are frequently held in these rooms.

RESEARCH EXTENSION AND ADVISORY SERVICES

The Department has demonstrated its capabilities to disseminate knowledge beyond the four walls of the Campus by holding seminars, workshops, and symposia for this purpose. The faculty members also extend consultancy and advisory services to government and non-governmental organizations. The Department has undertaken several planning projects such as preparation of Master Plans, Katchi Abadi Improvement Plans, and designing of Housing Schemes. The Department worked with Earthquake Reconstruction and Rehabilitation Authority for the rehabilitation and reconstruction of earthquake hit areas of Azad Jammu & Kashmir and prepared master plan for Bagh Town.

The Department of Product and Industrial Design has been offering B.PID since 2006 and commenced postgraduate program in February 2016.

The primary aim of this program is to provide students with the practical knowledge and required to be at the forefront of global product and services design in either an industrial or academic environment.

Specifically, the course aims to:

- Provide an integrated program of study across a broad range of knowledge and skills in Product and Industrial Design
- Develop design and technology research skills related to the design process through practicing applied research
- Develop advanced product design skills, enabling graduates to practice as an independent design professional and to further develop design and professional skills in Product and Industrial Design Engineering
- Nurture scientific rigor as well as creativity to enable graduates to follow a successful career in product and industrial design and assume leadership roles in national and international companies and institutions.

Laboratory Facilities

The department has set up postgraduate labs (including Digital Graphics, Ceramic, Computer and Wood labs) for master students to promote the research culture. Besides students also use different labs in respective engineering subjects.

Admission Requirement and Eligibility

To be eligible to study a M.PID, the candidate must have an undergraduate degree in PID or equivalent with a minimum CGPA of 2.5/4.0. Admission process is followed by test & interview by the department. The requirements generally contain previous studies in the specific subjects or field of study. For admission purposes equivalency certificate may be required by the Department if the bachelors' degree is a four years Design Degree or/from relevant Design Department.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Muhammad Rizwan Hameed Professor, Dean and Chairperson Dr. Salman Asghar Assistant Professor	Environmental Planning, Transport & Environment, Housing Policy & Practice, Waste Management, EIA, Implementation of policies & plans

Master in Product and Industrial Design

Course Code	Course Title
	Core
MPID-501	Advanced Product Design
MPID-502	Integrated Product Development
MPID-503	Cognitive Ergonomics Design
MPID-504	Visual Communication
	Electives
MPID-505	Graphic Design for product & packaging
MPID-506	Design Psychology
MPID-507	Research methodology
MPID-508	Advanced materials
MPID-509	Design for sustainability & Resilience
MPID-510	Design History (Industrial / Regional)
MPID-511	Interior Design Studio
MPID-512	Product Life Cycle
MPID-513	Electronic Mockups
MPID-514	Project Planning and Management
MPID-515	Applied Space Methodology
MPID-516	Macro Electronics in consumer Products
MPID-517	Service Entrepreneurship
MPID-518	Product Marketing & Branding
MPID-519	Design Culture
MPID-520	Product Launch Processes
	Mandatory
MPID-600	Thesis (Compulsory)
Non – Thesis Option with Zero Credit Hours Design Project	

The Department started the M.Phil Applied Chemistry programs in 2001, Ph.D. Chemistry degree program was started in 2004 and M.Phil. in Food Science & Technology degree program (morning & evening) is started in 2018. In 2020, the weekend program in both M.Phil. Chemistry as well as M.Phil Food Science & Technology has been started. At present, near about 505 students are enrolled in M.Phil (Applied Chemistry as well as Food Science & Technology) and 32 in Ph.D. Chemistry program. So far, 18 students have completed Ph.D. degree from this Department. The Department is also offering Applied Chemistry courses to undergraduate degree programs of the engineering disciplines; that include Chemical, Polymer, Metallurgical, Mining, Industrial and Manufacturing, Geological, Petroleum & Gas Engineering and City Regional and Planning.

The Department has several well-equipped laboratories having a number of modern instruments like UV-Visible Spectrophotometer, FTIR, Atomic Absorption Spectrophotometer, GC-FID, GC-FPD, GC-MS, HPLC-UV, High Temperature Furnaces, Polarimeters, Potentiometer, EDAC, Incubator Shaker, High Speed Control Centrifuge, Low Temperature Incubators Vacuum Pumps, Schilink Lines some Electrochemical Instruments, Fluorescence Spectrophotometer (cary eclipse), ATR (cary 630 FTIR), Refractometer (Abbemat 500), Polarimeter (MCP 500), Potentiostat, Ultra-Low Temperature Freezer (U360 Innova), Thermo Scientific Barnstead Smart 2 Pure water (2 No.), Eliza Reader Laminar Flow Hoods, Cool Incubators, Dry Incubators, Oven, Freezer, Orbital Shaker, Spectrophotometer, Antibacterial and Antifungal facility, Colony Counter etc In addition, there is a Departmental Library and I.T Computer Laboratory to facilitate the Students. Promotion of higher education and Postgraduate Research continues to be the main objectives of the Department.

The Department has highly qualified faculty to meet the diverse needs of curriculum. The Department features enriched educational and research environment that reflects its tradition of dedication and commitment to the profession. The academic staff of the Department has published a large number of publications in journals of national and international repute. The dedication of our faculty towards teaching and research has made Department one of leading Chemistry Department of the country.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Muhammad Shahid Rafique Professor and Dean	Laser Physics, Experimental Plasma Physics
Prof. Dr. Syeda Rubina Gilani Professor and Chairperson	Analytical, Advance Spectroscopy Techniques, NMR Spectroscopy, Food Chemistry, Phytochemistry, Toxicology, Coordination, Inorganic Chemistry and Green Nanochemistry.
Prof. Dr. Farhat Yasmeen Professor	Analytical, Environmental Chemistry and Nanomaterials
Dr. Humayun Ajaz Associate Professor	Inorganic and Analytical Chemistry
Dr. Arjumand Iqbal Durrani Associate Professor	Organic and Food Chemistry
Dr. Aisha Munawar Associate Professor	Inorganic Chemistry, Biochemistry, Proteomics and Venom Toxins
Dr. Abdul Ghaffar Assistant Professor	Polymer and Analytical Chemistry
Ms. Hina Saleem Assistant Professor	Organic Chemistry including Natural Products, Geo-Chemistry, Organic Spectroscopy and Organomatellics.
Dr. Zahoor Ahmad Assistant Professor (TTS)	Physical and Material Chemistry
Dr. Ashi Rashid Assistant Professor	Physical and Electrochemistry

M.Phil. Applied Chemistry/ Ph.D. Chemistry Degree Programs

Course Code	Course Title
CY-601	Advanced Physical Chemistry
CY-622	Chemistry and Biosynthesis of Secondary Metabolites
CY-641	Coordination Chemistry
CY-644	Advanced NMR Spectroscopy
Common to all Specializations	
CY-623	Gas Chromatography-Mass Spectrometry
CY-625	Advanced Organic Chemistry Projects
CY-642	Advanced Spectroscopic Techniques
CY-652	X-Ray Diffraction Techniques
CY-654	Liquid Chromatography

Note: - Core courses are compulsory to all specializations. Four courses will be offered from respective specialization/common to all courses. Degree requirement is 24 credit hours theory and 06 credit hours thesis.

Course Code	Course Title
(A) Physical Chemistry (CY-601 to CY-620)	
CY-601	Advanced Physical Chemistry
CY-602	Applied Electrochemistry
CY-603	Advanced Surface Chemistry
CY-604	Advanced Chemical Kinetics
CY-605	Advanced Quantum Chemistry
CY-606	Statistical Mechanics
CY-607	Molecular Spectroscopy
CY-608	Advanced Solid State Chemistry
CY-609	Nanotechnology
CY-610	Computational Chemistry
CY-611	Fuel Cell Technology
CY-612	Advanced Solution Chemistry
CY-613	Chemistry of Advanced Composite Materials
CY-614	Surfactant and Colloidal Chemistry
CY-615	Physical Chemistry of High Polymers
CY-616	Advanced Nuclear and Radiation Chemistry
(B) Specialization In Organic Chemistry	
Organic Chemistry (CY-621 to CY-640)	
CY-621	Heterocyclic Chemistry
CY-622	Chemistry and Biosynthesis of Secondary Metabolites
CY-623	Gas Chromatography-Mass Spectroscopy
CY-624	Advanced Color Chemistry and Technology
CY-625	Advanced Organic Chemistry Projects
CY-626	Food Chemistry and Technology
CY-627	Food Additives and Preservatives
CY-628	Food Analysis
CY-629	Advanced Organic Geochemistry
CY-630	Biomarker in Sedimentary Environment
CY-631	Petroleum Chemistry & Petrochemicals
CY-632	Advanced Polymer Chemistry
CY-633	Polymer Analysis and Characterization
CY-634	Functional Polymers
CY-635	Modern Methods of Organic Synthesis
C Specialization in Inorganic/Analytical Chemistry	
Inorganic/Analytical Chemistry (CY-641 to CY-660)	
CY-641	Coordination Chemistry
CY-642	Advanced Spectroscopic Techniques
CY-643	Physical Methods in Organic Chemistry
CY-644	Advanced NMR Spectroscopy
CY-645	Organometallic Chemistry
CY-646	Inorganic Chemistry Reaction Mechanisms
CY-647	Bioinorganic Chemistry
CY-648	Material Chemistry

CY-649	Metal-Metal Bonds and Cluster Compounds
CY-650	Main Group Chemistry
CY-651	Homogeneous Catalysis
CY-652	X-Ray Diffraction Techniques
CY-653	X-Ray Spectroscopy and Scanning Electron Microscopy
CY-654	Liquid Chromatography
CY-655	Electroanalytical Chemistry
CY-656	Advanced Inorganic Mass Spectrometry
CY-657	Liquid Chromatography-Mass Spectrometry
CY-658	Mass Spectrometric Characterization of Proteins
CY-659	Drug Testing
(D) Specialization in Green and Sustainable Chemistry	
Green and Sustainable Chemistry (CY-661 to CY-680)	
CY-661	Sustainable Chemistry
CY-662	Environmental Trace Analysis Techniques
CY-663	Green Projects Applications in Industry
CY-664	Environmental Chemistry
CY-665	Environmental Toxicology
CY-666	Green Chemistry and Sustainable Chemistry
CY-667	Nanochemistry
CY-668	Nanomaterials and Heterostructures
CY-669	Biomass to Biofuels and Bioenergy
CY-670	Integrated Environmental Assessment and Management
CY-671	Environmental Laws
(E) Specialization in green and sustainable chemistry	
Biochemistry (CY-681 to CY-698)	
CY-681	Fundamental Biochemistry
CY-682	Enzyme and Enzyme Catalysis
CY-683	Pharmacokinetics and Drug Metabolism
CY-684	Applied Microbiology
CY-685	Protein: Structure, Function and Purification
CY-686	Mass Spectrometric of Proteins
CY-687	Structural Biology
CY-688	Bioinorganic Chemistry
Third and Fourth Semester	
CY-699	M.Phil. Research Thesis and Seminar
Ph.D.	

1. Any Six Courses (18 credit hours) from the above list.
2. Comprehensive Examination as per Ph.D. requirements
3. Research Thesis and Public Defense

M.Phil Food Science & Technology Degree Program

Course Code	Course Title
	Core
FST-500	Advanced Food Chemistry
FST-501	Physical Properties of Food Recent
FST-502	Advances in Food Science & Technology
FST-503	Advance Food Biotechnology
Optional Courses (Any Four)	***Electives***
FST-504	Proteomics in Food Science
FST-505	Polymers in Food Science
FST-512	Food Additives
FST-513	Food Enzymology
FST-514	Food Toxicology
FST-521	Food Laws and Regulations
FST-522	Food Industrial Waste Management
FST-523	Post Harvest Management
FST-524	Food Packaging
FST-525	Food Quality Assurance Management
FST-531	Baking Science & Technology Starch
FST-541	Chemistry and Technology
FST-542	Milling of Cereals
FST-551	Dairy Processing-I
FST-552	Dairy Processing-II
FST-562	Advanced Food Microbiology
FST-571	Chemistry of Edible Oils and Fats
FST-572	Industrial Processing Technology of Edible Oils & Fats
FST-581	Products Meat Science
FST-582	Technology of Processed Meat
FST-591	Advanced Beverage Technology
Note: Students are required to complete four courses (compulsory) and any four optional courses from the above list comprising one-year research thesis.	
Third and Fourth Semester	
FST-600	Research Thesis and Seminar

The Department of Mathematics provides an environment to learn foundations, applications and creative approaches related to mathematical and engineering problems. Thus, contributing to research services for science and engineering and giving students opportunities to collaborate with other researchers to broaden their scope for new mathematical approaches. In addition, the department offers BS in Mathematics, M.Phil. in Applied Mathematics and Ph.D. in Mathematics.

Postgraduate classes started in 1988. Since then M.Phil. in Applied Mathematics is being offered as a full-time two year course on semester basis. The Ph.D. program has also been launched and in the recent past the department has registered research scholars for this program. So far, nineteen scholars of the department have been awarded Ph. D. degrees.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Muhammad Shahid Rafique Professor and Dean	Laser Physics, Experimental Plasma Physics
Dr. Muhammad Mushtaq Professor and Chairman	Fluid Mechanics, Vector and Tensor Analysis
Dr. Sabir Hussain Professor	Applied Functional Analysis, Theory of Time Scales, Inequalities with Applications
Dr. Asma Rashid Butt Professor	Functional Analysis

Dr. Qasim Ali Ch. Associate Professor	Bio Mathematics, Mathematical Modeling, Numerical Analysis
Dr. Muhammad Irfan Qadir Associate Professor	Condensed Matter Physics, Theoretical Mechanics, Numerical Methods
Dr. Shafiq-ur-Rehman Associate Professor	Development of Numerical Integrators for Differential Equation and the use of Simulations to Model the Dynamics of the Solar System.
Dr. Mustafa Habib Associate Professor	Biomathematics
Dr. Samia Riaz Assistant Professor	Variational Inequalities, Numerical Analysis
Dr. Anjum Pervaiz Assistant Professor	Numerical Analysis, Differential Equations
Dr. Saadia FaridAssistant Professor	Fluid Mechanics
Dr. Kashif Ali Khan Assistant Professor	Fluid Dynamics, Numerical Simulation
Dr. Shamaila Samreen Lecturer	Computer Aided Geometric Design (CAGD), Commuter Graphics, Geometric Modeling, CAD/CAM and CAE
Dr. Muhammad Shabbir Lecturer	Fourier Analysis, Numerical Solution
Dr. Taimoor Iqbal Lecturer	Topology Optimization, Finite Element Modeling

SYLLABI & COURSES READING DEGREEOPTIONS

Following option is available:

Thesis Option: 8 Subjects (24 credit hours) + Research Thesis (6 credit hours)

SUBJECTS OFFERED IN M.PHIL/Ph.D

Note: All courses are 3 (3+0) credit hours each unless otherwise specified.

- Ph.D. students may choose courses from the general optional list in addition to the courses mentioned in the lists of optional courses for first and second semesters of M.Phil. Applied Mathematics.

M.Phil. in Applied Mathematics

Course Code	Course Title	*First Semester-Core*
MATH-701	Integral Transforms	
MATH-702	Viscous Fluid Flow	
The student will have choice of two courses out of the following:		*Electives*
MATH-703		
MATH-704	Applied Linear Algebra-I	
MATH-705	Approximation Theory	
MATH-706	Advanced Operations Research-I	
MATH-707	Electro-hydrodynamics	
MATH-708	General Theory of Relativity	
MATH-709	Analytical Dynamics	
MATH-710	Theory of Splines-I	
MATH-711	Applied Functional Analysis-I	
MATH-712	Numerical Solutions of Non Linear System of Equations and Ordinary Differential Equations	
MATH-766	Theory of Differential Equations	
MATH-767	Optimal Control Theory in Applications to Biology-I	
MATH-768	Numerical Solution of Variational Inequalities-I	
	Mathematical Analysis, Modelling and Applications-I	

Course Code	Course Title	*Second Semester-Core*
MATH-713	Numerical Solutions of Partial Differential Equations	
MATH-714	Numerical Solutions of Integral Equations	
		Electives
The student will have choice of two courses out of the following:		
MATH-715	Compressible Fluid Flow	
MATH-716	Magneto hydrodynamics	
MATH-717	Perturbation Methods in Fluid Mechanics	
MATH-718	Applied Linear Algebra-II	
MATH-719	Theory of Splines-II	
MATH-720	Advanced Operations Research-II	
MATH-721	Applied Functional Analysis-II	
MATH-722	Advanced Complex Analysis	
MATH-771	Optimal Control Theory in Applications to Biology-II	
MATH-772	Mathematical Modeling in life Sciences	
MATH-773	Numerical Solution of Variational Inequalities-II	
MATH-774	Mathematical Analysis, Modelling and Applications-II	
MATH-799	Research Thesis (6 credit hours)	

FURTHER OPTIONAL COURSES FOR Ph.D. MATHEMATICS STUDENTS:

- Ph.D. students may choose courses from the following list in addition to the courses mentioned in the lists of courses for first an second semesters of M.Phil. Applied Mathematics.

Ph.D. Mathematics

Course Code	Course Title
Math-723	General Topology
Math-724	Measure Theory and Lebesgue Integration
Math-725	Algebraic Topology-I
Math-726	Galois Theory-I
Math-727	Topological Vector Spaces
Math-728	Algebraic Topology-II
Math-729	Galois Theory-II
Math-730	Ordered Linear Spaces
Math-731	Topics in Variational and Quasivariational Inequalities
Math-732	Advanced Algebra
Math-733	Optimization Theory-I (Derivative Based Methods)
Math-734	Optimization Theory-II (Derivative Free Methods)
Math-735	Numerical Solution of Differential-Algebraic Equations
Math-736	Advanced Mathematical Modeling
Math-737	Set-Valued Analysis
Math-738	Fixed Point Theory and its Applications
Math-739	Advanced Graph Theory
Math-740	Genetic Algorithms and Engineering Optimization
Math-741	Advanced Network Flow Theory
Math-742	Fractional Calculus
Math-743	Theory of Time Scales
Math-744	Continuum Mechanics
Math-745	Gas Dynamics
Math-746	Computational Fluid Dynamics
Math-747	General Tensors
Math-748	Special Functions
Math-749	Finite Element Method
Math-750	Boundary Element Methods
Math-751	Introduction to Modeling of Processes in Cell Biology
Math-752	Advance Course in Numerical Analysis: Mathematical Modeling of Biological System
Math-753	Best Approximation
Math-754	Numerical Functional Analysis
Math-900	Ph.D. Thesis

Courses of Study
The Department offers the following Postgraduate programs:

1. M.Phil. in Applied Physics
2. M.Phil. in Nanoscience and Technology
3. Ph.D. Physics

The highly qualified and motivated faculty includes twenty members with Ph.D. degree. The interdisciplinary curriculum draws on faculty expertise in many areas of Applied Physics and includes such courses as Laser Physics, Plasma Physics, Nanotechnology, Health & Medical Physics, Photonics & Optoelectronics, Applied Optics, Applied Atomic & Nuclear Physics, Solid State Physics, Computer Science and its applications and Electronics, etc.

The department so far has produced 371 M.Phil. and 466 M.Sc. students, who are serving in different educational institutes like Lahore College for Women University, G.C. University, Lahore, F.C. College University, PIEAS, etc. R & D Organizations like PAEC, NESCOM, OPTICS Lab. KANUPP etc. and in the field of Medical Physics in Shaukat Khanum Hospital, INMOL etc. The department has also produced 27 Ph.D. and 23 are pursuing their Ph.D. degree.

There are six well equipped laboratories in the department. The research work is backed up by the state-of-the-art equipments where students have the opportunity to perform experiments of advanced level with the special emphasis on the applied concepts of Physics.

The Department has also two fully equipped Advanced Research Centers:

(I) Laser & Optronics Centre
This centre provides research facilities in Lasers, Laser Material Interactions, Laser produced Plasma, Optoelectronics and Photonics, etc. The main equipment includes high power femto-second Ti-Sapphire Laser, Nitrogen Laser, Nd: YAG Laser, Diode Lasers, XeCl Excimer Laser, high resolution Three Stage Optical Microscope, Heating Furnace, Nanodiamond Fabrication Facility, Solid Oxide Fuel Cell Fabrication Facility and more related to above mentioned fields.

The research labs, in the Department are well equipped and have the research facilities like Vacuum Systems (turbo molecular pump, Diffusion and Rotary pumps, Vacuum Gauges like Pirani gauge, Ionizing gauge etc), Vacuum Chambers, Spectrometer, Photomultipliers, Digital Storage Oscilloscope and Transmission Optical Microscope. Two Laser Systems KrF Excimer (UV) & Nd: YAG (IR) are also in operation to facilitate the postgraduate and Ph.D. research students to perform experiments on laser-matter interaction, plasma formation and to study radiation emission from laser produced plasmas.

(ii) **Nanotechnologies Research Centre**

The Nanotechnology Research Centre (NRC) was established in 2008 in the Department of Physics to focus on precision engineering or tailoring of materials at nano scale. In addition to the nano scale research facilities, the NRC also has created programs to attract researchers and to facilitate the scientists.

Nanotechnology Research Centre (NRC) has the following state-of-the-art laboratories

1. Nanofabrication Lab
2. Diagnostic & Characterization Lab

The following equipments have been installed and are currently in operational in NRC.Atomic Force Microscope (AFM), Raman Spectrometer, AC Electro-deposition set up, DC Electro-deposition set up Magnetic Field Annealing System, Multifunctional Generator, Magnetic Stirrer with hot plate, Analytical Balance, Power Supplies etc.

Besides this, a Panalytical X'Pert Pro X-Ray Diffractometer and Scanning Electron Microscope (SEM) have been installed to facilitate researchers and industry to perform structural and morphological analysis of different samples. The Department can provide its expertise in the above mentioned areas at National and International level.

(iii) **Centre for Nanotechnology and Advanced Material Research (CNAMR)**

University of Engineering and Technology established a modern and state of the art Centre for Nanotechnology and Advanced Materials Research (CNAMR) at its Main Campus.

This centre has two latest Field Emission Scanning Electron Microscope (FESEM) and High Resolution Transmission Electron Microscope (HRTEM) further modern High Tech equipments is in pipline.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Muhammad Shahid Rafique Professor and Dean	Laser Physics, Experimental Plasma Physics
Dr. Anwar Latif Professor and Chairman	Laser Matter Interaction
Dr. Rehana Sharif Professor	Nanotechnology
Dr. Muhammad Iqbal Professor	Theoretical Plasma Physics
Dr. Khurram Siraj Professor	Pulsed Laser Ablation thin films Solid Oxide Fuel Cell, Optronics
Dr. Shamaila Shahzadi Associate Professor	Nanotechnology
Dr. Rashid Jalil Associate Professor	Nanotechnology / Graphene Electronics and composite
Dr. Amina Afzal Assistant Professor	Polymeric Membranes
Dr. Jaweria Zartaj Hashmi Assistant Professor	Thin Films PLD
Dr. Saima Shaukat Assistant Professor	Thin Films
Dr. Ibtsam Riaz Associate Professor	Nanotechnology / Graphene Electronics and composite
Dr. Abdul Waheed Anwar Associate Professor(TTS)	Nanotechnology / Raman Spectroscopy
Dr. Umber Kalsoom Assistant Professor	Thin Films
Dr. Usman Ilyas Assistant Professor	Spintronics
Dr. Ishrat Mubeen Dildar Assistant Professor	Condensed Matter Physics
Dr. Muneeb Irshad Assistant Professor	Solid Oxide Fuel Cell
Dr. Saba Majeed Gondal Assistant Professor	Theoretical Plasma
Dr. Haamid Jamil Assistant Professor	Thin Films
Dr. Sofia Siddique Assistant Professor (TTS)	Nanotechnology / Optronics
Dr. Khadija tul Kubra Lecturer	Energy Storage Devices

Ph.D. Physics

The Ph.D. Physics program was started in 2001. Since then 27 Ph.D. degrees have been awarded so far in different latest fields of Physics such as Laser Physics, Laser Matter Interaction, Laser Plasmas, Thin Films and Nanotechnology etc. The Ph.D. course works are also related to modern field of Physics. The Ph.D. degrees are awarded in accordance with HEC Criteria. The details are given below

Course Code	Course Title
Phy-720	Quantum Optics
Phy-721	Optical Properties of Materials
Phy-722	Laser Matter Interaction
Phy-723	Physics of Magnetism and Magnetic Materials
Phy-724	Quantum Transport and Applications
Phy-725	Nanobiophysics
Phy-726	Spectroscopy
Phy-727	Physics of Renewable Energy Sources
Phy-728	Nanomagnetism and Spintronics
Phy-729	Advanced Optoelectronics
Phy-900	Ph.D.Thesis

Course Code	Course Title
	Core
NST-501	Fundamentals of Nanotechnology
NST-502	Nano Physics
NST-503	Nanofabrication Techniques
NST-504	Characterization of Nanostructures
	Electives
NST-505	Self-assembly of nanostructures
NST-506	Biomedical applications of Nano materials
NST-507	Nano photonics
NST-508	Industrial Nanotechnology
NST-509	Nanotechnology in Energy Conversion and Storage
NST-510	Nanoscale Magnetic Materials and Devices
NST-511	Nano scale Optical Spectroscopy
NST-512	Metallopolymer Nanocomtesposi
NST-513	Nanosensors
NST-514	Thin film growth and Epitaxy
*PST-505	Functional Nanomaterials
*CY-667	Nano Chemistry
*CY-668	Nanomaterials and Heterostructures
*MATH-551	Nano Fluids
NST-600	Thesis (by experimental research work)

Course Code	Course Title
The students have to take 8 (eight) courses in First two semesters from the following list.	
Phy-701	Plasma Physics
Phy-702	Physics of the Materials
Phy-703	Atmospheric Physics
Phy-704	Lasers
Phy-705	Experimental Techniques
Phy-706	Cloud Physics
Phy-707	Advanced Lasers & Techniques
Phy-708	Applied Meteorology
Phy-709	Health & Medical Physics
Phy-710	Physics of Advanced Materials
Phy-711	Atmospheric Electricity
Phy-712	Advanced Plasma Physics Techniques & Applications
Phy-713	Environmental Physics
Phy-714	Computer Programming
Phy-715	Nano Physics and Nanotechnologies
Phy-716	HighTemperature Super Conductivity
Phy-717	Fractal Analysis
Phy-718	Photonics and Optoelectronics
Phy-719	Applied Optics
Phy-730	Physics of Solid Oxide Fuel Cells
Phy-731	Nanostructures, Nanomaterials and their Characterization
Phy-732	Nanomaterials-Synthesis, Properties and Applications
Phy-733	Computational Solid State Physics
Phy-734	Computational Laser Mater Interaction and Laser Induced Plasma
Phy-735	Physics and Applications of Semiconductor Nanostructures
Phy-736	Advances in Spintronic Materials, Technology and Devices
Phy-737	Graphene: Fundamentals and Application
Phy-738	Composite Materials
Phy-800	Research Thesis

* Crosslisted subjects: the courses are taken from other departments; PST-Department of Polymer and Process Engineering, CY-Chemistry Department and MATH-Mathematics department.

The department also offers courses of Applied Physics at undergraduate level to majority of engineering departments, computer science and architecture department. The curricula of the courses cover many branches of physics including recent developments in the subject. These are reviewed periodically to keep them abreast with therapid changes occurring in the Engineering disciplines and the correlative areas of Physics

Ph.D. Program in Islamic Studies
The department has been offering this program since the academic year 2012 successfully.

Mission
To produce a team of scholars:

- who are well equipped with the broad vision and true spirit of Islam.
- who are competent to meet contemporary challenges and provide solutions of the issues faced by the Muslim *Ummah* in the light of the revealed knowledge i.e. the Holy *Qur'ān* and the *Sunnah* of the Holy Prophet (SAWS).
- who have the qualities to introduce the high Islamic values such as unity, tolerance and respect etc. in the society.
- who take active part to maintain inter-faith harmony in Pakistan and in the world.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Muhammad Shahid Rafique Professor and Dean	Laser Physics, Experimental Plasma Physics
Dr. Hafiz Muhammad Shahbaz Associate Professor and Chairman	Hadith, Tafseer, Seerah
Dr. Atiq ur Rahman Associate Professor	Quran, Hadith, International Law
Dr. Hafiz Zahid Latif Assistant Professor	Comparative study of religions, Islam and Science
Dr. Tanveer Qasim Assistant Professor	Comparative study of religions
Dr. Hafiz Qudratullah Assistant Professor	Quran, Hadith, Seerat, Takhreege-al-Hadith

Ph.D in Islamic Studies

Course Code	Course Title
IS-701	Uloom-Al-Qur'ān (Qur'ān Sciences)
IS-702	Uloom-Al-Hadith (Hadith Sciences)
IS-703	Usul-Al-Tehqeeq (Research Methodology)
IS-704	Usul-Al-Fiqh (Islamic Jurisprudence)
IS-705	Ahkām Al-Qur'ān wa Al-Sunnah (Laws of Qur'ān and Sunnah)
IS-706	Darasatul Adyān (Study of Religions)
IS-707	Tareekh wa Usloob Al-Qur'ān (History and Style of the Holy Qur'ān)
IS-708	Manāhij Tafseer Al-Qur'ān (Methodology of Tafseer of Qur'ān)
IS-709	Mutoon wa Mauzuāt Tafseer Al-Qur'an (Textual Study of Tafseer Al-Qur'ān)
IS-710	Al-Seerah (Prophetic Biography)
IS-711	History of Compilation of Hadith
IS-712	Manāhij Shārihi Al-Hadith Al-Nabawi (Methodology of nterpreters of Hadith)
IS-713	Manāhij Al-Naq'd I nd Al-Muhaddithin (Methodology of Criticism:Viewsof Hadith Experts)
IS-714	Masādir Al-Tashri Al-Islami (Sources of Islamic Legislation)
IS-715	Manāhij Al-Ij'tihād fi Al-Fiqh Al-Islami (Modes of Legislation in Islamic Law)
IS-716	Tatawwur Al-Fiqh Al-Islami (Development of Islamic Law)
IS-717	Tatawwur Usul Al-Fiqh (Development of Islamic Jurisprudence)
IS-718	Al-Hukm Al-Shar'i (The Islamic Rule)
IS-719	Al-Ahliyyah Al-Shar'i yyah (Legal Capacity of a Person)
IS-720	History of Revealed Religions
IS-721	History of Non Revealed Religions
IS-722	Applied Study of Ethics
IS-723	Muslim Contribution in Science
IS-724	Islam and Contemporary Challenges
IS-900	Ph.D Research Thesis

M.Sc. Textile and Materials Engineering

This program aims at bringing the students abreast with the most recent developments in Textile and Materials Engineering by enhancing their analytical skills and research capabilities. Textile industry is one of the major contributors to the economy, exports and employment opportunities of Pakistan. Whereas materials engineering is one of the hottest fields around the globe. The modern research highly focuses on the exploration and exploitation of various materials for targeted high performance and cost-effective applications. Through the enhancement of analytical skills, critical analysis and research capabilities of the students, this program tends to provide integrated recent trends, modern studies, insights into the fields of textiles and materials with directed applications to the needs of industry. The program will prepare master level postgraduates for careers in teaching, research and development and management for academia, government, and industry.

Department faculty have won funded projects from HEC, PSF, UET, industry and NGOs. Paid research associate positions for MS students are also available at the Department on competitive basis. The department is currently conducting multi-dimensional research ranging from the sustainability in the textile process, textile machine modification, development of advance materials, green conversion of the textile wastes to the synthesis and applications of nanomaterials for widespread applications, innovative material development, innovative fiber from waste (banana and post-consumer waste), efficient carbon fibers and phosphorescent materials. Active textile sustainability research group is working in the department. The faculty has produced more than 140 (including 80 impact factor) research papers in the last five years. Four Ph.D. students have completed, and three more Ph.D. students are being co-supervised in the textile dyeing and finishing area at the department. Department has developed anti-viral masks, PPEs, innovative banana fabric and other range of innovative products and processes. Department is the member of the Society of Dyers and Colorist, UK. Department also won the only prize for Textile Processing Technologies at the 6th, 7th, 8th Invention to Innovation Summit 2017, 2018 and 2019. Its textile engineering students have won 3rd position at the SDC-UK (Pakistan region) textile color competition 2018 and the second place at the European Union (EU) mask competition 2020.

There is 100% job placement for the graduates of the textile department. Graduates of the textile department are currently working in some of the top mills of the country like Nishat, Sapphire, Interloop, Crescent, Kamal, Master, Artistic, US Apparel, TTI, US denim and Masood textile etc. On 19th May 2021, department of textile engineering organized the 4th International Conference on Sustainable Textile 2021 for the fourth consecutive year. In 2020, the three mega events of textile were physically attended by around 1000 participants form textile industry and universities. Textile sustainability working group has also been announced at the 4th International Conference on Sustainable Textile 2021 and it has already been joined by over 100 top textile industries of Pakistan for joint projects, training and R&D.

Postgraduate Faculty & Their Research Interests

Teacher Name	Research Interest
Dr. Muhammad Mohsin Chairman	Research interests: Sustainable processing, advance material development, cost and energy efficient process development, medical and hygiene textile, ZDHC, waste-water treatment, foam dyeing and finishing, toxic free fire retardant development, sustainable oil and water repellent, waste recycling.
Dr. Shaheen Sardar Assistant Professor	Research interests: Production management, Supply chain management, Garment
Dr. Aamir Abbas Assistant Professor	Research interests: High performance carbon fiber development, waster conversion into carbon fiber, nano materials, spinning, waste recycling.
Dr. Usama Bin Humayoun Assistant Professor	Research Interests: Nano-materials synthesis and applications, luminescent textiles, wearable piezo-electric nano-generators, weaving.

Research Facilities

In addition to the highly qualified and experienced faculty, staff, the department is well equipped with state of art lab scale equipment. There are more than 100 textile equipment installed in the following labs.

Laboratories

- Mini Spinning Lab-complete range (Pakistan's first and only such lab)
- Pilot Spinning Lab
- Weaving Lab
- Knitting Lab
- Pre-treatment, Dyeing & Finishing Lab
- Wet Processing Research Lab
- Textile Chemical Synthesis and Polymerization Lab
- Testing Lab (Physical & Chemical)
- Scanning Electron Microscope Lab
- Garment Manufacturing Lab
- Pattern Cutting Lab

The Department has the following testing facilities; Tensile Strength, Tear Strength, Colorfastness to Washing, Air Permeability, Viscosity Testing, Scanning Electron microscope Analysis, Flame Retardency (LOI), Pilling & Abrasion Resistance (Martindale), Flame Retardency (Vertical/Horizontal), Antimicrobial Testing, Oil Repellency Test, Water Repellency Test, Pilling Resistance (ICI), Colorfastness to Crocking, Colorfastness to Staining, Light Fastness Testing, Dimensional Stability, Crease Recovery Angle, Absorbency Test, Microscopic analysis, GMS, Burst Strength, Video Analyzer, Thickness Test, Water Quality Testing (TDS, pH, Conductivity etc), Chemical Composition, Material Thickness, Fabric Appearance after Repeated Home Laundering, Cotton Trash Content, Cotton Fineness, Yarn Examination, Single Yarn Strength, Lea Breaking Strength, Perspiration Fastness, Yarn Twist and Color Difference Delta E.

Scope of the Program

The program aims at preparing the graduates for careers in R&D, teaching, management of academia, government and industry. The Master's students will be familiarized with the properties and applications of various advance textile processes, textile chemicals and materials. In-depth knowledge of polymeric materials, carbon fibers, metallic and bio-composite materials ranging from nanoscale to macro scale. In addition to various physical and mechanical properties, various functional aspects and applications of the textile materials will also be covered. It is also the objective of this program to establish and strengthen the linkage with the

industry for the mutual benefits. Postgraduates of this program will also serve in the pivotal Pakistani textile industry and will contribute to the development of the national economy. This program shall also provide a basis for continued study leading to Ph.D. degree.

Candidates fulfilling the following criteria are eligible to apply for admission to the program,

List of Courses Offered

Two options, each with total credit hours of 30 are being offered. All courses are of 3 (3,0) credit hours.

(a) Thesis option: 8 subjects (24 credit hours) + Thesis (6 credit hours)
(b) Non-Thesis option: 10 subjects (30 credit hours) + Design Project

Course Code	Course Title	*Core*
TEX-501	Research Methodology	
TEX-502	Advanced Materials	
TEX-503	Advanced Analytical Techniques	
TEX-504	Sustainable Textile	
Elective Courses (Any six of the following for non-thesis option) or (Any four of the following for thesis option)		*Electives*
TEX-506	Advanced Spinning Techniques	
TEX-507	Advanced Weaving	
EX-508	Advanced Knitting	
TEX-509	Advanced Wet Processing	
TEX-510	Advanced Garment Manufacturing	
TEX-511	Nano Materials	
TEX-512	Advanced Composites	
TEX-513	Smart Materials	
TEX-514	Supply Chain Management	
TEX-515	Advanced Finishing Chemicals and Processes	
TEX-516	Advanced Surface Engineering	
TEX-517	Production and Operational Management	
TEX-505	Thesis	

Introduction

A dynamic and ever-changing business environment creates a strong demand for management professionals to perform exceptionally through proactive and informed decisions. For organizations to meet this emerging demand, the University established the Institute of Business and Management (IB&M) in 2009, which aligns with the UET's long-held tradition of innovation, professional excellence and industry-oriented education. IB&M provides a combination of robust curriculum, highly qualified faculty with remarkable research contribution, well-equipped business school premises, and a myriad of student support services that synergize into a memorable and rewarding learning experience.

Degree Programs

The Institute offers the following undergraduate and graduate degree programs.

Undergraduate Degree Programs

- BBA (Hons)
- BBIT (Hons)

Graduate Degree Programs

- MBA
- Executive MBA
- MS Management
- MS Marketing

Postgraduate Faculty & Their Research Interests

Teacher Name

Dr. Muhammad Shahid Rafique
Professor and Dean

Dr. Muhammad Nasir Malik
Director

Dr. Abdul Aziz Khan Niazi
Assistant Professor
Dr. Amir Ikram
Assistant Professor
Dr. Bilal Aziz
Assistant Professor
Dr. Farah Samreen
Assistant Professor
Dr. Farman Afzal
Assistant Professor
Dr. Kanwal Iqbal Khan
Assistant Professor
Dr. Muhammad Shoaib Farooq
Assistant Professor
Dr. Naeem Akhtar
Assistant Professor

Facilities

- IB&M has always relied on technology-intensive methods for teaching and learning. At IB&M, a state-of-the-art computer laboratory provides a vibrant and high-tech environment that caters to the learning needs of our students.

- The library at IB&M offers a wide array of advanced educational services. It is equipped with over 6,000 books related to curricula, general knowledge and periodic journals to promote scholarly interests and research activities.

- IB&M organizes different demand-driven activities, such as training programs, international conferences, seminars, workshops, business idea competitions, industrial tours and recreational trips. The blend of curricular and extra-curricular activities enables the students to perform extraordinarily in their professional and personal lives. The graduates of IB&M are making their mark in many industries across the globe.

Rules & Regulations Relating to Admissions, Examinations & Discipline

IMPORTANT INFORMATION

1. **Definitions**
   a) "University" means the University of Engineering and Technology, Lahore
   b) "College" means the Constituent/ Affiliated College of the University
   c) "Faculty" means the concerned faculty of the University
   d) "Vice-Chancellor" means the Vice-Chancellor of the University
   e) "Pro Vice-Chancellor" means the Pro Vice-Chancellor of the University
   f) "Dean" means the Dean of the concerned faculty
   g) "Principal" means the Principal of a college
   h) "Chairman" means the Chairman of the concerned department of the University/College
   i) "Controller" means the Controller of Examinations of the University
   j) "Student" means a bonafide student of a degree program of the University who does not maintain admission simultaneously in any other degree/diploma program of the University or in any other Institution
   k) "Candidate" means a student who intends to appear in an examination
   l) "Board of Studies" means the Board of Studies of the concerned discipline of the University/College

Explanations

The pronoun "he" and its derivatives are used for both male and female persons.

Depending upon the context, the words imparting the singular number include the plural number as well.

2. **Modification of Rules and Regulations**
   The rules and regulations governing various aspects of students' life at the University (such as discipline, admissions, examination, migration, fees and charges, etc.) are given in this prospectus as they stood at the time of its publication. There is no guarantee that these rules and regulations will remain unchanged throughout a student's stay at the University, nor does it in any way restrict or curtail the inherent powers for the University authorities to modify them whenever in their judgment any modifications are called for, and to implement the modified rules and regulations from a date which they deem appropriate.
3. **Special Provisions**
   a) In all cases where the regulations are silent, the decision of the Vice Chancellor shall be final.
   b) Interpretation of these rules and regulations by authorized officers of the University shall be final.
   c) The University authorities reserve the right to make any changes in the existing regulations, rules, fee structure and courses of study that may be considered necessary at any time without prior notice.
   d) No student is allowed to maintain simultaneous enrollment in any other program of studies in the university or any other educational institution within or outside Pakistan, unless permitted by the competent authority as an Exchange Student.
   e) In case a student enrolled in this University is found to be a regular student of some other university/institution whether local or foreign, his admission in this university shall be canceled.
   f) Students are required to know the rules and regulations mentioned in the prospectus and notified time to time. Ignorance of rules and regulations does not absolve them of their responsibilities and shall not be treated as an excuse.

4. **Liability for Injury, Damage and Loss**
   The University teaching programs include training in its workshops and laboratories, places of engineering and architectural interest, industrial concern, and construction jobs. The University or other concerns shall not be responsible in the event of an injury, damage or loss to a student resulting from any cause whatsoever during the course of such training.

CODE OF ETHICS

بسم اللہ الرحمن الرحیم

In the name of Allah, the Beneficent, the Merciful

Whereas Allah enjoineth upon his men faithfully to observe their trusts and their covenants;

- that professional expertise is a sacred trust entrusted to those whom Allah in his magnificent bounty has endowed with this skill and knowledge;
- that every member of the profession shall appreciate and shall have knowledge as to what constitutes this trust and covenant and that a set of dynamic principles derived from the Holy Quran shall guide this conduct in applying his knowledge for the benefit of society,

It shall be incumbent upon the members of the professional community to subscribe to individually and collectively and to uphold the honour and dignity of their profession:

1. "Allah commands you to render back your trusts to those to whom they are due, and that when you judge between people you judge with justice. Allah admonishes you with what is excellent." (4:58)
   - You shall be honest, faithful and just, and shall not act in any manner derogatory to the honour, integrity or dignity of their profession.
2. "And let not hatred of a people incite you not to act equitably. Be just that is nearer to observance of duty." (5:8)
   - You shall not injure, maliciously, directly or indirectly the reputation or employment of another Engineer, nor shall you fail to act equitably while performing professional duty.
3. "Give full measure and weight justly and defraud not men of their things and act not corruptly in the land making mischief." (11:85)
   - You shall use your knowledge and skill of engineering for human welfare and render professional service and advice which reflects your best professional Judgement.
4. "And swallow not up your property among your salves by false means, nor seek to gain access thereby to the judges, so that you may swallow up a part of the property of men wrongfully while you know." (2:188)
   - You shall not abuse you position or power, nor accept illegal gratifications of any sort.
5. "Fulfil the obligations." (5:1)
   - You shall faithfully observe and fulfil all your obligations.
6. "And speak straight words." (33:70)
   - You shall express your opinion on professional or other matters in a frank, open and straight forward manner.
7. "Avoid most of suspicion for surely suspicion in some cases is sin; and spy not nor let some of you backbite others." (69:12)
   - You shall not criticize another professional's work without his knowledge nor malign, or injure his professional reputation.
8. "Ye who believe. Let not some men Among you laugh at others. It may be that the (latter) are better than the (Former); Nor let some women Laugh at others: It may be that the (latter) are better than the (Former)" (49: 11)
   - You shall not ridicule fellow professional nor let one professional discipline deride other disciplines or professions.
9. "Nor defame nor be sarcastic to each other. Nor call each other By (Offensive nicknames)" (49:11)
   - You shall not directly or indirectly discredit other professionals nor assign (derogatory) epithets to their persons or work.
10. "And follow not that of which thou hast no knowledge. Surely the hearing and the sight and the heart, of all these it will be asked." (17:36)
    - Your professional advice shall be based on full knowledge of the facts and honest conviction, and you shall not write articles or advertise in self-laudatory language or in any manner derogatory to the dignity of the profession.
11. "O ye who believe: If a wicked person comes to you with any news, Ascertain the truth lest Ye harm people unwittingly." (49 :6)
    - You shall ascertain facts before accepting them and shall not encourage or cause others to carry tales. Credulity is no credit.
12. "And help one another in righteousness and piety and help not one another in sin and aggression and keep your duty to Allah." {5:2)
    - You shall help one another in upholding and doing what is right and shall not associate with those who transgress and those who indulge in unethical practices.
13. "And forget not kindness among yourselves." (2:237)
    - You shall be kind and considerate to others and shall not fail to be co-operative and accommodating.
14. "And whose affairs are decided by counsel among themselves." (62:38)
    - You shall decide matters of common professional interest by mutual consultation.
15. "And hold fast by the covenant of Allah all together and be not disunited." (3:102)
16. "And obey Allah ad His apostle; And fall into no disputes Lest ye lose heart and reputation." (8:40)
    - You shall strive individually and collectively to enhance the prestige of your profession by ordering your conduct in accordance with this Code of Ethics and shall not be disunited.

PG SEMESTER REGULATIONS

1.0 Introduction

The following regulations govern the Semester System for the Postgraduate degrees awarded by University of Engineering and Technology (UET), Lahore.

i. Classification of postgraduate degrees offered at the University under Semester System are given in the following table:

Degree Nomenclature	Abbreviation	Areas
Doctor of Philosophy	Ph.D.	Engineering disciplines, Computer Science, City and Regional Planning, Architecture, Chemistry, Physics, Mathematics, Islamic Studies Business Administration and Management Sciences.
Master of Science (18 years equivalent)	M.Sc.	Engineering disciplines, Computer Science, Energy Sciences, Geological Sciences, City and Regional Planning.
Masters (18 years equivalent)	M.Arch., M.PID, MBA	Architecture, Product & Industrial Design and Business Administration.
Master of Philosophy (18 years equivalent)	M.Phil.	Applied Chemistry, Applied Mathematics, Applied Physics and Food Science & Technology.
Master of Science (18 years equivalent)	M.S.	Polymer Science and Technology, Marketing and Management.

ii. Masculine gender used in the following regulations implies male students as well as female students.

iii. The medium of instructions and examinations shall be English for all subjects except Islamic Studies for which the medium of instructions and examinations shall be either Arabic, Urdu or English.

iv. The term "Academic Year" refers to the period of study at the University comprising of two regular semesters and an optional summer semester.

v. The term "Contact Hour" refers to a 50 minutes period of contact with the students.

vi. The term "Credit Hour (CH)" refers to a unit of academic credit during a semester. Each credit hour is related to a one or more "Contact hours per week" according to subject type as defined in these regulations.

vii. The term “Pre-requisites” refers to subjects that must be successfully completed prior to registration in a subject requiring these pre-requisites.

viii. The term “Co-requisite” refers to subjects that must be registered simultaneously if studied for the first time. During repetition, simultaneous registration of such subjects is not necessary.

ix. The term “Advisor” refers to a faculty member of the student's department deputed to counsel a group of postgraduate students.

Degree Programs	Duration (in calendar years)	
	Minimum	Maximum
Doctor of Philosophy	03	08
Master of Science (18 years equivalent)	1½	04
Masters (18 years equivalent)	1½	04
Master of Philosophy (18 years equivalent)	1½	04
Executive M.B.A.	02	04

Under exceptional circumstances, the Vice Chancellor is authorized to grant extensions up to a maximum period of two years for Ph.D. and other programs on the recommendation of the respective Postgraduate Research Committee (PGRC) and the Dean.

3.0 Student Status

i. Postgraduate students shall be classified as "Regular" students during the minimum duration of their respective degree program while registering in at least 6 credit hours during fall and spring semesters and 3 credit hours during summer semester.

ii. Students shall be classified as "Casual" students if:
   1. They register in less than 6 credit hours during fall and spring semesters and less than 3 credit hours during summer semester; or;
   2. They register for credit hours after completion of their minimum degree duration period.

4.0 Credit Hours Requirement

a) The minimum credit hours requirement for the award of Ph.D. degree shall be 90 CH beyond a 16 years B.S./ B.Sc. or equivalent degree, including a minimum of 42 CH of Ph.D. research culminating in a thesis.

b) The minimum credit hours requirement for the award of 18 years equivalent degree beyond a 16 years degree shall be:
   i. 30 CH of course work that includes a non-credit design project in their final semester, which would address solution to a complex problem in the related field; or
   ii. 24 credit hours of course work along with a minimum of 6 credit hours of M.Sc./ M.Phil. thesis.

c) The minimum CH requirement for the award of Executive M.B.A. shall be 66 CH beyond the degree specified in the admission requirements. The minimum credit hours requirement award M.B.A. business undergraduates weiil be 30 credit hours and for non-business undergraduates will be 60 credit hours.

5.0 Semesters Nomenclature, Duration and Registration Matters

a) There shall be two regular semesters, namely Fall and Spring semesters, and an optional summer semester during each academic year.

b) Duration of fall and spring semesters will be of 16 to 18 weeks. The duration of summer semester will be 8 weeks with weekly contact hours being double from those of fall and spring semesters.

c) The maximum and minimum permissible number of students to be allowed registration in a subject section will be decided by the concerned Board of Studies.

d) Students may consult their advisors for registration guidelines.

e) A student, regular or casual, may be allowed to register in:
   i. In case of Ph.D and 18 years equivalent degrees, at most 12 credit hours during fall and spring semesters such that the contact hours per week do not exceed 15. In case of 16 years equivalent degrees, at most 18 credit hours during fall and spring semesters such that contact hours do not exceed 24.
   ii. At most 6 credit hours during summer semester such that the contact hours per week do not exceed 10.

a) Registration in a subject section will be closed if the maximum student enrollment ceiling in that section has been reached.

b) A subject section will be closed if less than the minimum numbers of students register in that section. Such students who have been denied registration due to a closure of a section may add some alternate subject(s) during add and drop period.

c) During summer semester, selected subjects may be offered in accordance with departmental policy for summer semester.

6.0 Curriculum and its Sub-Categories

i. The curriculum, subject identification numbers, the credit hours allocated to each subject and detailed syllabus shall be according to the proposals made by the PGRC / BoS and the BoF concerned and approved by the Academic Council.

ii. Classification of sub-categories are given below:
   a) "Theory" wherein the primary mode of teaching shall be lectures given by teachers supplemented by home assignments. For the purpose of these regulations, subjects of this type shall be referred to as Type-A;
   b) "Practical" wherein the primary mode of teaching shall be experiments, studio laboratory, designs, drawings, assignments and projects conducted/executed by students as specified in the syllabus. For the purpose of these regulations, subjects of this type shall be referred to as Type-B;
   c) Research work required towards completion of 16 years equivalent degrees culminating into a project / thesis shall be classified as Type C sub-category.
   d) Postgraduate research work required towards completion of theses / dissertation for 18 years equivalent and Ph.D.

degrees culminating into theses / dissertation shall be classified as Thesis sub-category.

7.0 Type-A Sub-Category Evaluation and Contact Hours

i. In Type-A subjects, there shall be a mid-term examination of one hour duration and a final examination of at least one-and-a-half hour duration. These examinations shall carry 30% and 40% weight, respectively. The teacher shall schedule additional assessment instruments such as quizzes, assignments, presentations, seminars, group discussions, field study reports, etc. as specified in the syllabus or as determined by the teacher. These assessment instruments shall carry the remaining 30% weight of the subject.

ii. There shall be one contact hour per week for the duration of a regular semester for each credit hour assigned to Type-A subjects.

8.0 Type-B Sub-Category Evaluation and Contact Hours

i. In Type-B subjects, each Experiment, Studio work, Jury Presentation, Design, Drawing, Project or Assignment shall be considered an independent assessment instrument. Relative weight of each independent assessment instrument shall be determined by the concerned teacher in computing the cumulative performance, on a scale of 100, of all assessment instruments completed during the regular semester.

ii. There shall be two to three contact hours per week for the duration of regular semester for each credit hour assigned to Type-B subjects.

9.0 Type C Sub-Category and Thesis Sub-Category

a) In Type-C subjects, each exercise, project or assignment shall be assessed for process during its life time (Continuous Assessment) while the end product shall be assessed, right after its submission, through Viva-Voce (Terminal Assessment).

b) Continuous Assessment and Terminal Assessment of Type-C subjects may carry 60 and 40 percent weight, respectively.

c) External Examiners/ Jurors shall be involved in the assessment of all Type-C subjects.

d) There shall be two to four contact hours per week during Fall and Spring semesters for each credit hour assigned to Type-C subjects.

e) Thesis sub-category evaluation process would be followed as prescribed in relevant regulations.

10.0 Award of Letter Grades

a) The subject teacher, having interacted with the students, taught them and having assessed them over the semester, shall award letter grades to the students. Chairman of the concerned degree awarding department will be consulted while finalizing the letter grades. Letter grade in each Type-A subject shall be awarded on a Relative Scale whereas, letter grade in Type-B and Type-C subjects may be awarded on an absolute scale if deemed fit by the subject teacher.

b) Following steps in awarding letter grades on a relative scale may be followed:

i. Minimum marks threshold linked to content mastery shall be established for award of a passing letter grade. Students earning marks below this threshold shall be awarded "F" grade;

ii. Maximum marks threshold shall also be established. Student(s) crossing the maximum threshold, if any, will be awarded “A+” grade. The grade points of “A+” and “A” are same. As such, it is expected that only exceptional students demonstrating outstanding results are given recognition by award of this grade.

iii. Students earning marks between the maximum and minimum thresholds are listed in descending order of merit and the average and standard deviation is computed;

iv. Passing letter grades are awarded according to the table given below, with "A" being the highest passing grade and "D" being the lowest passing grade.

v. The cluster of students falling within half standard deviation of average marks may be graded as “B” or “B+“.

vi. Other passing letter grades may be awarded on the basis of clusters of students within narrow ranges for a population less than 100; Or on a normal curve basis if the population of students is more than 100.

vii. It is not essential that every class should have all letter grades awarded, that is, it is possible that a class does not have any student below the minimum threshold; Or in another scenario in which no student, in the opinion of the instructor, is eligible for the award of “A” grade. There may be cases where no student qualifies for some intermediate grade.

viii. An upper limit on percentage of students in a subject who can earn a particular passing grade may be placed, if required.

c) The letter grades and their corresponding grade points (GP) are given in the table below;

Table
Letter Grades & Corresponding Grade Points

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	F	W	WF	I	IP
4.0	4.0	3.7	3.3	3.0	2.7	2.3	2.0	1.7	1.3	1.0	0	-	-	-	-

d) Subjects repeated to improve grades, excluding "W" or "WF" grades, will be shown on the transcript with a suffix "R".

11.0 Result Computation Scheme

11.1 The Grade Point Average (GPA) and Cumulative Grade point Average (CGPA) shall be computed according to the following formula:

$$GPA = \sum (GP_x * CH_x) / \sum CH_x$$

x = 1 to n, where n is the number of subjects in the semester for which GPA is computed.

$$CGPA = \sum (GP_y * CH_y) / \sum CH_y$$

y = 1 to m, where m is the number of total subjects covered in all semesters up to the semester for which CGPA is to be computed.

11.2 Credit hours earned for theses graded as "Approved" shall not be counted towards computation of CGPA.

12.0 Theses, "IP" and Award of "W", "WF", "I" Grades,

12.1 **Theses Award and In Progress "IP"**

a) Credit hours registered towards completion of Type C sub-category and Thesis sub-category will be shown as "IP" on the transcript until completion of the respective sub-category. "IP" credits will be counted towards degree credit requirements, but these credits will not be used in computation of GPA/ CGPA.

b) Each portion of a Type C subject spread over two semesters may have been prescribed different nomenclature and different subject code. First portion of such a subject may be graded as "IP" upon completion, if the department decides to award the final letter grade upon completion of the second portion.

c) In case of Type C sub-category grades assigned in the semester in which the subjects are completed will be used in computation of Semester GPA with total credit hours of the subjects being counted for this purpose.

d) Thesis sub-category shall be graded as "Approved" on successful completion and credit hours accumulated for this category will not be used in computation of CGPA.

12.2 **Withdrawal ("W" Grade)**

a) A student may be allowed to withdraw from a subject in which he is registered. Applications (Form 1) to withdraw from a subject shall be entertained latest up to the 6th study week during Fall and Spring semesters and up to 3rd study week during Summer semester. Withdrawn subjects shall appear in the transcript with a letter grade "W" and shall not be used in computation of GPA. In the transcript, subjects repeated after withdrawal will not be suffixed with a "R".

b) If a student withdraws from a subject, which he is repeating, the previous grade earned will be retained in computation of CGPA and in assessing degree completion requirements.

12.3 **Forced Withdrawal ("WF" Grade)**

a) A student registered in a subject may not be permitted to continue due to shortage of attendance or other disciplinary action. Such students shall be awarded a "WF" (Forced Withdrawal) grade. It shall appear in the transcript as such and shall not be used in computation of GPA. Subjects repeated after forced withdrawal will not be suffixed with "R".

b) If a student is withdrawn from a subject, which he is repeating, the previous grade earned will be retained in computation of CGPA and in assessing degree completion requirements.

c) A student who does not drop a subject nor appears in any assessment instrument will not be eligible for "WF" grade and will be awarded a "F" grade.

12.4 **Incomplete "I" Grade**

A student, who because of illness or any other acceptable reason approved, after verification, by the concerned Chairman, fails to complete the required instruments in any subject, shall be awarded an "I" (Incomplete) grade as an interim grade if their attendance is at least 50% in that subject. This grade shall appear in the transcript temporarily until it is replaced by the actual grade and will not be

treated as "F" grade. The student receiving such a grade shall make up the unfinished portion of his subject to the satisfaction of the faculty member who awarded this grade, and is given a letter grade as per regulation 10 at the discretion of the faculty member without prejudice to the previous grade "I". In case, the student fails to complete the unfinished portion within the following semester his "I" grade would be converted to "F" grade by the Controller of Examinations. The responsibility for completing the unfinished portion and satisfying the faculty member lies with the affected student.

13.0 Repetition of Subjects

1. Students are permitted to repeat subjects to improve their grades in a semester within their maximum credit hours registration limit.
2. Separate repetition of Type B part or Type A part of a subject, which is combination of Type A and Type B, is permitted.
3. In case of repetition of a subject, the new grade earned shall replace the previous grade, whether high or low.
4. Alternate elective subject(s) may be studied to improve grade(s) earned in elective subject(s).
5. All subjects studied and their grades will be shown on the transcript. If more than the required number of elective subjects has been studied, then the required number of elective subjects with highest grades will be used in computation of CGPA.

14.0 Separation/ Removal From Rolls

a) Postgraduate students shall be separated from the program:
   i. If they do not register for two subjects during the first semester after their enrollment
   ii. On the recommendation of PGRC, if they fail to register for two consecutive semesters

b) Removal from rolls of Ph.D. students will be governed by the approved Ph.D. regulations.

15.0 Official Authority for Computation of Result

i, Grade Points (GP) in each subject, Semester Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) of each student shall be computed and notified by the Controller of Examinations at the end of each semester.

ii, Provisional results displayed/ communicated to the student in the department after approval of the chairman before publication of official results may be used for deciding removal cases and for registering students for repetition of subjects by the departments.

16.0 Award of Degree

a) Students, who are eligible for the award of degree, are required to submit a Degree Requirements Completion Form (Form-2) to their respective chairman for onward submission to the Controller of Examinations. Degree status would be decided only after receipt of this form.

b) Eighteen years equivalent M.Sc./Master/M.Phil. degree shall be awarded to those students:
   i. Who have earned a minimum CGPA of 2.5 in prescribed course work with no outstanding "F", "W", "WF" or "I" grade in core courses.
   ii. Who have repeated elective subjects in which they have earned "F", "W", "WF" grade, or have taken alternate elective subjects to complete the subjects credit hours requirements.
   iii. Whose thesis, if opted for, has been approved after fulfilling prescribed requirements.
   iv. Whose Design Project, for non-thesis option, has been approved by two faculty members appointed by the Chairman for this purpose.

c) Students deciding to exit the eighteen years equivalent M.Sc./ Masters/ M.Phil. program without completing their thesis shall be awarded the Postgraduate Diploma (PGD) if they complete 24 credit hours of course work fulfilling conditions 16 b(i) and 16 b(ii). The minimum time period requirement for the award of PGD will be one year.

d) Ph.D. degree shall be awarded to those students, who have fulfilled prescribed requirements as stated in Ph.D. regulations.

e) All subjects studied and their grades will be shown on the transcript. If more than the required number of elective subjects has been studied, then the required number of elective subjects with highest grades will be used in computation of CGPA.

17.0 Grade Change Request

A student may submit a Grade Change Request (Form Sem-1) to the Chairman's Office stating the specific reason for change in grade. Grade Change requests must be submitted no later than one week after the first grade was posted or within the first week of the following semester, whichever is later. The request will be submitted to the concerned faculty member. Normally, the only person who can change a grade is the faculty member who gave the grade, however, in case that faculty member is no longer available or cannot be

reached, the department chairman has the authority to evaluate the situation and change a grade, if required. When a grade is to be changed, the chairman shall forward the case to the Dean with justification for change. The result will be modified after approval of the Vice Chancellor on the recommendation of the Dean.

18.0 Students Registration and Hostel Accommodation

a) Regular and casual students may register for subjects being offered during that semester within their maximum permissible credit hours registration limit.
b) The student may add or drop subjects within first two weeks of Fall and Spring semesters and within first week of Summer semester.
c) A student, who is fulfilling requirements of an "I" grade in a semester, is not required to register in the subject in which he has been awarded an "I" grade.
d) Hostel accommodation will be provided to postgraduate students subject to availability of accommodation. Casual students will not be eligible for hostel accommodation. However, foreign casual students may be allowed to continue staying in hostels by the Senior Warden after approval of the Vice Chancellor.

19.0 Deferment of Studies (Freezing)

a) Students enrolled in the first semester cannot apply for deferment.
b) There shall be no relaxation in the maximum degree duration period for students seeking deferment.
c) A student may defer studies for at most two consecutive regular semesters, for medical or other circumstances beyond his control, with summer semester not being counted. In such cases, the student shall apply (Form 4) to the Chairman concerned, at least 15 days before the commencement of the semester, for approval of deferment by the concerned Dean. CAC, after approval, shall notify deferment for a specified period.

20.0 Attendance Requirements

a) Students failing to maintain a minimum attendance of 75% in a subject during a semester shall be awarded a "WF" grade. Chairman in consultation with the respective Dean shall review cases of students seeking relaxation of up to 10% in attendance requirement. The relaxation shall be allowed after approval by the Dean. Any relaxation in excess of 10% shall be forwarded to the Vice Chancellor through the respective Dean for final decision.
b) Leaves availed by a student after approval of the Chairman will not be counted towards attendance.
c) Students eligible for award of an "I" grade will be awarded such a grade only if their attendance is at least 50%.

21.0 Re-Admission Policy

a) A candidate seeking re-admission shall apply to the Vice-Chancellor. The application, duly recommended, will be routed through the PGRC and the Dean. Students Section will prepare the case for approval of the Vice Chancellor.
b) Re-admission, if approved, shall be granted only once.
c) Subjects and examinations of re-admitted students may be exempted/ transferred as provided for in the exemption/ transfer regulations.
d) A re-admitted student shall deposit a clearance certificate from all concerned.
e) Readmitted student will be granted admission as a fresh student and assigned a new registration number. All dues applicable to a freshly admitted students will be applicable.

22.0 Special Provisions

a) In all cases where the regulations are silent, the decision of the Vice Chancellor shall be final.
b) Interpretation of these rules and regulations by authorized officers of the University shall be final.
c) The University authorities reserve the right to make any changes in the existing regulations, rules, fee structure and courses of study that may be considered necessary at any time without prior notice.
d) No student is allowed to maintain simultaneous enrollment in any other program of studies in the University or any other educational institution within or outside Pakistan, unless permitted by the competent authority as an Exchange Student.
e) In case a student enrolled in this University is found to be a regular student of some other University/ institution whether local or foreign, his admission in this University shall be canceled.
f) Students are required to know the rules and regulations mentioned in the prospectus and notified time to time. Ignorance of rules and regulations does not absolve them of their responsibilities and shall not be treated as an excuse.
g) The Vice Chancellor has been authorized by the Syndicate, on the recommendations of the Deans, to make amendments in these regulations and remove any difficulties faced during implementations of these regulations.

EXAMINATION REGULATIONS

1.0 Evaluation Process of Subjects

1.1 Evaluation of Type-A Subjects

i. For mid-term and final examinations of Type-A subjects, the teacher of a subject shall set the question paper of that subject, supervise its examination, mark the answer books and prepare the award list.

ii. Every teacher of Type-A subjects shall return the marked quizzes, assignments, etc. and mid-term examination scripts to the students for review, and in case of presentations etc. display the earned score of each student, within one week of the event. Mid-term scripts, however, would be recovered from the students and deposited with the chairman concerned.

iii. At the end of scheduled teaching period of a semester but before commencement of the final examinations, the teacher shall prepare and display the Interim Award List. Composition, display, correction, and reporting requirements/procedures of Interim Award List shall be as prescribed in these rules.

iv. Teachers would mark the final examination scripts, and prepare and display complete Award List, excluding letter grades, within one week after the examination of the subject.

v. The students may be shown the final examination marked scripts before submission of Comprehensive Award List to the Controller of Examinations, if they so desire.

1.2 Evaluation of Type-B Subjects

i. Teachers of Type-B subjects shall keep all students informed of their performance at every stage in each category of task performed. Immediately after the end of each stage/assessment event, teachers shall prepare and display a list of earned score of each student in that stage/assessment event.

ii. At the end of semester and before the end of examination period, teachers shall prepare and display the Interim Award List. Content and other requirements regarding Interim Award List shall be as prescribed in these rules.

iii. After following the procedures and requirements regarding Interim Award List, the teachers shall prepare and display complete Award List, excluding letter grades, within one week after the end of scheduled teaching period.

1.3 Evaluation of Type-C Subjects

i. Teachers of Type-C subjects shall keep all students informed of their performance at every stage in each category of task performed. Immediately after the end of each stage/assessment event, teachers shall prepare and display a list of earned score of each student in that assessment instrument.

ii. At the end of first of the two semesters of a Type-C subject and before the end of examination period, teachers would prepare and display an Intermediate Award List. This list would be similar to the Comprehensive Award List of Type-A and Type -B subjects except that letter grade of "IP" would be assigned indicating the In-Progress status of the subject.

iii. At the end of second of the two semesters of a Type-C subject and before the end of examination period, teachers shall prepare and display the Interim Award List. Content and other requirements regarding Interim Award List shall be as prescribed in these rules.

iv. Within one week of the conduct of Viva-voce/Jury examination, internal and external examiners shall prepare and display complete Award List excluding the letter grades.

1.4 Interim Award List

i. Interim Award List would show the percentage as well as weighted score of each stage/assessment instrument of that subject including the mid-term examination in case of Type-A subjects.

ii. The Interim Award List will be displayed on the Notice Boards for at least two working days to permit students to point out any anomalies, errors, omissions, etc. in the list.

iii. The teachers shall give due consideration to any anomalies, errors, omissions, etc. in the list pointed out by any student and may correct the list.

iv. Any further processing of the list shall be carried out only after it has been displayed on the Notice Boards for the mandatory period and decisions regarding all matters pointed out by students have been taken.

1.5 Comprehensive Award List

The Comprehensive Award List shall show, for each student:

i. The weighted combination of the Interim Award and Final

Examination award in percentage format and Letter Grades corresponding to the comprehensive award.

ii. Sealed Comprehensive Award List will be sent to the Controller by the concerned teacher with a copy to the Chairman for record only.

1.6 **Thesis Sub Category Evaluation**

a) Ph.D. thesis evaluation would be processed as per approved prescribed regulations for the purpose.

b) Eighteen Years M.Sc. /Master/M.Phil. theses evaluation process would be followed as prescribed below:

i. The External Examiner for the thesis shall be appointed by the Vice Chancellor on the recommendation of the PGRC/Dean of the relevant Department from a panel of proposed external examiners.

ii. The Final Report on the Thesis and Viva Voce Examination by the Examiners shall be submitted on the prescribed proforma.

iii. In case there is a difference of opinion between the Examiners, the Vice-Chancellor, shall appoint a third Examiner on the recommendations of the Board of Postgraduate Studies of the department, whose opinion shall be final.

iv. If a candidate, whose thesis has not been approved, is permitted to revise his thesis, he must submit the revised thesis for evaluation not later than six months from the announcement of the decision requiring him to revise the thesis.

2.0 Conduct of Examination of Type A Subjects Under Semester System

2.1 **Question Papers**

i. All question papers are set by the concerned teacher.

ii. The paper setters, who also ensure their correctness, supervise the photocopying or duplicating of the papers.

iii. Question papers are kept in the safe custody of the teacher till the start of examination. He shall bear legal and moral responsibility for the safe custody and secrecy of the question papers.

2.2 **Reference Material during Tests/ Examinations**

Prior to class tests, mid term/final examination, the subject teacher announces such books, notes or other material that can be referred to by the students during the test or examinations. All other books, notes, papers, etc., are withdrawn from the examinees.

2.3 **Examination Schedule**

The Chairman of the department publishes the mid term and final examination schedule at least two weeks before start of the examinations in accordance with the University academic calendar.

2.4 **Conduct of Mid-Term and Final Examinations**

The subject teacher shall be the Superintendent for the conduct of examination. The chairman shall depute teachers or staff as Deputy Superintendent and Invigilators for the conduct of examinations. The Superintendent shall ensure the following:

i. That all answer books used in the examination are signed or initialed. The teacher may require the students to answer on the question paper itself. No other answer books are to be used in this cases.

ii. Answer books are issued to the invigilators 5 minutes before the commencement of the examination and retrieved at the end of the examination.

iii. The absentee report, if any, is prepared and forwarded to the Chairman's office at the end of each examination.

2.5 **Teachers or Staff acting as invigilators are detailed by the respective Chairman. They ensure the following:**

i. That the students are identified through means such as University identification card.

ii. That the students are warned against the use of unfair means and have been advised to surrender mobile phones, notes, papers or other unauthorized material before the commencement of the examination.

iii. That the students are not allowed to talk with or copy from other students during the examination.

iv. That no student is allowed to join the examination 30 minutes after its commencement.

v. That no student is allowed to submit the answer sheet and leave the examination room within 30 minutes of commencement of examination. Visits to toilets are carefully controlled.

vi. That the question papers and answer books of a student detected using unfair means or assisting another candidate, are taken away and the matter is reported to the Controller of Examinations through respective chairman. The superintendent records all available evidence to be used as written proof later on.

vii. That the students write their registration numbers, name and class on the front cover of each additional answer

sheet used. If more than one answer book is used, these are stapled together.

2.6 **The subject teachers, being the Superintendent(s), shall:**

i. Supervise distribution of the question papers to the students according to the schedule published.

ii. Be available in the examination center during examination of their subject to clarify any query and to collect answer books after the examination. In case of multiple examination centers, they must remain available near the centers.

iii. Report any incidence of unfair means or disobedience or rowdyism detected in the examination center to the Controller of Examinations for processing under rules governing use of unfair means during examinations. The report must include collected evidence (if any), written and signed statement by the invigilator detecting the incidence and of the candidate(s) found involved.

3.0 Disposal of Answer Scripts

Answer sheets of mid term and final examinations will be stored in the respective department for one semester after declaration of result of a semester. The sheets would be disposed off subsequently in a suitable manner as decided by the concerned Chairman**.**

4.0 Migration into Postgraduate Programs

No migration is permitted into any of the postgraduate programs. Candidates are required to apply afresh, fulfilling all the requirements laid down by the University in this regard, into the program they are aspiring to undertake. Admission shall be based on merit as per the admission policy.

5.0 Transfer of Subjects

Subjects may be transferred on the recommendations of the PGRC and Dean of the concerned department/faculty to students admitted in the postgraduate program, subject to the following conditions:

a) That the subject has been studied at an HEC recognized institution within last five years from the date of admission.

b) The subject under consideration has not been given credit towards award of a degree.

c) The subject must correspond to a subject currently offered by the concerned department or be deemed equivalent in depth and intensity to a current subject.

d) The student must have earned at least "60%" marks in case of term/annual system or a minimum of CGPA 3.0 out of 4.0 in a semester system similar to the one in this University, in the subject, for determining transfer of M.Sc./ M.Phil. subjects.

e) The student must have earned at least "70%" marks in case of term/annual system or a minimum of CGPA 3.3 out of 4.0 in a semester system similar to the one in this University, in the subject, for determining transfer of Ph.D. subjects.

f) The credits transferred shall be counted towards the degree requirements of the student. However, GPA of transferred credits shall not be counted towards the calculation of CGPA, and that only "Transferred" shall be written against those subject(s) in which transfer of credits was allowed.

g) A maximum of 9 credit hours of subjects can only be transferred in case of M.Sc/ M.Phil. students and 6 credit hours of subjects only for Ph.D. students.

6.0 Final Transcript Issued by Examination Branch

Examination Branch will issue a final transcript after the student completes all the degree requirements. The recording of result on final transcript will be according to the following:

a) The transcript will be chronological showing all subjects registered in each semester and corresponding grades earned.

b) All "I" grades would be replaced by the grade earned or "F" grade if requirements have not been completed.

c) "IP" grade in a subject or sequel of subjects would be shown in the semester(s) in which it has been awarded. It will not be counted towards computation of GPA or CGPA in these semesters.

d) The semester grade awarded in a subject, which is a followup of a subject or subjects in which "IP" has been awarded in previous semesters, would be counted towards computation of semester GPA and CGPA by considering the total credit hours assigned to the subject or a sequel of subjects.

e) Elective subjects in which the student has earned "F" grades may not be counted towards computation of CGPA if alternate elective subjects have been studied in their place. This will not be automatic. The student must apply to the Controller Examination to avail this facility.

7.0 Results Declaration by Examination Branch

The student would be able to see his subject grades on the Examination portal as soon as those have been submitted by the teachers to the CoE. The status of these results would be "Provisional". When all results have been received by the Branch, official results would be declared within one week following due process of scrutiny and verification. The status of these results would change to "Confirmed" after declaration.

VISITING STUDENTS POLICY

1. Visiting students are classified as students currently admitted into a B.Sc (4 years), M.Sc/ M.Phil. (18 years) or Ph.D. program of any university within or outside Pakistan and enrolled for one semester only to study selected subjects at UET Lahore. Registration in a maximum of five courses by any individual student at undergraduate level and two courses at postgraduate level is permissible.

2. The candidates desiring to study one or more subjects in any department of UET shall apply directly to the Chairman concerned at least 15 days before commencement of a Semester/Term. The Chairman, after discussion with the concerned teacher, may approve or reject the request. In case the request is accepted by the Chairman, it will be forwarded to the respective Dean. The Dean after due deliberation may accept or reject the request. In case of acceptance by the Dean, the request will be forwarded to CAC for further action.

3. CAC shall issue a registration number to the student after submission of (a) total dues, (b) matriculation or equivalent certificate and (c) a No Objection Certificate from the parent university of the applicant. A folder shall be opened in the Students Section and a notification shall be issued with copies to Controller, Treasurer, concerned Dean and Chairperson of the department, and to the Security Office.

4. The registration number shall be of the following nomenclature:
   YYYY-PP-DD-V-XX where
   - YYYY: Year of application like 2012, 2013 etc.
   - PP: Program like B.Sc., MS, M.Phil. or Ph.D.
   - DD: Department like EE, Civil, ME etc
   - V: Shall be written as such indicating Visiting Status
   - XX: Two digit Integer number starting from 10.

5. The Visiting student shall be issued the University ID temporary card but he shall not be eligible for any benefit admissible to regular students of the university like hostels, library, sports facility, etc. He shall have the pay all dues in advance and shall not be eligible for financial assistance or installments facility. Any dues once paid shall be non-refundable.

6. The student shall be governed by all rules regarding academics and discipline.

7. Studentship of a Visiting student shall end on completion of the Semester in which he is registered in a course. Second time registration as a Visiting student is not permissible.

8. Examination Branch shall include his name in the student record of the concerned department facilitating his registration and issuance of DMC / Transcript on completion of the said subject. Examination record shall be maintained for any future reference.

9. Fee structure is given below:
   - Registration Fee: Rs 5,000.00
   - Fee per Course Including any laboratory if applicable: Rs 20,000.00 (UG) /Rs 25,000.00 (PG)

Every student must observe the following Code of Honour

CODE OF HONOUR

1. He must be loyal, faithful in his religious duties and respect the conviction of others in matters of religion.
2. He must be loyal to his country and refrain from doing anything which might lower its honour and prestige.
3. He must be truthful and honest in dealings with all people.
4. He must respect the elders and be polite to all, especially women, children, old people, the weak and helpless.
5. He must respect his teachers and others in authority in the University.
6. He must keep clean in all respects i.e. body, mind, speech, sport and habits.
7. He must help his fellow beings especially those in distress.
8. He must devote himself faithfully to his studies.
9. He must observe thrift and protect property.

PROHIBITION OF SMOKING AND PROTECTION OF NON-SMOKERS HEALTH ORDINACE 2002

The University requires adherence to the Prohibition of Smoking and Protection of Non-smokers Health Ordinance 2002. As such, smoking is stricktly prohibited at all open and closed places within university premises and in university's transport.

ACTS OF INDISCIPLINE PUNISHABLE UNDER UNIVERSITY RULES

1. **No Student shall:**
   i. Smoke in the class room, laboratory, workshop, library,

examination hall, convocation hall and during studio work or academic functions.

ii. Consume alcoholic liquor or other intoxicating drugs within the University Campus or a hall of residence 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.

iii. Organize or take part in any function within the University campus or a hall of residence, organize any club or society of students except in accordance with the prescribed rules and regulations.

iv. Collect any money or receive donations or pecuniary assistance for or on behalf of the University or any University organization except with the written permission of the Vice Chancellor.

v. Stage, incite or participate in any walkout, strike or other form of agitation against the University or its teachers and officers.

2. **A Student Who:**

a) Commits a breach of any of the rules of conduct specified in these regulations, or

b) Disobeys the lawful order of a teacher or other person in authority in the University, or

c) Habitually neglects his work or habitually absents himself from his classes without reasonable cause, or

d) Willfully damages University property or the property of a fellow student or any teacher or employee of the University; or

e) Does not pay the fees, fines or other dues levied under the University ordinances rules and regulations, or

f) Does not comply with the rules relating to residence in the hostels or halls of residence or the rules relating to the wearing of uniform or academic dress, 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 within the University campus or otherwise which is prejudicial to the interest of the University.

Shall be guilty of an act of indiscipline and shall be liable for each such act to one or more of the penalties under the General Discipline Rules.

AUTHORITIES TO CHECK INDISCIPLINE

1. **Every Member of the Teaching Staff shall:**
Have the powers and it shall be his duty to check disorderly or improper conduct or any breach of the rules by students occurring in any part of the precincts of the University. Should such misconduct occur in room when the student is under the charge of a demonstrator, the latter shall report the matter without delay to the Chairman of the Department.

2. **The Librarian shall:**
Be responsible for maintenance of order in the Library. In case of disorderly conduct or any breach of rules, he may require the student so offending to withdraw from the library for the remainder of the day and shall immediately report the offence to the Chairman of the Library Committee.

3. **The Senior Warden/Warden and the Resident Tutor shall:**
Be responsible for maintenance of order among the students in halls of residence or hostels.

4. **The Director of Physical Education shall:**
Be responsible for the maintenance of order among the students on or near the play grounds or while otherwise under his charge.

5. **Committee of Discipline:**

There is a Committee of Discipline to deal with serious cases of indiscipline. It consists of the following members as per University of Engineering an Technology, Punjab Act V of 1974:

(a) Chairman to be nominated by the Vice-Chancellor
(b) Two Professors to be nominated by the Academic Council
(c) One member to be nominated by the Syndicate
(d) Director Students Affairs (Member/Secretary)
(e) Senior Tutor of the University; and
(f) Senior Warden of the University Hostels

I. The term of office of members of the Committee excluding ex-officio members shall be two years

ii. The quorum for a meeting of the Committee of Discipline shall be four members

The functions of this Committee are:

- to propose Regulations to the Academic Council for the conduct of University Students, Maintenance of Discipline and breach of discipline; and
- to perform such other functions as may be prescribed by Regulations

PENALTIES FOR ACTS OF INDISCIPLINE

The penalty or penalties imposed shall be appropriate and proportioned to the nature and gravity of the Act. The penalties which may be imposed and the authority or authorities competent to impose each kind of penalty are specified below:

	PENALTY	AUTHORITY COMPETENT TO IMPOSE THE PENALTY
a)	Exclusion for class room, Laboratory, Workshop or field work for the periods concerned, for not more than four such consecutive periods	Teacher Incharge
b)	Exclusion from the game or the Field for not more than one week	Incharge of the Game
c)	Exclusion from Instructional or Sports Tour or Survey Camp	Teacher Incharge or Head of Department / Chairman
d)	Exclusion from the Department for a period not exceeding two weeks	Head of Department / Chairman
e)	Exclusion from the Library for not more than two weeks	Chairman, Library Committee
f)	Exclusion from all classes or any Class in any Faculty for a period not exceeding two weeks	Dean of the Faculty
g)	Exclusion from the Hall of residence for a period not exceeding six months	Resident Tutor
h)	Exclusion form the Hall of residence for a period not exceeding one year	Senior Warden / Warden / Director Students Affairs
i)	Suspension or removal from a position of authority in a Hall of Residence	Resident Tutor / Warden / Senior Warden
j)	Suspension or removal from a position of authority in the Students Union	Director, Students Affairs
k)	Suspension or removal from a position of authority in the University Sports	President Sports committee
l)	Cancellation or Remission of fee or University Scholarship	Dean of the Faculty
m)	Fine upto Rs. 1,000/-	Lecturer / Resident Tutor
n)	Fine upto Rs. 2,000/-	Assistant Professor / Warden
o)	Fine upto Rs. 3,000/-	Associate Professor
p)	Fine upto Rs. 5,000/-	Chairman of Teaching Department/ Professor / Senior Warden / Director tudents Affairs.
q)	Fine without limit	Dean of the Faculty
r)	Rustication from the University for a period not exceeding six months	Associate Professor
s)	Rustication from the University for a period not exceeding one year	Chairman of a Teaching Department / Professor / Committee of Discipline
t)	Rustication for any period	Dean of Faculty
u)	Expulsion from the University	Committee of Discipline

GENERAL DISCIPLINE RULES RELATING TO STUDENTS

1. When a case against a student is referred to the Committee of Discipline, the Committee may, if it deem fit, suspend the student from University Rolls and / or direct him to vacate the Hall of Residence till it has taken a decision in the case.

2. The Vice Chancellor shall have the power to impose any of the penalties mentioned in "Penalties for Acts of Indiscipline" or to refer any case to the Committee of Discipline.

3. A Teacher or officer mentioned in "Penalties for Acts of Indiscipline" in whose presence or in relation to whom an act of indiscipline is committed or who obtains knowledge of such act on a report or otherwise, may deal with the case himself or if in his view:
   a) the case is one which can be more appropriately dealt with by another authority; or
   b) a penalty or penalties severer than those which he is competent to impose are called for in the case; he shall follow the procedure specified below:
      i. If he is not the Dean of the faculty he shall refer the case to the Dean who may deal with it himself or refer it to the appropriate authority.
      ii. If he is the Dean of the Faculty, he shall refer it to the appropriate authority or the Committee of Discipline.

4. No Student shall be rusticated or expelled from the University, unless he has been allowed reasonable chance of replying to the accusation against him.

5. When in the opinion of the Committee of Discipline, the penalty of rustication or expulsion is not called for in a case referred to it, it may impose any other penalties mentioned in "Penalties for Acts of Indiscipline".

6. When a Teacher or an Officer has imposed penalty/penalties on a student under "Penalties for Acts of Indiscipline", the later shall not be liable to a higher or an additional penalty unless the offending student has been given a reasonable opportunity of showing cause against the proposed action.

7. An appeal against the imposition of penalty may be made within a week's time to the teacher who imposed the penalty. In case the student is not satisfied with his decision/revision he may appeal to the Chairman, Discipline Committee who shall place it before the Discipline Committee for its consideration and decision within a maximum of six weeks to dispose of the case. A final appeal against the imposition of penalty may then be made to the Committee as provided in Rule 11(i) of the General Discipline rules relating to students.

8. An appeal against a decision imposing a penalty mentioned in clauses (r) and (s) of "Penalties for Acts of Indiscipline" shall lie with a Committee consisting of the Vice Chancellor and the Deans of Faculties. No appeal shall lie against a decision of an authority imposing a penalty other than that mentioned in sub-rule (i) of this rule except on the ground that such authority has imposed a penalty which it was not competent to impose.

9. An appeal on the ground that an authority has imposed a penalty which it was not competent to impose shall lie to the Vice Chancellor. No appeal by a student shall be entertained, unless it is presented within fifteen days from the date on which the decision is communicated to him provided that the Vice Chancellor may for valid reason extent this period.

10. The Vice Chancellor or any teacher or officer to whom the Vice-Chancellor may delegate his powers may direct a student to pay compensation for any loss of or damage to property belonging to the University or fellow student or to an employee of the University, caused by a willful act or gross negligence of the student and if the student does not pay such compensation within a reasonable time, the Vice-Chancellor may expel him from the University.

11. The Syndicate may for special reason re-admit a student rusticated or expelled from the university under these rules, if otherwise eligible.

FEE REGULATIONS

1. Periods of fees and Other Charges

a) The fees and other charges are categorized as:
   - One-time payments at the time of admission.
   - Semester recurring fees.

b) During each year of a student's stay at the University, all recurring fees are charged in two instalments payable at beginning of Fall and Spring semesters.

c) Additional registration fee at the rate of Rs 3,000/- per credit hour will be charged for subjects registered during the summer semester.

d) A minimum of 4 semesters recurring fees are admissible to students enrolled in M.Sc./ M.Phil./ M.S. programs. However, students completing their degree requirements in contiguous three semesters will not be charged for the 4th semester.

e) Semester recurring fees will not be charged from students enrolled full-time in the Ph.D. program. In lieu of the fee waiver the students will be required to work for at least six hours per week and in this context may be offered Teaching Fellowship on the recommendation of the respective department after approval of their Ph.D. research proposal. To qualify for this stipend the CGPA, in graduate course work, should at least be 3.50 on a scale of 4.0 and this scholarship will be awarded for at most two years.

f) Students will be charged full fees for semesters in which they register in subject(s) other than the thesis.

g) Students who do not register in subjects or have deferred their studies or have registered in the Thesis during a semester will only be charged retention fee of Rs 15,000/- during that semester. This fee will be over and above the minimum admissible recurring fees.

h) The hostel charges are payable for the period of allotment, a part of semester being counted as full semester. Rent and electricity charges for fans are payable for six months. Electricity charges for room heaters are payable for the winter season for four months.

2. Refund on Admission Cancellation

2.1 Admission Cancellation by Freshly Admitted Students

All dues paid by the student are refundable excluding the Admission Fee as per the following schedule:

a) Full (100%) fee refund if admission cancelled up to 7th day.

b) Half (50%) fee refund if admission cancelled from 7th to 15th day.

c) No fee refund if admission cancelled from 16th day onward.

The count of days mentioned in the schedule for determining refund amount, would start from the date falling last from either (i) the date of convening of classes; or (ii) the date of initiation of registration by the university; or (iii) the date of payment of admission dues by the student in the bank.

2.2 **Admission Cancellation by Other Students**

The University security, library security, hostel security and mess securities are refunded when a student cancels his admission before completion of his degree. The interest free loan amount deposited, over and above the tuition fee, by the candidate would be refunded after deduction for months availed at the University. For the purpose of counting availed months, a portion of a month shall be counted as one full month.

3. Refund of Securities

The University security, library security, hostel security and mess securities are refunded when a student leaves the University after completion of his degree or the hostel (in case of mess security) after deduction of outstanding dues of the University, library or the hostel, respectively.

4. Revision of Tuition Fees Rates

a) The fee and other charges schedule published in the prospectus each year will be applicable to the entry session of that year.

b) To account for inflation, upto 12% increase in tuition fee and other charges will be incorporated each year.

5. Recovery from Ph.D. External Scholarship Holders

Ph.D. students awarded scholarship by an external agency will be charged full fee beyond the minimum admissible period of six semesters until they graduate. This fee will be recovered from the amount received from the external agency for disbursement. In case, this scholarship is discontinued after the minimum admissible period, then only retention fee of Rs 15,000/- per semester will be charged from the students.

MORNING PROGRAMS
FEE AND EXPENSES

I	**NON RECURRING FEES** (Payable at the time of admission)	
1	Admission Fee	10,000
2	University Registration Fee	4,000
3	University Security (Refundable)	1,000
4	Hostel Security (Refundable)	2,000
5	Library Security (Refundable)	1,000
6	Verification Fee	2,000
7	Email Registration Fee	200
8	University Student Identity Card	500
II	**SEMESTER RECURRING FEE**	
1.	Inter-University Tournament Fee	100
2.	Magazine Fee	150
3.	Medical Fee	500
4.	Tuition Fee	60,000
5.	Examination Charges	1,200
6.	Recreation / Sports Fee	600
7.	Tennis/ Squash Club Fees for Student Members only	2,000
8.	Facilities Charges	3,000 for day scholars/ 1,500 for hostel residents
9.	Internet Charges	1,800
10.	Summer Semester Subject Registration Fee	3,000 per credit hour
III	**SEMESTER HOSTEL CHARGES**	
1	Room Rent (Cubical)	4,000
2	Room Rent (Dormitory)	2,000
3	Fan Rent (Cubical)	400
4	Fan Rent (Bi-seater)	300
5	Fan Rent (Dormitory)	100
6	Electricity Charges (Fans) Cubical/ Dormitory. Summer season only	1,500/ 1,200
7	Electricity Charges (Lights) Cubical/ Dormitory	1,500 / 1,200
8	Sui Gas Charges	650
9	Consolidated Summer Semester Charges (July & August)	6,000

WEEKEND PROGRAMS
FEE AND EXPENSES

1. NON-RECURRING FEES (Payable at the time of admission)

1.	Admission Fee	10,000
2.	University Registration Fee	6,000
3.	University Security (Refundable)	1,000
4.	Library Security (Refundable)	1,000
5.	Verification Fee	2,000
6.	Email Registration Fee	200
7.	University Student Identity Card	500

2. SEMESTER RECURRING FEES

1.	Tuition Fee	90,000
2.	Other Charges	6,150
3.	Tuition Fee beyond 3rd Semester	45,000

Collection of Advance Tax by Educational Institutes

As per Finance Act 2020, UET Lahore is bound to withhold advance Income Tax from non-filers of Income tax on amount of fee (inclusive of tuition and all charges) exceeding Rs 200,000/- per annum at the rate of 5% of the total amount. This tax is charged in the dues challan of Spring semester each year. Students whose guardians are residing abroad or are included in Active Tax Payers list may submit documentary evidence to get waiver from this advance tax.

IMPORTANT CONTACT INFORMATION

DESIGNATION	OFFICE	E-MAIL
VICE CHANCELLOR	042-99250201	vc@uet.edu.pk
	042-99029205	
	042-99250202 Fax	
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Faculty of Electrical Engineering	042-99029234	deanee@uet.edu.pk
Faculty of Mechanical Engineering	042-99029221	deanmech@uet.edu.pk
Faculty of Civil Engineering	042-99029222	deancivil@uet.edu.pk
Faculty of Chemical, Mineral and Metallurgical Engineering	042-99029230	deancmme@uet.edu.pk
Faculty of Architecture & Planning	042-99029250	deanarch@uet.edu.pk
Faculty of NaturalSciences, Humanities and Islamic Studies	042-99029215	deannshis@uet.edu.pk
CHAIRPERSONS OF TEACHING DEPARTMENTS		
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Architecture Engineering & Design	042-99029419	chairmanaed@uet.edu.pk
Chemical Engineering	042-99029488	chairmanchemical@uet.edu.pk
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Mining Engineering	042-99029212	chairmanmining@uet.edu.pk
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Polymer & Processing Engineering	042-99029505	chairmanpolymer@uet.edu.pk
Transportion Engineering & Management	042-99029428	Chair-tem@uet.edu.pk
Product & Industrial Design	042-99029203	chairmanpid@uet.edu.pk
HEADS OF NON TEACHING DEPARTMENTS		
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Dirctor Finanacial Aid & Career Services	042-99029218	facs@uet.edu.pk
ChairmanTransport Committee	042-99029266	ctc@uet.edu.pk
Chief Medical Officer	042-99029240	cmo@uet.edu.pk
Controller of Examinations	042-99029235	examination@uet.edu.pk
Convener Admission Committee / Incharge Student Section/	042-99029216	admission@uet.edu.pk
International Students Office	042-99250212	drsaleemkhan@uet.edu.pk
Director General Research Ext & Advisory Services	042-99029237	mtahir@uet.edu.pk
Director Studies	042-99029251	Dir.studies@uet.edu.pk
Director Students Affairs	042-99029244	dsa@uet.edu.pk
Focal Person Higher Education Commission	042-99029144	hecfocalperson@uet.edu.pk
Librarian	042-99029243	lib@uet.edu.pk
Project Director	042-99029238	pd@uet.edu.pk
Public Relation Officer	042-99029358	pro@uet.edu.pk
Registrar	042-99029227	registrar@uet.edu.pk
Resident Auditor	042-99029232	ra@uet.edu.pk
Senior Warden	042-99029225	seniorw@uet.edu.pk
Treasurer	042-99029233	treasurer@uet.edu.pk

Thank You

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DISCLAIMER

The contents of this prospectus are for information and shall NOT be taken as binding on the University. Each aspect of the education set up, like admission procedure or criteria, academic rules and regulations, discipline regulations, admissible fees, etc. requires continuous review by the competent authorities. The University therefore reserves the right to change rules, regulations, fees applicable, etc. to students whenever it is deemed appropriate or necessary. Inquiries concerning admission should be addressed to:

Convener Admission Committee
UNIVERSITY OF ENGINEERING AND TECHNOLOGY
G.T. Road, Lahore - 54890, PAKISTAN.
Telephone: +92 42 99029216, +92 42 99029452
E-mail: admission@uet.edu.pk

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