In the Name of Allah,
the Most Beneficent, the Most Merciful
When students hear that D. H. Lawrence claimed that education should aim to “lead the individual nature in each man and woman to its true fullness,” that for Rousseau the aim of education was “to come into accord with the teaching of nature,” that R. M. Hutchins saw the aim of education as “cultivation of intellect,” that A. S. Neil believed the aim of education should be to “make people happier, more secure, less neurotic, less prejudiced,” and that John Locke claimed “education must aim at virtue and teach man to deny his desire, inclinations and appetite, and follow as reason directs”; hopefully the penny was dropped. (Harris, 1999, p.1) This is not all; one could find hundreds of such famous and philosophers who have articulated their thoughts as aims of education. Same will be true for goals, missions, objectives, and purpose of education. Similar diversity in the thoughts will be observed if education is further specified as basic education, science and technical education, secondary and tertiary education. I am not striving for a definition of aim, goal, mission, purpose or objective of educations which is close to my thinking but what we at University of Engineering and Technology Taxila are and what the students shall expect after entering this University and the expectations that we will have during his/her stay at the university and throughout his professional life as alumni. The University is about people, their lives, their growth, their needs and their welfare as such to understand the genesis of the University; the University may be looked at as a large self contained social system. The prime activity at the Universities is about knowledge, education, research and discovery at various levels and in various directions and dimensions where the interaction breeds and feeds learning, as such a modern University may be considered a large learning echo system – that is our understanding of University of Engineering and Technology, Taxila. At the University of Engineering and Technology Taxila the student will experience an academic environment and research culture that will accelerate the learning process of our students and help them broaden their conceptualization and learning reach about principles, practices in their chosen field of engineering education. During their stay the students will develop articulated way of discovering new and unknown, to expand the horizon and enable them to contribute professionally to the advancement of human race and civility in their upbringing. For us student, faculty, learning environment and society are the core elements of UET Taxila echo system: University commits itself to provide maximal opportunities for intellectual and creative development. We at UET Taxila are committed to provide our students, opportunities to learn through inquiry and research rather than simple transmission of knowledge, training in the skills necessary for oral and written communication at the level that will serve the student both within the university and in postgraduate professional and personal life, appreciation of art, humanities, sciences, and social sciences and the opportunity to experience at any intensity and depth the student can accommodate. We also are mindful of careful and comprehensive preparation of students for whatever may lie beyond their graduation, whether it is the graduate school, professional school or first professional position. The student at this university can also expect opportunity to work with talented senior researchers who will help and guide their efforts, access to first class facilities in which to pursue education and research – laboratories, libraries, studios, computer systems and residential halls. Many options among engineering fields of study and directions to move within those fields are available, including areas and choices not found in general universities, and opportunities to interact with people of backgrounds cultures and experiences different from the student’s own and with pursuers of knowledge at every level of accomplishment, from first year students to senior research faculty. While we provide limitless opportunities to our students we also have expectations from students what have the privilege to be inducted in undergraduate engineering disciplines. We want our students to respect for the rights, differences, and dignity of others, honesty and integrity in all dealings, conscientious pursuit of excellence in one’s work and accountability for actions and conduct in the university, respect for freedom of thought and expression during their stay and throughout their professional life. This document provides you with information about the University, its programs, areas of teaching and research, faculty, facilities – how you can enter in this University, spend your undergraduate years, and what will be expected from you during your stay. Thank you for considering University of Engineering and Technology, Taxila for testing your limits, your aspirations to be together with us, and putting brilliant ideas to better realities.
Disclaimer

This prospectus is informational and should not be taken as binding on the University. Each aspect of the educational setup, from the admission procedure or criteria to the examination regulations or discipline, requires continuing review by the competent authorities. The university therefore reserves the right to change any rules and regulations applicable to students whenever it is deemed appropriate or necessary.
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Chancellor: Sardar Muhammad Latif Khosa
Governor of the Punjab

Pro-Chancellor: Mian Mujtaba Shuja-ur-Rehman
Minister for Education, Punjab

Vice Chancellor: Dr. Muhammad Abbas Choudhary

Registrar: Prof. Aziz-ur-Rehman

Controller of Examinations: Mr. Mahmood Akhtar

Treasurer: Mr. Muhammad Ashraf

Director Admin & Security: Brig (R) Muneer Ahmed

Director Academics: Brig (R) Muhammad Saeed Akhtar Malik

Librarian: Mr. Muhammad Anwar

Deans of Faculties

Faculty of Civil and Environmental Engineering: Prof. Dr. Mumtaz Ahmad Kamal
Faculty of Electronics and Electrical Engineering: Prof. Dr. Ahmad Khalil Khan
Faculty of Mechanical and Aeronautical Engineering: Prof. Dr. Shahab Khushnood
Faculty of Telecommunication and Information Engineering: Prof. Dr. Adeel Akram
Faculty of Industrial Engineering & Management Sciences: Prof. Dr. Shahab Khushnood

Chairmen of Academic Departments

Department of Civil Engineering: Prof. Dr. Hashim Nisar Hashmi
Department of Computer Engineering: Prof. Dr. Muhammad Iram Baig
Department of Electrical Engineering: Prof. Dr. Tahir Nadeem Malik
Department of Mechanical Engineering: Prof. Khawaja Sajid Bashir
Department of Software Engineering: Dr. Tabassam Nawaz
Department of Telecommunication Engineering: Prof. Dr. Muhammad Khawar Islam
Department of Electronic Engineering: Prof. Dr. Muhammad Zafarullah
Department of Industrial Engineering & Management Sciences: Prof. Rafi Javed
Department of Environmental Engineering: Prof. Dr. Saeed Ahmed

Directors of Postgraduate Studies

Department of Civil Engineering: Prof. Dr. Liaqat Ali Qureshi
Department of Mechanical Engineering: Dr. Riffat Asim Pasha
Department of Electrical Engineering: Dr. Gulistan Raja
Department of Computer/Software/Telecommunication Engineering: Dr. Hafiz Adnan Habib
Department of Industrial Engineering & Management Sciences: Engr. Turab Haider
# SERVICES AND COMMON FACILITIES

### Chairmen of Committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Chairman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>Prof. Dr. Aftab Ahmad</td>
</tr>
<tr>
<td>Library</td>
<td>Prof. Rafi Javed</td>
</tr>
<tr>
<td>Transport</td>
<td>Prof. Dr. Mohammad Ahmad Choudhry</td>
</tr>
<tr>
<td>Sports</td>
<td>Prof. Dr. Muhammad Zafrullah</td>
</tr>
<tr>
<td>Masajid</td>
<td>Prof. Dr. Muhammad Iram Baig</td>
</tr>
<tr>
<td>Time Table</td>
<td>Prof. Sagheer Ahmad</td>
</tr>
<tr>
<td>Discipline</td>
<td>Prof. Dr. Mumtaz Ahmad Kamal</td>
</tr>
<tr>
<td>Affiliation Committee</td>
<td>Prof. Dr. Shahab Khushnood</td>
</tr>
<tr>
<td>House Allotment Committee</td>
<td>Prof. Dr. Ahmad Khalil Khan</td>
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</table>

### Health Clinic

<table>
<thead>
<tr>
<th>Position</th>
<th>Person</th>
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<tbody>
<tr>
<td>Chief Medical Officer</td>
<td>Dr. Ali Akhter</td>
</tr>
<tr>
<td>Senior Medical Officer</td>
<td>Dr. Shaheen Sughra</td>
</tr>
<tr>
<td>Medical Officer</td>
<td>Dr. Muhammad Arif Nadeem</td>
</tr>
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### Library

<table>
<thead>
<tr>
<th>Position</th>
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<tbody>
<tr>
<td>Asstt. Librarian (Evening)</td>
<td>Syed Mahmood Ali Zaidi</td>
</tr>
<tr>
<td>Asstt. Librarian (Morning)</td>
<td>Mr. Muhammad Mushtaq Khan</td>
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### Sports

<table>
<thead>
<tr>
<th>Position</th>
<th>Person</th>
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<tbody>
<tr>
<td>Director Physical Education (Male)</td>
<td>Mr. Muhammad Akmal Hussain</td>
</tr>
<tr>
<td>Assistant Director Physical Education (Female)</td>
<td>Miss Shamsa Ghafoor</td>
</tr>
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</table>

### Transport

<table>
<thead>
<tr>
<th>Position</th>
<th>Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistant Registrar</td>
<td>Mr. Muhammad Nawaz</td>
</tr>
</tbody>
</table>

### Estate Office

<table>
<thead>
<tr>
<th>Position</th>
<th>Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director Arboriculture &amp; Land Management</td>
<td>Brig (R) Muneer Ahmed</td>
</tr>
<tr>
<td>Estate Officer</td>
<td>Brig (R) Muneer Ahmed</td>
</tr>
</tbody>
</table>

### Halls of Residence

<table>
<thead>
<tr>
<th>Halls of Residence</th>
<th>Senior Warden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Warden</td>
<td>Prof. Dr. Mohammad Ahmad Choudhry</td>
</tr>
<tr>
<td>Warden (Male)</td>
<td>Engr. Zahid Suleman Butt</td>
</tr>
<tr>
<td>Warden (Female)</td>
<td>Mrs. Nuzhat Yasmeen</td>
</tr>
<tr>
<td>Resident Tutor 1 – Iqbal (I) Hall</td>
<td>Mr. Nadeem Majeed Ch.</td>
</tr>
<tr>
<td>Resident Tutor 2 – Iqbal (I) Hall</td>
<td>Engr. Waheed Mushtaq</td>
</tr>
<tr>
<td>Resident Tutor 1 – Quaid-e-Azam (Q) Hall</td>
<td>Engr. M. Asjad Saleem</td>
</tr>
<tr>
<td>Resident Tutor 2 – Quaid-e-Azam (Q) Hall</td>
<td>Engr. Atta-ur-Rehman</td>
</tr>
<tr>
<td>Resident Tutor 1 – Abu Bakar (AB) Hall</td>
<td>Engr. Syed Turab Hayder</td>
</tr>
<tr>
<td>Resident Tutor 2 – Abu Bakar (AB) Hall</td>
<td>Mr. Ishtiaq Ahmad</td>
</tr>
<tr>
<td>Resident Tutor 1 – Omar &amp; Usman Hall</td>
<td>Engr. Salman Amin</td>
</tr>
<tr>
<td>Resident Tutor 1 – Ali Hall</td>
<td>Engr. Mubashir Ayub</td>
</tr>
<tr>
<td>Resident Tutor 2 – Ali Hall</td>
<td>Engr. Waqar Ahmad</td>
</tr>
<tr>
<td>Resident Tutor 1 - Ayesha Hall</td>
<td>Engr. Fatima Nazir</td>
</tr>
</tbody>
</table>
# Organizational Setup

## Audit
- **Resident Auditor**: Mr. Abdul Rauf

## Accounts
- **Deputy Registrar**: Ms. Masooma Ali
- **Assistant Registrar**: Mr. Shahid Saleem, Mr. Abid Mehmood Qureshi

## Dues/Scholarship Section
- **Assistant Registrar**: Mr. Muhammad Shafi

## Examinations Branch
- **Deputy Registrar**: Maj (R) Toqeer Ahmed
- **Assistant Registrar**: Rana Nadeem Anjum

## Establishment
- **Assistant Registrar**: Mr. Muhammad Ilyas Khan
- **Assistant Registrar (Procurement)**: Syed Ali Hussain Naqvi

## Academic & Regulation
- **Assistant Registrar**: Mr. Khalid Mahmood

## Legal Cell
- **Director**: Mr. Musharaf Sabih
- **Assistant Registrar**: Sheikh Asif Ali

## Network Administration and Research Center
- **Director Networks**: Prof. Dr. Adeel Akram
- **System Administrator**: Mr. Nadeem Majeed
- **Web Manager**: Syed Muhammad Adnan Shah
- **Manager Software Development**: Mr. Muhammad Huzaifa

## Vice-Chancellor’s Office
- **Secretary to Vice Chancellor**: Syed Basharat Abbass Shah

## Directors
- **Advanced Studies, Research & Technological Development**: Brig. Muhammad Saeed Akhtar Malik (R)
- **Undergraduate Studies**: Prof. Dr. Mumtaz Ahmad Kamal
- **Student Affairs**: Prof. Dr. Tahir Nadeem Malik
- **Information Technology Centre**: Prof. Dr. Adeel Akram
- **Project Director (B&W)**: Mr. Mukhtar Arshad
- **Telephone Exchange**: Prof. Dr. Muhammad Iram Baig
- **Digital Library**: Mr. Nadeem Majeed
- **Planning & Development**: Mr. Muhammad Ashraf
- **Admin Officer (Directorate of ASR & TD)**: Mr. Zafar Iqbal Sabir
### IMPORTANT TELEPHONE NUMBERS

**Trunk Numbers**: 9047 (RWP/IBD port #) 400,500,600 (operator Extensions), 9314216-23 (Taxila, 8 Lines),  
**Fax No**: 051-9047420  
The Intercom extensions are configured as Rawalpindi/Islamabad local numbers. 051-9047ddd (300 lines), where ddd stands for the 3-digit intercom extensions listed below:

<table>
<thead>
<tr>
<th>Role</th>
<th>Intercom Ext. (ddd)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vice-Chancellor</strong></td>
<td>401</td>
</tr>
<tr>
<td><strong>Secretary to the Vice-Chancellor</strong></td>
<td>403, 404</td>
</tr>
<tr>
<td><strong>DEANS OF FACULTIES</strong></td>
<td></td>
</tr>
<tr>
<td>Electronics &amp; Electrical Engineering</td>
<td>533</td>
</tr>
<tr>
<td>Telecom. &amp; Information Engineering</td>
<td>566</td>
</tr>
<tr>
<td>Civil &amp; Environmental Engineering</td>
<td>633</td>
</tr>
<tr>
<td>Mechanical &amp; Aeronautical Engineering</td>
<td>666</td>
</tr>
<tr>
<td><strong>CHAIRMEN OF ACADEMIC DEPARTMENTS</strong></td>
<td></td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>535</td>
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<tr>
<td>Electronic Engineering</td>
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<tr>
<td>Computer Engineering</td>
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<td>Software Engineering</td>
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<tr>
<td>Civil Engineering</td>
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<tr>
<td>Accounts Branch</td>
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<td>Assistant Registrar (Dues &amp; Scholarship)</td>
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<td>Resident Auditor</td>
<td>423</td>
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<tr>
<td>Controller of Examinations</td>
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<td>Examination Branch</td>
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<tr>
<td>Project Director (Building &amp; Works)</td>
<td>434</td>
</tr>
<tr>
<td>Executive Engineer</td>
<td>436</td>
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<tr>
<td>Admin Officer (Post Graduate)</td>
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<td>Director Admin &amp; Security</td>
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<td>University Health Clinic</td>
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<td><strong>Ali Hall</strong></td>
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<tr>
<td><strong>Chakwal Campus</strong></td>
<td>0543-602003, 0543-602004</td>
</tr>
</tbody>
</table>
CODE OF ETHICS

For the seekers and practitioners of the magnificent science of engineering

IN THE NAME OF ALLAH, THE BENEFICENT, THE MERCIFUL

- You shall be honest, faithful and just, and shall not act in any manner derogatory to the honor, integrity and dignity of the engineering profession.

- 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.

- You shall use your knowledge and skill of engineering for human welfare, and render professional service and advance, which reflects your best professional service and advance, which reflects your best professional judgment.

- You shall not abuse your position or power, nor accept illegal gratification of any sort.

- You shall faithfully observe and fulfill all your obligations.

- You shall express your opinion on engineering or other matters in a frank, open and straightforward manner.

- You shall not criticize another engineer’s work without his knowledge nor malign, or injure his professional reputation.

- You shall not ridicule fellow engineers nor let one discipline of engineering derides other disciplines or professions.

- You shall not directly or indirectly discredit other engineers nor assign (derogatory) epithets to their persons or work.

- 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 or in any manner derogatory to the dignity of the profession.

- You shall ascertain facts before accepting them and shall not encourage or cause others to carry tales. Credulity is no credit.

- You shall help one another in upholding and doing that is right, and shall not associate with those who transgress and those who indulge in unethical practices.

- You shall be kind and considerate to others and shall not fail to be cooperative and accommodating.

- You shall decide matters of common professional interest by mutual consultation.
INTRODUCTION

THE CITY OF TAXILA

The antique name ‘Takshasila’ means the city of cut stones. Taxila has gained worldwide eminence for its archaeological sites. Once a province of the powerful Achaemenian empire, Taxila was conquered by Alexander in 327 BC. It later came under the Mauryan dynasty and attained a remarkably mature level of development under the great Ashoka. Then appeared the Indo-Greek descendants of Alexander’s warriors and finally came the most creative period of Gandhara. The great Kushan dynasty was established some where near 50 AD. During the next 200 years Taxila became a renowned centre of learning, philosophy, art and religion, Jaulian being a centre of excellence or a university of that age. Pilgrims and travelers were attracted to it from as far away as China and Greece.

History took a new turn around 1950 when Ordnance Factories were founded at Wah, adjacent to Taxila. The country’s largest Mechanical Complex and Foundry were established at Taxila in mid sixties. In early seventies, the industrial progress attained a new dimension when Taxila was chosen to have Heavy Industries Taxila near its world famous museum. At the same time Pakistan’s largest Aeronautical Complex was established at Kamra which is about 45 km from Taxila. In mid seventies, government of the Punjab found the city ideally suitable for establishing the constituent college of University of Engineering and Technology, Lahore

Industrial progress in and around Taxila is gaining a newer pace. The neighboring industrial organizations are in the process of rapid expansion. A new industrial zone has emerged in Hattar area, which is about 20 km away from Taxila. Taxila is emerging as a leading industrial region at the national level. The strategic location is paving way for the city to act as a gateway to historical “Silk Route”.

THE UNIVERSITY
With phenomenal increase in students’ enrollment in 1970’s, a plan to establish additional campuses of the University of Engineering and Technology Lahore was conceived. As a result of that, the University College of Engineering Taxila was established in 1975. For three years it functioned at Sahiwal. In 1978 it was shifted to its permanent location at Taxila. The College continued its working under the administrative control of the University of Engineering and Technology, Lahore till October 1993. During this month it received its charter as an independent university under the University of Engineering and Technology Taxila Ordinance 1993. At present total enrollment of undergraduate and postgraduate students is above 2000.

ADMINISTRATION
The Governor of Punjab is the Chancellor and the Education Minister of Punjab is the Pro-Chancellor of the University. The Syndicate is the governing/legislative body and the Academic Council is the highest academic body of the University. The Vice-Chancellor is the Chief Executive and Academic Officer of the University. He is assisted by Deans of Faculties, Chairmen of Departments, Directors and Principal Officers of the University – the Registrar, the Treasurer, the Controller of Examinations and the Project Director, to ensure that the provisions of the University Act, the Statutes and the Regulations are faithfully observed and implemented.

LOCATION
The University campus is located on the outskirts of Taxila at a distance of 5 km from the city. It is situated near railway station Mohra Shah Wali Shah on Taxila-Havelian branch line. The city of Taxila is 35 km from the twin cities of Islamabad and Rawalpindi on the main Rawalpindi-Peshawar highway. The University buses commute daily between the campus and the cities of Islamabad, Rawalpindi and Wah Cantt. The campus covers an area of 163 acres. All the teaching departments, residential colony for teachers/employees, student hostels, guesthouse, post office and bank are housed on campus.
Faculty of Civil and Environmental Engineering
   Department of Civil Engineering

Faculty of Electronics and Electrical Engineering
   Department of Electrical Engineering

Faculty of Mechanical and Aeronautical Engineering
   Department of Mechanical Engineering

Faculty of Telecommunication & Information Engineering
   Department of Computer Engineering
   Department of Software Engineering
   Department of Telecommunication Engineering

Faculty of Industrial Engineering & Management Sciences
   Department of Industrial Engg. & Management Sciences
Dean
Prof. Dr. Mumtaz Ahmad Kamal

Areas of Interest
Pavement Evaluation and Transportation Engineering

DEPARTMENT OF CIVIL ENGINEERING

Chairman
Prof. Dr. Hashim Nisar Hashmi

Areas of Interest
Hydraulics, Sediment Transport and Water Resources

Professors
Saeed Ahmad
BSc Engg (Lahore)
MSc Struc Engg (UK)
PhD (UK)

Abdul Razzaq Ghumman
BSc Engg (Lahore)
MPhil (CEWRE Lahore)
PhD (Univ. of London, UK)

Mumtaz Ahmad Kamal
BSc Engg (Lahore)
PhD (Queen's Univ. UK)

Hashim Nisar Hashmi
BSc Engg (Hons) (Gold Medalist) (Lahore)
PhD (Queen's Univ. UK)

Qaiser uz Zaman Khan
BSc Engg (Hons) (Gold Medalist) (Lahore)
MSc Engg (University of Leeds, UK)
PhD (Saitama University, Japan)

Shaukat Ali Khan
BSc Engg (Hons) (Lahore)
MSc Engg (Newcastle Upon Tyne, UK)
AMASCE (USA)

Liaqat Ali Qureshi
BSc Engg (Lahore)
MSc Engg (Taxila)
PhD (Taxila)

Associate Professors
Ashfaq Ahmad Tahir
BSc Engg (Lahore)
MSc Engg (Taxila)

Kamran Muzaffar Khan
BSc Engg (Taxila)
MSc Engg (Taxila)
PhD (Taxila)

Assistant Professors
Usman Ghani,
BSc Engg (Hons) (Gold Medalist) (Taxila)
MSc Engg (Taxila)
PhD (Taxila & (Univ. of London, UK)

Muhammad Yaqub
BSc Engg (Taxila)
MSc Engg (Taxila)
PhD (University of Manchester, UK)

Areas of Interest
Structures and Concrete Materials

Areas of Interest
Hydraulics and Water Resources Engineering

Areas of Interest
Pavement Evaluation and Transportation Engineering

Areas of Interest
Hydraulics, Sediment Transport and Water Resources

Areas of Interest
Bridge Engg. Dynamics of Structures Earthquake Engg.
Structure Engg., Concrete Materials, Computer Aided
Structural Modelling

Areas of Interest
Geo Technical Engineering and Geo Environment

Areas of Interest
Structural Engineering, Construction
Management, Construction Materials

Areas of Interest
Hydraulics and Environmental Engineering

Areas of Interest
Performance Evaluation of Pavement and Materials, Hot
and Cold Recycling, Super pave Mix Design

Areas of Interest
Hydraulics and Water Resources

Areas of Interest
Structural Engineering
Muhammad Salman  
BSc Engg (Taxila)  
MSc Engg (NUST)  
Transportation Engineering

Imran Hafeez  
BSc Engg (Lahore)  
MSc Engg (Taxila)  
PhD (Taxila)  
Transportation Engineering

Naeem Ejaz  
BSc Engg (Taxila)  
MSc Engg. (Lahore)  
PhD (Taxila)  
Environmental Engineering

Jawad Ahmad  
MSc Engg (Taxila) (on higher studies abroad)  
Transportation Engineering

Faheem Butt  
BSc Engg (Taxila)  
MSc Engg (Taxila) (on higher studies abroad)  
Structural Engineering

Usman Ali Naeeem  
BSc Engg (Taxila)  
MSc Engg (Taxila) (on leave for higher studies)  
Hydraulics and Water Resources Engineering

M. Fiaz Tahir  
BSc Engg (Lahore)  
MSc Engg (Taxila)  
Structural Engineering

Ayub Elahi  
BSc Engg (Taxila)  
MSc Engg (Taxila)  
PhD (Taxila & Queen's Univ. UK)  
Structural Engineering

Qazi Umar Farooq  
BSc Engg (Taxila)  
M.E (Tokyo, Japan) (on higher studies abroad)  
Soil Mechanics and Geotech Engineering

Muhammad Ali Shamim  
BSc Engg (Hons)  
MSc Engg (Hons) (Taxila)  
PhD (Univ. of Bristol UK)  
Hydraulics and Water Resources Engineering

Lecturers

Naveed Ahmad  
BSc Engg (Hons) (Taxila)  
MSc Engg (Hons) (Taxila) (on higher Studies abroad)  
Transportation Engineering

Faisal Shabbir  
BSc Engg (Hons) (Taxila)  
MSc Engg (Taxila) (on higher Studies abroad)  
Structural Engineering

Zafar Naushad  
BSc Engg (Taxila)  
MSc Engg (Taxila) (on higher studies abroad)  
Soil Mechanics and Geotech Engineering

Qadeer Hussain  
BSc Engg (Taxila)  
MSc Engg (Taxila) (on higher studies abroad)  
Hydraulics and Water Resources Engg
THE DEPARTMENT

Department of Civil Engineering is actively engaged in disseminating civil engineering education for the last thirty-five years, whereas Department of Environmental Engineering has been established/recently.

The Department of Civil Engineering has an academic staff of 26, nearly 90% of whom contribute to postgraduate teaching and are involved in PhD research work. Approximately 500 undergraduate and 175 postgraduate students are registered in the department. Civil engineers from UET Taxila not only cater to the national needs for buildings, highways, dams, bridges, irrigation network and water supply systems but also contribute in the overseas Gulf & Canadian markets and are the world's largest users of building materials.

COURSES OF STUDY

The Department of Civil Engineering offers full-time course of four years duration leading to the degree of BSc in Civil Engineering. The department also organizes a course of 18 months duration leading to MSc in Civil Engineering.

In the bachelor's course, emphasis is laid on the fundamental concepts and principles, which constitute the basis of civil engineering practice. To foster their creative abilities, the students are assigned projects on design, construction or laboratory investigation for self-directed execution. The classroom and laboratory work is supplemented by the instructional tours to acquaint students with civil engineering projects of national importance. Survey camp is held to impart intensive field training where the students plan and execute survey of large areas independently.

LABORATORIES

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

a. Soil Mechanics & Foundation Engineering
b. Concrete Technology
c. Strength of Materials
d. Transportation Engineering
e. Hydraulics/Fluid Mechanics
g. Surveying
h. Public Health Engineering
i. CAD laboratory

Transportation and Hydraulics Engineering Laboratories have been upgraded through funds provided by Higher Education Commission. The department is actively engaged in providing consultancy services and testing facilities to national construction projects, and industry.

POSTGRADUATE STUDIES & RESEARCH

In order to satisfy the increasing demand for relevant advanced technological education, the department offers MSc degree courses in Structural Engineering, Water Resources and Hydraulics Engineering, Transportation Engineering and Soil Mechanics and Foundation Engineering, covering the most recent developments. The courses contain a balance of analytical and professional aspects and are designed to suit the needs of fresh graduates and those with professional experience. The tremendous potential for the development of water resources requires the services of engineers trained to plan, design, construct, operate and maintain engineering works for the control and utilization of these resources. Most of the postgraduate students belong to the construction industry and act as a bridge for university-industry linkage that makes research in the department to be practical and useful for the country. The introduction of PhD program has further enriched the research activities in the department.

PhD IN CIVIL ENGINEERING

The department has initiated PhD program in Civil Engineering from 2001 session. Approximately 45 PhD scholars are registered in the department. Out of which 14 scholars have completed their PhD Studies. The PhD Program is offered in the following specializations:-

- Structural Engineering
- Water Resources & Irrigation Engineering
- Transportation Engineering
- Soil Mechanics and Foundation Engineering
## LIST OF COURSES

### Course Outline: MSc Civil Engineering (4 specializations)

#### Specialization in Structural Engineering

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE-5101</td>
<td>Structural Mechanics</td>
</tr>
<tr>
<td>CE-5102</td>
<td>Matrix Analysis of Structural</td>
</tr>
<tr>
<td>CE-5103</td>
<td>Structural Design Practice</td>
</tr>
<tr>
<td>CE-5104</td>
<td>Instability of Structures</td>
</tr>
<tr>
<td>CE-5105</td>
<td>Pre-stressed Concrete Theory &amp; Practice</td>
</tr>
<tr>
<td>CE-5106</td>
<td>Construction Management</td>
</tr>
<tr>
<td>CE-5107</td>
<td>Data Analysis and Quality Control</td>
</tr>
<tr>
<td>CE-5108</td>
<td>Properties of Concrete and its Constituents</td>
</tr>
<tr>
<td>CE-5109</td>
<td>Computer Aided Design and Analysis of Structures</td>
</tr>
<tr>
<td>CE-5110</td>
<td>Bridge Engineering</td>
</tr>
<tr>
<td>CE-5111</td>
<td>Domes, Shells, and Space Structures</td>
</tr>
<tr>
<td>CE-5112</td>
<td>Dynamics of Structures</td>
</tr>
<tr>
<td>CE-5113</td>
<td>Earthquake Engineering</td>
</tr>
<tr>
<td>CE-5114</td>
<td>Finite Element methods for Structural Analysis</td>
</tr>
<tr>
<td>CE-5115</td>
<td>Application of Information Technology in Civil Engineering</td>
</tr>
<tr>
<td>CE-5116</td>
<td>Postgraduate Research Thesis</td>
</tr>
<tr>
<td>CE-5117</td>
<td>Strengthening, Retrofitting and Repairing of Structures</td>
</tr>
</tbody>
</table>

#### Specialization in Soil Mechanics & Foundation Engineering

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE-5201</td>
<td>Advanced Soil Mechanics</td>
</tr>
<tr>
<td>CE-5202</td>
<td>Foundation Engineering</td>
</tr>
<tr>
<td>CE-5203</td>
<td>Soil Structure Interaction</td>
</tr>
<tr>
<td>CE-5204</td>
<td>Hydraulic Structures</td>
</tr>
<tr>
<td>CE-5205</td>
<td>Rock Mechanics</td>
</tr>
<tr>
<td>CE-5206</td>
<td>Engineering Geology</td>
</tr>
<tr>
<td>CE-5207</td>
<td>Geo-environment</td>
</tr>
<tr>
<td>CE-5208</td>
<td>Pavement Evaluation &amp; Rehabilitation</td>
</tr>
<tr>
<td>CE-5209</td>
<td>C.A.D. (Computer Aided Design)</td>
</tr>
<tr>
<td>CE-5210</td>
<td>Ground Improvement</td>
</tr>
<tr>
<td>CE-5211</td>
<td>Excavation Engineering</td>
</tr>
<tr>
<td>CE-5212</td>
<td>Earth Pressure and Retaining Structures</td>
</tr>
<tr>
<td>CE-5213</td>
<td>Instrumentation in Geo-technical Engineering</td>
</tr>
<tr>
<td>CE-5214</td>
<td>Pavement Structures, Materials &amp; Design</td>
</tr>
<tr>
<td>CE-5215</td>
<td>Postgraduate Research Thesis</td>
</tr>
</tbody>
</table>
### Specialization in Water Resources & Irrigation Engineering

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE-5301</td>
<td>Advanced Open Channel Hydraulics</td>
</tr>
<tr>
<td>CE-5302</td>
<td>Design of Hydraulic Structures</td>
</tr>
<tr>
<td>CE-5303</td>
<td>Advanced Irrigation Engineering</td>
</tr>
<tr>
<td>CE-5304</td>
<td>Applied Hydrology</td>
</tr>
<tr>
<td>CE-5305</td>
<td>Ground Water Hydrology</td>
</tr>
<tr>
<td>CE-5306</td>
<td>Ground Water Development</td>
</tr>
<tr>
<td>CE-5307</td>
<td>Statistical Hydrology</td>
</tr>
<tr>
<td>CE-5308</td>
<td>Drainage and Irrigation Engineering</td>
</tr>
<tr>
<td>CE-5309</td>
<td>Sediment Transport</td>
</tr>
<tr>
<td>CE-5310</td>
<td>River Engineering</td>
</tr>
<tr>
<td>CE-5311</td>
<td>Dam Engineering</td>
</tr>
<tr>
<td>CE-5312</td>
<td>Computational Hydraulics</td>
</tr>
<tr>
<td>CE-5313</td>
<td>Application of GIS and Remote Sensing in Water Resources Engineering</td>
</tr>
<tr>
<td>CE-5314</td>
<td>Hydropower Development</td>
</tr>
<tr>
<td>CE-5315</td>
<td>Postgraduate Research Thesis</td>
</tr>
<tr>
<td>CE-5316</td>
<td>Environmental Engineering Hydrology</td>
</tr>
</tbody>
</table>

### Specialization in Transportation Engineering

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE-5401</td>
<td>Highway Planning &amp; Design</td>
</tr>
<tr>
<td>CE-5402</td>
<td>Transportation Engineering</td>
</tr>
<tr>
<td>CE-5403</td>
<td>Pavement Evaluation &amp; Rehabilitation</td>
</tr>
<tr>
<td>CE-5404</td>
<td>Characteristics of Passenger Transport System</td>
</tr>
<tr>
<td>CE-5405</td>
<td>Characteristics of Traffic Flow</td>
</tr>
<tr>
<td>CE-5406</td>
<td>Design of Transport Infrastructure</td>
</tr>
<tr>
<td>CE-5407</td>
<td>Pavement Evaluation Based on NDT</td>
</tr>
<tr>
<td>CE-5408</td>
<td>Traffic Management Techniques</td>
</tr>
<tr>
<td>CE-5409</td>
<td>Traffic Safety</td>
</tr>
<tr>
<td>CE-5410</td>
<td>C.A.D. (Computer Aided Design)</td>
</tr>
<tr>
<td>CE-5411</td>
<td>Pavement Structures, Materials &amp; Design</td>
</tr>
<tr>
<td>CE-5412</td>
<td>Railway Engineering</td>
</tr>
<tr>
<td>CE-5413</td>
<td>Application of Information Technology in Transportation Engineering</td>
</tr>
<tr>
<td>CE-5414</td>
<td>Application of Finite Element Method in Transportation Engineering</td>
</tr>
<tr>
<td>CE-5415</td>
<td>Postgraduate Research Thesis</td>
</tr>
</tbody>
</table>
FACULTY OF ELECTRONICS AND ELECTRICAL ENGINEERING

Dean
Prof. Dr. Ahmad Khalil Khan
BSc Engg (Lahore)
MSc Engg (USA)
PhD (Taxila), MIEP, MIEEP

Areas of Interest
Digital Image/Video Processing, Digital Signal Processing, Information & Source Coding Theory, ASIC Design

DEPARTMENT OF ELECTRICAL ENGINEERING

Chairman
Prof. Dr. Tahir Nadeem Malik
BSc Engg (Lahore)
MSc Engg (Lahore)
PhD (Taxila), MIEEE (USA)


Professors
Habibullah Jamal
BSc Engg (Lahore)
MASc (Toronto)
PhD (Toronto), FIIE(Pak), FIIEE(Pak), MIEEE(USA)

Digital Signal Processing, Advanced Digital Design, VLSI System Design, Microcomputer Applications & Telecommunication

Muhammad Zafarullah
BSc Engg (Hons) (Gold Medalist) (Lahore)
MSc Engg (Lahore), PhD (Taxila)
MIEP, MIEEEP, MIEEE(USA)

Optical Communication, Digital Systems, Modeling & Simulation

Umar Farooq
BSc Engg (Lahore)
MSc Engg (Japan), PhD (Taxila) MIEP, MIEEP

Multirate signal processing, microwave communication

Aftab Ahmad
BSc Engg (Lahore)
MSc Engg (Lahore), PhD (Taxila)


Muhammad Iram Baig (Presently Chairman Computer Engg. Deptt)
BSc Engg (Lahore)
MSc Engg (Lahore), PhD (Taxila)

Digital Design of Microcomputers, VLSI Testing & Verification.

Mohammad Ahmad Choudhry
BSc Engg (Lahore)
MSc Engg (GWA, USA)
PhD (Virginia Tech, USA)
MIEEE (USA)


Assistant Professors
Tahir Mahmood
BSc Engg (Hons) (Lahore)
MSc Engg (Lahore) MIEE (UK), PhD (Taxila)


Ilyas Ahmad
BSc Engg (Peshawar)
MSc Engg (Taxila) (on Higher Studies Abroad)

Power Systems Operation and Control, Voltage Control, Hydrothermal Coordination, Electricity Tariff Rationalization
Gulistan Raja  
BSc Engg (Taxila)  
M.S. Engg (Japan), PhD (Taxila)  
MIEEEP, MIEEE (USA)

Digital Image/Video Processing, Image & Video Compression, Medical Image Processing, ASIC Design, Computer Networks

Inamul Hassan Sheikh  
BSc Engg (Hons) Lahore  
MSc Engg (Taxila) (on Higher Studies Abroad)

Digital Systems and Design, Computer Architecture & Networks, Biomedical Engineering

Aamir Hanif  
BSc Engg (Hons) (Taxila)  
MSc Engg (Taxila)  
PhD (Taxila)

Power Flow & Voltage Control, Modeling & Simulation, Electric Power Quality Enhancement, Using Distributed/Renewable Generation, FACTs & CPDs, Power Electronics Based Control in Power System.

Muhammad Obaidullah  
BSc Engg (Taxila)  
MSc Engg (Taxila) (on Higher Studies Abroad)

VLSI Design, Digital Communication

Shabbir Majeed Chaudhry  
BSc Engg (Taxila)  
MSc Engg (Taxila)

Wireless Communication, RF & Microwave Transceiver Design, Stochastic Processes

Ahsan Ali  
BSc Engg (Taxila)  
MSc Engg (Taxila)

Control Systems, Electromagnetics

Salman Amin  
BSc Engg (Taxila)  
MSc Engg (Taxila)

Dielectrics and Electrical Insulation Materials, Composite materials for Electrical Engineering High Voltage Applications Electrical Power Transmissions

Hafiz Irfan Arshad  
BSc Engg (Taxila)  
MSc Engg (Taxila)

Digital Image Processing, Wireless Communication

Sarmad Sohaib  
BSc Engg (GIKI)  
PhD (UK)

Wireless communications, Digital Communications, Multiple Antenna (MIMO), Wire Communication Systems, Cognitive Radio, Wireless Sensor Networks

Lecturers

Sh. Saaqib Haroon  
BSc Engg (Lahore)  
MSc Engg (Taxila)

Power System Operation & Control, Power System Analysis

Tahir Muhammad  
BSc Engg (Canada)  
MSc Engg (Taxila)

Computer Networks, Analog & Digital Communication

Syed M. Bilal  
BSc Engg (Taxila)  
MSc Engg (Taxila)

Optical Communication, Opto-electric devices, Optical Networks, Wireless and Mobile Communications
THE DEPARTMENT

VISION

Aspiring for a Better World for Next Generation

OBJECTIVES

• To Strive for Excellence with Values.
• To address the challenges of market / industry
• To prepare the students for advanced learning & research in the field of Electrical Engineering

CORE VALUES

• Integrity • Self Discipline
• Cognition • Team Spirit
The Department of Electrical Engineering was established in 1975 with creation of University College of Engineering & Technology, Taxila at Sahiwal. After three years in 1978, the college was shifted to its permanent location at Taxila. In the present day world, the electrical infrastructure is critical in the sense that it mobilizes all other infrastructures. The department aims to develop abilities in the students for the application of the knowledge of Electrical Engineering. The students are provided with an educational foundation that prepares them for leadership roles along diverse career paths in the fields concerned with Electronics, Communications, Energy & Power Systems, and Industrial IT: Control & Automation.

**ENROLMENT**

- PhD Engg : 20
- M.Sc. Engg : 135
- B.Sc. Engg : 570

An independent and spacious building with a covered area of 66,100 sq.ft is available for the department. The department has three blocks namely: Main Block, Extension Block and Laboratory Block with covered areas as under:

<table>
<thead>
<tr>
<th>Building</th>
<th>Covered Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Block (Ground Floor)</td>
<td>27,000 sq.ft</td>
</tr>
<tr>
<td>Main Block (1st Floor)</td>
<td>23,600 sq.ft</td>
</tr>
<tr>
<td>Extension Block</td>
<td>10,000 sq.ft</td>
</tr>
<tr>
<td>Laboratory Block</td>
<td>5,500 sq.ft</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>66,100 sq.ft</strong></td>
</tr>
</tbody>
</table>

**LABORATORIES AND OTHER FACILITIES**

The Electrical Engineering Department has following fourteen well equipped laboratories:

a. Advanced Control Lab  
   b. Basic Control Lab  
   c. Basic Electrical Engineering Lab  
   d. Computer Lab  
   e. Computer Simulation Lab  
   f. Digital Systems Lab  
   g. Electrical Machines Lab  
   h. Electronics Lab  
   i. High Voltage & Insulation Testing Lab  
   j. Microwave & Communication Lab  
   k. Multimedia & Vision Lab  
   l. Optoelectronics Lab  
   m. Power Systems Lab  
   n. Workshop & Projects Lab  

These laboratories are upgraded as and when required. The department also shares the resources of Centre of Excellence for ASIC Design & DSP.
MSc ELECTRICAL ENGINEERING PROGRAM

The department started its postgraduate program in 1984 and has been offering courses for the degree of M.Sc. in Electrical Engineering. The Master of Science program is offered in the following specializations.

- Control
- Digital Techniques
- Electronics
- Power

The master degree courses are aimed at bringing the students abreast with the most recent developments in their fields of specialization. These courses are offered both for the part time as well as the full-time students. At present more than 90% students are enrolled in the part-time program. Most of these students are working with major engineering organizations of the country.

PhD ELECTRICAL ENGINEERING PROGRAM

The Department has well-established PhD program in Electrical Engineering. The program was started in 2001 and 44 students have been registered. The PhD Degree is awarded after compliance of all requirements of Higher Education Commission. So far 18 students have successfully completed their Doctorate Degrees. The department has 11 PhD supervisors conducting research in Control, Digital Techniques Electronics and Power specializations of Electrical Engineering. Three PhD faculty members of the department are included in the list of PhD supervisors approved by Higher Education Commission. Almost all labs have necessary facilities for postgraduate research and are used for PhD research.

TESTING FACILITIES

The department also offers consultancy services and testing facilities to local manufacturers of electrical and electronics equipment.

POSTGRADUATE STUDIES & RESEARCH

Research work being carried out at the department has direct bearing on the needs of national industry. This research is partially funded by the Directorate of Advanced Studies, Research and Technological Development of the University and Higher Education Commission. Projects, to meet the requirements of the neighboring industries are also conducted in the department. The faculty members and postgraduate students have published a significant numbers of research papers in different fields of Electrical Engineering. The department also arranges conferences, seminars and workshops in various areas of Electrical Engineering. The faculty members, postgraduate students and prominent researchers from home and abroad participate in these seminars.
**RESEARCH GROUPS IN ELECTRICAL ENGINEERING DEPARTMENT**

In order to streamline the research activities, all the faculty members are associated with the laboratories subject to their research interests. At present there are three research groups working in the Department. The names and the composition of the research groups is as follows:

<table>
<thead>
<tr>
<th>Sr No.</th>
<th>Name of Research Group</th>
<th>Head</th>
<th>Associated Labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Electronics &amp; Digital Techniques Research Group</td>
<td>Prof. Dr. Habibullah Jamal</td>
<td>1. Electronics Lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Microwave &amp; Communication Lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Multimedia &amp; Vision Lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. Optoelectronics Lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5. Centre of Excellence for ASIC Design &amp; DSP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6. Digital Systems Lab</td>
</tr>
<tr>
<td>b.</td>
<td>Energy &amp; Electrical Power System Research Group</td>
<td>Prof. Dr. Tahir Nadeem Malik</td>
<td>1. Electrical Machines Lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Power System Lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. High Voltage &amp; Insulation Testing lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. Basic Electrical Engineering Lab</td>
</tr>
<tr>
<td>c.</td>
<td>Industrial IT: Control &amp; Automation Research Group</td>
<td>Prof. Dr. Mohammad Ahmad Ch.</td>
<td>1. Advanced Control Lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Basic Control Lab</td>
</tr>
</tbody>
</table>

![Image of a computer lab]
### Common Courses in Multiple Specializations

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE-6001</td>
<td>Advanced Power Electronics (Electronics &amp; Power)</td>
</tr>
<tr>
<td>EE-6002</td>
<td>Power System Dynamic and Control (Control &amp; Power)</td>
</tr>
<tr>
<td>EE-6003</td>
<td>Engineering Optimization (Control, Electronics &amp; Power)</td>
</tr>
<tr>
<td>EE-6004</td>
<td>Stochastic Processes (Control, Electronics &amp; Power)</td>
</tr>
<tr>
<td>EE-6005</td>
<td>Engineering Aspects of Remote Sensing (Control &amp; Electronics)</td>
</tr>
<tr>
<td>EE-6006</td>
<td>Embedded Systems (Digital Techniques &amp; Electronics)</td>
</tr>
<tr>
<td>EE-6007</td>
<td>Neural Fuzzy Systems (Control, Electronics &amp; Power)</td>
</tr>
<tr>
<td>EE-6008</td>
<td>Artificial Intelligence (Control, Electronics &amp; Power)</td>
</tr>
<tr>
<td>EE-6009</td>
<td>Neural Networks (Control, Electronics &amp; Power)</td>
</tr>
<tr>
<td>EE-6010</td>
<td>Genetic Algorithms (Control, Electronics and Power)</td>
</tr>
<tr>
<td>EE-6011</td>
<td>Advanced Digital Design (Digital Techniques &amp; Electronics)</td>
</tr>
<tr>
<td>EE-6012</td>
<td>Computer Communication Networks (Digital Techniques &amp; Electronics)</td>
</tr>
<tr>
<td>EE-6013</td>
<td>Digital Video Systems (Digital Techniques &amp; Electronics)</td>
</tr>
<tr>
<td>EE-6014</td>
<td>Optical Communication (Digital Techniques &amp; Electronics)</td>
</tr>
<tr>
<td>EE-6015</td>
<td>Advanced Engineering Mathematics (Control &amp; Power)</td>
</tr>
<tr>
<td>EE-6016</td>
<td>Probabilistic Systems in Electrical Engineering – Design and Analysis (Control, Digital Techniques, Electronics &amp; Power)</td>
</tr>
</tbody>
</table>

### Specialization in POWER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
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<td>EE-6101</td>
<td>Power System Engineering</td>
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<tr>
<td>EE-6102</td>
<td>Power Delivery Systems</td>
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<td>EE-6103</td>
<td>Optimization Techniques in Power Systems</td>
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<td>EE-6104</td>
<td>Modeling and Simulation of Power System Components</td>
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<td>EE-6105</td>
<td>Power System Stability &amp; Control</td>
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<td>EE-6106</td>
<td>Power Quality</td>
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<td>EE-6107</td>
<td>Power System Reliability &amp; Security</td>
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<td>EE-6108</td>
<td>Electric and Magnetic Fields</td>
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<td>EE-6109</td>
<td>Power Systems Design</td>
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<td>EE-6110</td>
<td>Power System Planning</td>
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<td>EE-6111</td>
<td>Power System State Estimation</td>
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<td>EE-6112</td>
<td>Power Distribution Control and Automation</td>
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<td>EE-6113</td>
<td>Power System Operation</td>
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<td>EE-6114</td>
<td>Power System Protection</td>
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<td>EE-6115</td>
<td>Power System Transients</td>
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<td>EE-6116</td>
<td>Dielectrics &amp; Electrical Insulation Materials</td>
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<td>EE-6117</td>
<td>Alternate Energy Resources</td>
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<td>EE-6118</td>
<td>Power System Economics</td>
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<td>EE-6120</td>
<td>Distribution System Economics</td>
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<td>EE-6302</td>
<td>Digital Signal Processing</td>
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<td>EE-6303</td>
<td>Digital Design – Testing and Verification</td>
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<td>EE-6304</td>
<td>Parallel Processing</td>
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<td>EE-6305</td>
<td>Computer/Robot Vision</td>
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<td>EE-6307</td>
<td>Computer and Information Security</td>
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<td>EE-6308</td>
<td>Multi-Rate Signal Processing</td>
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<td>EE-6309</td>
<td>Algorithms and Data Structures</td>
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<td>Data Compression Techniques</td>
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### Specialization in ELECTRONICS

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<td>Analog Integrated Circuit Design</td>
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<td>EE-6202</td>
<td>Advanced VLSI Design</td>
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<td>EE-6203</td>
<td>Fiber Optics: Theory and Applications</td>
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<td>EE-6204</td>
<td>Antenna and Propagation</td>
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<td>EE-6205</td>
<td>Advanced Network Synthesis</td>
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<td>EE-6206</td>
<td>Radar Systems</td>
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<td>EE-6207</td>
<td>Information Theory and Source Coding</td>
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<td>EE-6208</td>
<td>Advanced Electromagnetic Theory</td>
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<td>EE-6209</td>
<td>VLSI Testing and Verification</td>
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<td>EE-6210</td>
<td>Random Variables and Signals</td>
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<td>Advanced Electronic Devices</td>
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<td>EE-6212</td>
<td>Electronic System Design</td>
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<td>Advanced Circuit Analysis and Filter Design</td>
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<td>Solid Sate Electronics</td>
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<td>Semiconductor Materials and Technology</td>
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<td>MEMS Systems</td>
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<td>EE-6218</td>
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<td>Advanced Topics in Electronics/Communications</td>
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<td>Digital Speech Processing</td>
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<td>EE-6314</td>
<td>Biomedical Image Processing</td>
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<td>Multimedia Systems and Communication</td>
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<td>Wireless Networks</td>
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<td>Advanced Mobile Communication</td>
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<td>Data Mining and Security</td>
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<td>Satellite Communication</td>
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<td>EE-6320</td>
<td>Pattern Recognition</td>
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<td>EE-6321</td>
<td>Optical Networks</td>
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<td>EE-6322</td>
<td>Digital Communication</td>
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<td>EE-6330</td>
<td>Advanced Topics in Digital Techniques</td>
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**Specialization in CONTROL**

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<td>EE-6401</td>
<td>Optimization Methods for Systems and Control</td>
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<td>EE-6402</td>
<td>Automatic Control Systems</td>
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<td>Digital Control Systems</td>
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<td>EE-6404</td>
<td>Lumped Systems Theory</td>
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<td>Non-Linear Control Systems</td>
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<td>Linear Multivariable Control</td>
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<td>Optimal Control Systems</td>
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<td>EE-6408</td>
<td>Adaptive Control and Non-linear Stability Theory</td>
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<td>EE-6409</td>
<td>Robotic Systems</td>
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<td>EE-6410</td>
<td>Control of Robot Manipulators</td>
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<td>EE-6411</td>
<td>Linear Systems Theory</td>
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<td>Fuzzy Control</td>
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<td>EE-6413</td>
<td>Random Processes</td>
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<td>EE-6414</td>
<td>State Variables in Automatic Control</td>
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<td>Stochastic Control</td>
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<td>Advanced Topics in Control</td>
</tr>
<tr>
<td>EE-6000</td>
<td>Postgraduate Research Thesis</td>
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</tbody>
</table>
Dean
Prof. Dr. Shahab Khushnood
DEPARTMENT OF MECHANICAL ENGINEERING
Chairman
Prof. Khawaja Sajid Bashir
Professors
Shahab Khushnood
BSc Engg (Hons) (Gold Medalist) (Lahore)
MSc Engg (Lahore), MBA (Marketing) (AIOU), PhD (NUST)

M. Shahid Khalil
BSc Engg (Lahore), PhD (Sheffield, UK),
PGD(Quality), PGD(HRM) L.A(Quality), L.A(Environmental)

Mukhtar Hussain Sahir
BSc Engg (Lahore)
MSc Engg (Lahore)
PhD (Taxila)

Muhammad Anwar Khan (on contract)
BSc Engg (Lahore)
MSc Engg (Cranfield, UK)

Rafi Javed
BSc Engg (Lahore)
MSc Engg (Georgia Tech, (USA)

Sagheer Ahmad
BSc Engg (Lahore)
MSc Engg (Lahore)

Khawaja Sajid Bashir
BSc Engg (Lahore)
MSc Engg (Lahore), MBA (Marketing) (AIOU)

Associate Professor
Mirza Jahanzaib
BSc Engg (Lahore)
MSc (Taxila),
PhD (Taxila) (on leave abroad)

Assistant Professors
Khalid Masood Khan
BSc (Lahore)
MSc Engg (Birmingham, UK) (on study leave)

Riffat Asim Pasha
BSc Engg (Lahore)
MSc Engg (Taxila), PhD (Taxila)

Areas of Interest
Heat Transfer, Aerodynamics, Hydraulics, Flow Induced Vibrations, Engineering Management

Heat Transfer, Design of Air Conditioning Systems

Heat Transfer, Aerodynamics, Hydraulics, Flow Induced Vibrations, Engineering Management

Computer Aided Design/Computer Aided Manufacturing

Computer Aided Engineering, Industrial and Manufacturing Engineering.

Energy System Planning & Management,
Production system & Project Management

Heat Transfer, Thermal Systems
Energy Conservation and Management

AI Optimization, Algorithms, Manufacturing Automation, Simulation, Planning & Scheduling

Stress & Vibration Analysis of Machines and Structural systems, Design of Machine Elements

Heat Transfer, Designing of Air Conditioning Systems

Industrial and Manufacturing Engineering

Thermodynamics, Energy Resources and Conservation

Fatigue and Fracture of Materials, Material Characterization,
Micro Electroc-mechanical Systems.
Zahid Suleman Butt  
BSc Engg (Hons) (Lahore)  
MSc Engg (Taxila)  
Design of Hydraulic System, Renewable Energy

Waseem Ahmad  
BSc Engg (Hons) (Taxila)  
MSc Engg (Taxila) (on higher studies abroad)  
Industrial and Manufacturing Engineering

Muhammad Ali Nasir  
BSc Engg (Taxila)  
MSc Engg (Taxila)  
Design and Finite Element Methods

Tanzeel-ul-Rashid  
BSc Engg (Taxila)  
MSc Engg (Lahore)  
Computer Aided Manufacturing

Ali Rizwan  
BSc Engg (Taxila)  
MSc Engg (Taxila)  
PhD (Taxila)  
Engineering Management, Knowledge Management

Muzaffar Ali  
BSc Engg (Taxila)  
MSc Engg (Taxila) (on higher studies abroad)  
Thermo Fluids

Muddasar Khan  
BSc Engg (Taxila)  
MSc Engg (NUST)  
Design and Auto Frettage

Turab Haider  
BSc Engg (Taxila)  
MSc Engg (UK)  
Advanced Manufacturing Systems

Abdul Mubeen  
BSc Engg (Lahore)  
MSc Engg (Germany)  
Energy Systems

Khuram Shahzad  
BSc Engg (Taxila)  
MSc Engg (Taxila)  
PhD (UK)  
Advanced Manufacturing Systems

Muhammad Shehryar  
BSc Engg (NUST)  
MSc Engg (France)  
PhD (France)  
Fluid Mechanics / Fluid Structure Interaction/ Aero Elasticity

Masood ur Rahman Shah  
BSc Engg (Taxila)  
MSc Engg (France)  
PhD (France)  
Fracture Mechanics, High Temperature Damage

Nadeem A. Sheikh  
BSc Engg (NUST)  
MSc Engg (Taxila)  
PhD (UK)  
Multi Phase flow, Fluid Structure Interaction, Gas Particle Flow
Lecturers

**Nazir Ahmad Anjum**  
BSc Engg (Hons) (Taxila)  
MSc Engg (Taxila)  
Design & Computer Aided Design

**Hafiz Zafar Sharif**  
BSc Engg (Nawabshah) (On EOL Abroad)  
MSc Engg (Taxila)  
Thermo -Fluids

**Rana Atta-ur-Rahman,**  
BSc Engg (Taxila), MSc Engg (Taxila)  
Applied Mechanics & Design, Fracture and Fatigue of Materials

**Abid Hussain**  
BSc Engg (Taxila)  
MSc Engg (Taxila)  
Thermo Fluids, Energy Systems

**Waqar Ahmad Qureshi**  
BSc Engg (NUST), MSc Engg (Taxila)  
Thermo Fluid, Automatic Control

**Salman Hussain**  
BSc Engg (Hons) (Taxila) (on higher studies abroad)  
Mechatronic Engineering

**Ehtesham-ul-Haq**  
BSc Engg (Taxila) (on higher studies abroad)  
Computational Fluid Dynamics

**Hafiz Muhammad Ali**  
BSc Engg (Taxila) (on higher studies abroad)  
Aero Space Engineering

FOREIGN FACULTY

**Prof. Dr. Yosri Mashal**  
Prof. Dr. Fathi Mahfouz  
(on leave abroad)  
Tribology-Fracture Mechanics  
Thermo-Fluids

ADJUNCT FACULTY

Dr. M. S. I. Alvi  
Dr. Arshad Hussain Qureshi  
Dr. M. Zubair Khan  
Dr. Zafar M. Khan  
Dr. Khalid Akhtar  
Dr. Zafarullah Koreshi  
Dr. Asim Nisar  
Dr. Waqas Saleem
THE DEPARTMENT
Mechanical Engineering is a highly versatile and diversified engineering discipline. On one hand it deals with the design of machines and equipment that use energy and convert it into useful work. On the other hand it deals with the design and development of those machines that are used for manufacturing production equipment.

The department offers four years degree program leading to BSc in Mechanical Engineering. At present, around 600 students in BSc, 200 students in MSc and 60 students in PhD are enrolled in the program. So far 05 students have successfully completed their Doctorate Degrees.

COURSES OF STUDY
The Mechanical Engineering courses are built on a strong foundation of mathematical, physical and computing sciences. Emphasis is laid on the fundamental concepts and principles, which constitute the basis of Mechanical Engineering practice. The curriculum is designed to cover a broad range of areas.

In particular the department offers a series of courses in the following areas:
- Applied Mechanics and Design
- Thermal Systems Engineering
- Energy Engineering

The courses in Thermal Engineering include applied Thermodynamics, Refrigeration and Air conditioning, Heat Transfer and Power Plant. The department offers a wide range of courses in Applied Mechanics and Design area. Starting from a basic course in Engineering Mechanics, a series of courses is offered in Mechanics of Materials, Mechanics of Machines, Mechanical Vibration and Finite Element Methods. These theoretical concepts are fostered in a series of Machine Design courses enabling the students to try their skills and design small mechanical equipment. Product design is of no use without product development studies. The University has a rich industrial neighborhood. The students have the opportunity to make maximum use of this industrial environment by engaging themselves in short term as well as long term training. These industries include HIT, HMC, POF, PAF Complex at Kamra, HEC, KSB, TIP, CTI, AWC, Railway Carriage Factory, ARL, OGTI, Research Establishments of PAEC and a large number of units in the Hattar area. The students pick real world problems either for their term papers or as final year project from these organizations and brush their skills.

PAF complex at Kamra, HEC, KSB, TIP, CTI, ARL, OGTI, Railway Carriage Factory, Research Establishments of PAEC, NESCOM and a large number of units in the Hattar area. The students pick real world problems either for their semester papers or as final year project from these organizations and brush their skills.
LABORATORIES & OTHER FACILITIES
The department has the following well-equipped laboratories to meet the academic requirements of students and teachers as well as the professional needs of the government and private organizations:

a. Applied Thermodynamics
b. Mechanics of Materials
c. Mechatronics
d. Refrigeration & Air-Conditioning
e. Hydraulics & Fluid Mechanics
f. Heat Transfer
g. Mechanics of Machines
h. Industrial Engineering
i. Computer Aided Design
j. Fracture Mechanics

The department has CNC machining centers in the Machine Tools Laboratory. A CAD Laboratory has been established to provide facilities for 2D/3D drafting, C- programming and Digital Simulation. Recently Advanced Manufacturing System Lab has been developed which provides students the research environment in the field of Automation and Robotics.

POSTGRADUATE STUDIES
The department offers postgraduate courses leading to the degree of Master of Science (MSc) in Mechanical Engineering. The postgraduate degree program was started on part time basis in 1983 and since then MSc degree has been awarded to more than 200 students. During 2007-2009, 5 PhD degrees have also been awarded.

The postgraduate degree program envisages equipping students with skills to make analysis and design such that they can be employed as professional engineers in virtually any sector of the Mechanical Engineering industry. The objective is to provide specialist in-depth education in a specific field of engineering through taught course modules, applications course work, design exercises in some cases and an individual research thesis. The course material is taught in a way that makes students immediately productive within an industrial environment in the field of study that they have chosen.

The research activity within the Department has been developed around a series of research themes, several of which are closely related to topics on which MSc and PhD courses are run. The department has earned a stature of eminence and respect among academicians as well as practitioners due to continued research excellence.
### LIST OF COURSES
**Course Outline: MSc Mechanical Engineering (Specializations)**

#### Specialization in Thermal System Engineering

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<td>ME-4603</td>
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<td>ME-4604</td>
<td>Thermal Design of Heat Exchanger</td>
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<td>ME-4605</td>
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<td>ME-4606</td>
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<td>ME-4607</td>
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<td>ME-4608</td>
<td>Energy Conversion &amp; Prime Movers</td>
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<td>ME-4609</td>
<td>Advanced Thermodynamics</td>
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<td>ME-4616</td>
<td>Renewable Energy Resources</td>
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<td>ME-4617</td>
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<td>ME-4618</td>
<td>Theory of Thermal Stresses</td>
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<td>ME-4619</td>
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#### Specialization in Applied Mechanics & Design

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<td>ME-4615</td>
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<td>Analytical Stress Determination</td>
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<td>Experimental Stress Analysis</td>
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<td>Fatigue of Metals and Structures</td>
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<td>Theory of Elastic Stability</td>
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<td>ME-4636</td>
<td>Theory of Plates &amp; Shells</td>
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<td>ME-4639</td>
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<td>Microprocessors in Mechanical Engineering Design</td>
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<td>ME-4644</td>
<td>Advanced Design of Machine Elements</td>
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<td>ME-4645</td>
<td>Synthesis of Mechanisms</td>
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<td>ME-4646</td>
<td>Dynamics of Machinery</td>
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<td>ME-4647</td>
<td>Stress Analysis &amp; Design Aspects of Rotating Machinery</td>
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<td>ME-4648</td>
<td>Fracture Mechanics</td>
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ME-4649 Design Against Fatigue
ME-4650 Computer Simulation of Mechanical Systems
ME-4651 Research Methodologies and Design of Experiments
ME-4652 Tribology
ME-4653 Theory and Design of Micro-Electromechanical System
ME-4654 Structural Dynamics and Aero-Elasticity
ME-4699 Postgraduate Research Thesis

Specialization in Energy Engineering

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<td>Conventional Energy Technologies</td>
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<td>New and Renewable Energy Technologies</td>
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<td>Energy Conservation</td>
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<td>Energy Management</td>
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<td>ME-4705</td>
<td>Energy and Environment</td>
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<td>ME-4706</td>
<td>Energy Planning and Analysis</td>
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<td>ME-4707</td>
<td>Energy Economics and Policy Analysis</td>
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<td>ME-4708</td>
<td>Sustainable Energy and Power Utilization</td>
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<td>Energy Systems and Models</td>
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<td>Electricity Economics and Planning</td>
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<td>Energy Statistics and Energy Demand Forecasting</td>
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<td>ME-4712</td>
<td>Advanced Topics in Energy Conversion</td>
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<td>ME-4699</td>
<td>Postgraduate Research Thesis</td>
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</table>
DEPARTMENT OF COMPUTER ENGINEERING

Chairman

Prof. Dr. Muhammad Iram Baig
BSc Engg (Lahore)
MSc Engg (Lahore)
PhD (Taxila)

Associate Professors

Hafiz Adnan Habib
B.Sc Engg. (UET Taxila)
M.Sc Engg. (UET Taxila)
PhD (Taxila)

Assistant Professors

Muhammad Haroon Yousaf
BSc Engg (Taxila)
M.Sc. Engg. (Taxila)

Syed Sohail Ahmed
BSc Eng Taxila
M.Sc. Engg. (Taxila)

Lecturers

Muhammad Rizwan
BSc Eng Taxila
M.Sc. Engg. (Taxila)

Malik Muhammad Asim
BSc Eng Taxila
M.Sc. Engg. (Taxila)

Fawad Hussain
BSc Eng Taxila
M.Sc. Engg. (Taxila)

Areas of Interest

Digital Design, Embedded System, VLSI Testing & Verification
Digital Image Processing, Machine Learning, Computer Vision, Gesture Recognition, Biometrics, Video Surveillance Systems
Image Processing, Computer Vision, Video Processing, Gesture Recognition

Computer Networks, Wireless Communications
Sana Ziafat
BSc Eng Taxila
M.Sc. Engg. (Taxila)

Wireless Communication, Computer Networks

Afshan Jamil
BSc Eng Taxila
M.Sc. Engg. (Taxila)

Computer Vision, Digital Image Processing
THE DEPARTMENT
Graduate program in Computer Engineering at UET, Taxila is driven by the desire to create a state-of-the-art teaching & research department in Pakistan. We believe that it is only through a high quality graduate education that a university can survive in the modern world. Several object can be simultaneously achieved through well-designed graduate program is able to bridge the gap that exists between academics and industrialists within the country. We officer MSc in Computer Engineering discipline.

POST GRADUATE STUDIES
The goal of our graduate programs is to train highly qualified personnel to fulfill the needs of industry and academia. The course-based M.Sc. Engg program is geared towards practicing engineers who wish to augment their knowledge, use their experience, and enhance their design and technical skills. The M.Sc. and PhD programs aim at developing research skills by combining course work and original research work carried out under the supervision of one or more faculty members.
LIST OF COURSES
Course Outline: MSc Computer Engineering

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP-7001</td>
<td>Advanced Computer Architecture</td>
</tr>
<tr>
<td>CP-7002</td>
<td>Advanced Digital Design</td>
</tr>
<tr>
<td>CP-7003</td>
<td>VLSI System Design</td>
</tr>
<tr>
<td>CP-7004</td>
<td>Advanced Operating Systems</td>
</tr>
<tr>
<td>CP-7005</td>
<td>Core Algorithms and Data Structures</td>
</tr>
<tr>
<td>CP-7006</td>
<td>Embedded Systems and Application Design</td>
</tr>
<tr>
<td>CP-7007</td>
<td>Advanced Digital Signal Processing Techniques</td>
</tr>
<tr>
<td>CP-7008</td>
<td>Digital Image Processing</td>
</tr>
<tr>
<td>CP-7009</td>
<td>Artificial Intelligence</td>
</tr>
<tr>
<td>CP-7010</td>
<td>Network Security</td>
</tr>
<tr>
<td>CP-7011</td>
<td>IP Telephony and Voice over IP</td>
</tr>
<tr>
<td>CP-7012</td>
<td>Advance Computer Networking</td>
</tr>
<tr>
<td>CP-7013</td>
<td>DSP Software System Design</td>
</tr>
<tr>
<td>CP-7014</td>
<td>Multi rate Signal Processing</td>
</tr>
<tr>
<td>CP-7015</td>
<td>Computer Vision</td>
</tr>
<tr>
<td>CP-7016</td>
<td>Advance Topics in Computer Engineering</td>
</tr>
<tr>
<td>CP-7000</td>
<td>Postgraduate Research Thesis</td>
</tr>
</tbody>
</table>

Students will have to study at least 5 out of these 16 Core Courses
## ELECTIVE COURSES

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP-7017</td>
<td>Wireless Networks</td>
</tr>
<tr>
<td>CP-7018</td>
<td>Information Coding Theory</td>
</tr>
<tr>
<td>CP-7019</td>
<td>Parallel Processing</td>
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<tr>
<td>CP-7020</td>
<td>Digital Communication</td>
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<tr>
<td>CP-7021</td>
<td>Speech and Audio Processing</td>
</tr>
<tr>
<td>CP-7022</td>
<td>Stochastic Processes</td>
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<tr>
<td>CP-7023</td>
<td>Cryptography</td>
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<tr>
<td>CP-7024</td>
<td>Multimedia Communication</td>
</tr>
<tr>
<td>CP-7025</td>
<td>Graphics &amp; Visualization</td>
</tr>
<tr>
<td>CP-7026</td>
<td>Pattern Recognition</td>
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<tr>
<td>CP-7027</td>
<td>Machine Learning</td>
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<tr>
<td>CP-7028</td>
<td>Digital Control Systems</td>
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<td>CP-7029</td>
<td>Robotic Systems</td>
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<tr>
<td>CP-7030</td>
<td>Nural Fuzzy Systems</td>
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<tr>
<td>CP-7031</td>
<td>RISC &amp; DSP Microprocessor Systems Design</td>
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<tr>
<td>CP-7032</td>
<td>Video Streaming</td>
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<tr>
<td>CP-7033</td>
<td>Human Computer Interaction</td>
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<tr>
<td>CP-7034</td>
<td>Machine Learning</td>
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<tr>
<td>CP-7035</td>
<td>Network Management</td>
</tr>
<tr>
<td>CP-7036</td>
<td>Network and System Programming</td>
</tr>
<tr>
<td>CP-7037</td>
<td>Expert Systems</td>
</tr>
<tr>
<td>CP-7038</td>
<td>Fuzzy Logic</td>
</tr>
<tr>
<td>CP-7039</td>
<td>Internet Technologies and their applications</td>
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<tr>
<td>CP-7040</td>
<td>IC Fabrication</td>
</tr>
<tr>
<td>CP-7041</td>
<td>Quantum Computing</td>
</tr>
<tr>
<td>CP-7042</td>
<td>Scientific Computing</td>
</tr>
<tr>
<td>CP-7043</td>
<td>Software Engineering Methodology</td>
</tr>
<tr>
<td>CP-7044</td>
<td>Network Analysis and Troubleshooting</td>
</tr>
<tr>
<td>CST-1000</td>
<td>Research Methodology</td>
</tr>
</tbody>
</table>
DEPARTMENT OF SOFTWARE ENGINEERING

Chairman

Dr. Tabassam Nawaz

Areas of Interest

Advanced Databases Object Oriented Design & Analysis

Professors

Adeel Akram
B.Sc. Engg (UET Lahore)
M.Sc. Engg. (NUST)
PhD (UET Taxila)

Computer Networks, Wireless Communications

Associate Professor

Tabassam Nawaz
BSc Engg (Taxila)
MCS (BIIT), MSc Engg (Taxila)
PhD (Taxila)

Advanced Databases Object Oriented Design & Analysis

Assistant Professors

Samana Zehra
BSc Engg (NUST)
MSc Engg (Taxila)

Computer Networks, Wireless Networks, Databases and Application Development

Muhammad Siraj Rathore
MSc Engg (Taxila) (On Higher Studies abroad)

Computer Networks, System Programming

Shahid Iqbal Lone
BCA (AIOU)
MSc Computer Science (Gomal)
MSc Engg(Taxila) (On Leave)

Data Structure & Algorithm, Object Oriented Programming

Lecturers

Raja Muhammad Asjad Saleem
BSc Engg (Hons) (Taxila)
MSc Engg (Taxila)


Wajahat Abbas
BSc Engg (Hons) (Taxila)
MSc Engg (Taxila)

Multimedia Transmission in Wireless Network.

Fawad Riasat Raja
BSc Engg (Hons) (Taxila)
MSc Engg (Taxila)

Peer-to- Peer Networks,
Software Engineering

M Fahad Khan
BSc Engg (Hons) (Taxila)
MSc Engg (Taxila)  Gold Medalist

Computer Networks,
Wireless Communication.
Ali Javed
BSc Engg (Hons) (Taxila)
MSc Engg (Taxila) Gold Medalist

Tasawer Khan*
BSc Engg (Hons) (Taxila)
MSc Engg (UK)

Mustansar Ali Ghazanfar*
BSc Engg (Hons) (Taxila)
MSc Engg (UK)

Syeda Samana Naqvi*
BSc Engg (Hons) (Taxila)
MSc Engg (UK)

Shahzad Ahmed Bhatti*
BSc Engg. (UET Taxila)
MSc Engg. (UK)

Madiha Liaqat
BSc Engg (Hons) (Taxila)

Ali Ameer Gondal*
BSc Engg. (Bahria Islamabad)
MSc Engg. University of Southampton, (UK)

* on Higher Studies abroad

Video Summarization, Image Processing, Computer Vision
SOFTWARE PROGRAM OBJECTIVES

The aim of the department is to impart necessary knowledge relevant to the current research and practices in the field of software engineering. The department would ensure graduate students to acquire the ability to work independently and increase their knowledge.

The Department of Software Engineering has been established for eight years. The software engineering program involves learning of systematic and quantifiable approach to the design, development, operation and maintenance of software systems from small to higher level of complexities. The program covers not only the technical aspects of design and development of software systems, but also their management and teamwork skills.

The Department provides undergraduate and postgraduate courses and research opportunities in the theoretical and professional aspects of building enterprise software systems, using established as well as new and emerging technologies. Research projects, an essential feature of the program, add significant value by giving opportunities to the students to make direct contributions to expanding the frontiers of knowledge. The department fosters and maintains links with the industry in order to ensure the relevance of its courses and research.

THE DEPARTMENT

Software Engineering degree Program was started in 2002. Initially, it was setup in Electrical Engineering Department and classes were conducted for evening session only. In the mean time, the construction of separate building for department worth Rs. 40 million with funding from HEC (Higher Education Commission) was completed in year 2006. Building comprises seven class rooms, nine labs, one girl's common room, two examination halls and twenty offices. Department has laboratories with sufficient hardware and software facilities. Each lab is equipped with thirty PCs. The labs are networked and the department has wireless network coverage as well.

Software engineering department organizes different events to encourage student's participation and groom their technical as well as non technical skills. The events that have been arranged so far are; programming exhibition (Term projects exhibition in JAVA, C# etc), Database exhibitions, annual students day, seminars and workshops related to Software Engineering topics.
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LIST OF COURSES
Course Outline: MSc Software Engineering

CORE COURSES
Course No. | Course Title
---|---
SE-9001 | Requirements Engineering: Acquisition & Modeling
SE-9002 | Software Architecture
SE-9003 | Software Quality Management and Process Improvement
SE-9004 | Software Project Management
SE-9005 | Software Verification and Validation
SE-9006 | Algorithm Design and Analysis
SE-9007 | Embedded Systems Analysis and Design
SE-9008 | Artificial Intelligence and Software Agents
SE-9048 | Concurrency and Distributed Systems (CDS)
SE-9049 | Advanced Concurrency / Model Checking (MCH)
SE-9050 | Agile Methods (AGM)
SE-9051 | Computer Structures
SE-9052 | Professional Issues in Computing
SE-9053 | Information Systems: Analysis and Design
SE-9054 | Management of QA and Software Testing

* Students have to study at least five out of these fifteen core courses

ELECTIVE COURSES
Course No. | Course Title
---|---
SE-9009 | Design Patterns
SE-9010 | Software Process Modeling
SE-9011 | Formal methods in Software Engineering
SE-9012 | Risk Analysis and Management
SE-9013 | Software Metrics
SE-9014 | Advanced Programming Techniques
SE-9015 | Web Application Engineering
SE-9016 | Distributed Application Design and Development
SE-9017 | Computer Graphics and Multimedia
SE-9018 | User Interface Design and Implementation
SE-9019 | Network Programming
SE-9020 | Data Mining and Analytics
SE-9021 | Advanced Database Systems
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE-9022</td>
<td>Digital Image Processing</td>
</tr>
<tr>
<td>SE-9023</td>
<td>Computer Vision</td>
</tr>
<tr>
<td>SE-9024</td>
<td>Machine Learning</td>
</tr>
<tr>
<td>SE-9025</td>
<td>Real-Time Software and Systems</td>
</tr>
<tr>
<td>SE-9026</td>
<td>Data Authentication and Security</td>
</tr>
<tr>
<td>SE-9027</td>
<td>Special Topics in Software Engineering</td>
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<tr>
<td>SE-9028</td>
<td>Object Oriented Programming in Java</td>
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<tr>
<td>SE-9029</td>
<td>Computer Communications &amp; Networks</td>
</tr>
<tr>
<td>SE-9030</td>
<td>Operating Systems Concepts</td>
</tr>
<tr>
<td>SE-9031</td>
<td>Web XML Applications</td>
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<tr>
<td>SE-9032</td>
<td>Human Computer Interaction</td>
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<tr>
<td>SE-9033</td>
<td>E-Commerce</td>
</tr>
<tr>
<td>SE-9034</td>
<td>Managing the Software Enterprise</td>
</tr>
<tr>
<td>SE-9035</td>
<td>Secure and Robust Programming (SRO)</td>
</tr>
<tr>
<td>SE-9036</td>
<td>Safety Critical Systems (SCS)</td>
</tr>
<tr>
<td>SE-9037</td>
<td>ERP Systems</td>
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<tr>
<td>SE-9000</td>
<td>Research Thesis</td>
</tr>
<tr>
<td>CST-1000</td>
<td>Research Methodology</td>
</tr>
</tbody>
</table>
DEPARTMENT OF TELECOMMUNICATION ENGINEERING

Chairman
Muhammad Khawar Islam
BSc Engg (AJKU)
MSc Engg (UNSW, Australia)
PhD (UNSW, Australia)

Professor
Adeel Akram
BSc Engg (Lahore)
MSc Engg (NUST)
PhD (Taxila)

Assistant Professors
Javed Asad
MSc Engg (Taxila)
PhD (Taxila)

Khalid Bashir Bajwa
B.Sc. Engg. (NUST, Rawalpindi)
M.Sc. Engg. (Queen Mary University, London, UK)
Phd (Queen Mary University, London, UK)

Ghulam Shabbir
B.Sc. Engg. (UET Taxila)
M.Sc. Engg. (INT France)
M.Sc. Engg. (UMT Lahore)

Lecturers
Asad Ali
B.Sc. Engg. (University of Bradford, UK)
M.Sc. Engg (UCL, University of London, UK)

Ali Riaz
B.Sc. Engg (IOWA State University, USA)
M.Sc. Engg. (IOWA State University, USA)

Farzana Arshad
B.Sc. Engg. (UET Taxila)
M.Sc. Engg. (UET Taxila)

Farzana Hasan
B.Sc. Engg. (UET Taxila)
M.Sc. Engg. (UET Taxila)

Syeda Iffat Naqvi
BSc Engg (Taxila)
M.Sc. Engg. (UET Taxila)

Jamil A Khan
B.Sc. Engg. (UET Taxila)
M.Sc. Engg. (UET Taxila)

Humayun Shahid
BSc Engg (IST)

Mian Shahzad Iqbal
BSc Engg (COMSATS)

Nasir Abbas Joya
BSc Engg (Taxila)

Areas of Interest
Optical Communications, Digital Communications, Land Mobile Satellite Communications, Soliton & Non-Linear Optics, Fiber Lasers, Antenna Wave Propagation

Computer Networks, Intelligent Networks

Microwave Communication (RF Front End)

Computer Vision, Image Processing, Pattern Recognition

Switching and Telecommunications Networks, Intelligent Networks

Mobile and Wireless Communications, Telecomm Networks, Switching and Signaling

Electronics, Power systems and Renewable Energy

Embedded Systems

Digital Design

Network Security

Computer Vision and Image Processing

Signal Processing

Antenna and Microwave Engineering

Electronics
PROGRAM OBJECTIVES

With the immense increase in the demand of telecommunication engineers, growth of global telecommunication industry, deregulation, privatization and rapid technological changes, UET Taxila established Telecommunication Engineering Department under the Faculty of Telecommunication and Information Engineering.

The department aims in imparting high quality education to the students with hands on training on the latest and emerging telecommunication technologies. For their engineers to measure up to international standards, the Telecommunication Engineering Department is inducting the cutting edge technology in the form of equipment and expertise in the form of faculty and professional training experts. This will help in achieving the University goals to produce engineers that are capable to take up any challenge in the industry and are able to perform their tasks efficiently with high precision.

The department offers undergraduate and postgraduate programs with the following objectives:

- Provide Post-Graduate level training to Engineers from Bachelors of Telecommunication Engineering through Master level degree program.


- Provide a pool of expertise for defining optimal technology paths for the evolution of Telecommunication networks and services. These experts will be able to design the future telecommunication networks in our country and provide consultancy services as part of the University's goal of contributing to the industry.

- To provide much needed technical manpower that are well versed with the myriad of new telecommunication products being floated in the world market today.

The Masters in Telecommunication Engineering Program is specially tailored keeping in view the innovations in the Telecommunication sector, the global trends and challenges of the new millennium. The program is designed to produce top quality Telecommunication Professionals capable of meeting the challenges of the current fast changing Telecommunication environment. The program provides an optimal balance between academic and professional contents, comprehensive coverage of Telecommunication theories and techniques as well as the latest Telecommunication technologies.
POSTGRADUATE LABORATORY FACILITIES OF TELECOMMUNICATION ENGINEERING DEPARTMENT

a. CISCO Academy
   CISCO Academy has been developed to fulfill the ever increasing demand of professionals in the field of computer networking. Equipped with the state of the art routers and network simulation software, the lab targets research in prevailing IP and Networking technology domain.

b. Telecommunications (TE) Lab
   The TE Lab consist of all the state of art hardware and software facilities for students to carry out their semester projects as well as their research projects. The lab hosts modulation and communication trainers as well as generic electronic measuring instruments.

c. Antennas and RF Lab
   The Antennas and RF lab is equipped with the state of art equipment which includes wide band spectrum analyzer for real time testing of antennas and RF systems. The lab helps budding researchers and students to accentuates.

d. Telecommunications Switching and Cellular Communication (TSCC) Lab
   It consist state of art equipment and trainers for switching, Bluetooth and CDMA based mobile telephony calls.

e. Microprocessor and Computer Architecture Lab
   Microprocessor and Computer Architecture Lab aims to cater the need for accompanying lab work and independent research pertinent to embedded systems and computer system analysis and design.

RESEARCH GROUPS
Telecommunication Department has established the following research groups:

1. Antenna, Microwave and RF Group
   a. Dr. Muhamma Khawar Islam
   b. Engr. Javed Asad
   c. Engr. Mian Shahzad Iqbal

2. Digital, Analogue and Optical Communication Research Group
   a. Dr. Muhamma Khawar Islam
   b. Dr. Khalid Bashir Bajwa
   c. Dr. Adeel Akram
   d. Engr. Ghulam Shabbir
   e. Engr. Asad Ali
   f. Engr. Humayun Shahid

   a. Dr. Adeel Akram
   b. Engr. Asad Ali
   c. Engr. Humayun Shahid

4. Embedded Systems, Microprocessor, Electronics, Computer Vision & DLD Group
   a. Dr. Khalid Bashir Bajwa
   b. Miss Farzana Hassan
   c. Miss Iffat Naqvi
   d. Engr. Muhammad Jameel
   e. Engr. Ali Riaz

5. Network Research Group
   a. Dr. Adeel Akram
   b. Engr. Ghulam Shabbir
   c. Engr. Adnan Siddique
   d. Engr. Farzana Arshad
   e. Engr. Iffat Naqvi
## ELECTIVE COURSES

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE-8009</td>
<td>Advanced Wireless Communication</td>
</tr>
<tr>
<td>TE-8010</td>
<td>Wireless and Personal Communication</td>
</tr>
<tr>
<td>TE-8011</td>
<td>Wireless Multiple Access Communications</td>
</tr>
<tr>
<td>TE-8012</td>
<td>Advanced Mobile Radio Techniques</td>
</tr>
<tr>
<td>TE-8013</td>
<td>Radio and Mobile Communication System</td>
</tr>
<tr>
<td>TE-8014</td>
<td>Mobile and Adhoc Networking</td>
</tr>
<tr>
<td>TE-8015</td>
<td>Mobile Communication and Internet Technologies</td>
</tr>
<tr>
<td>TE-8016</td>
<td>RF Engineering Techniques</td>
</tr>
<tr>
<td>TE-8017</td>
<td>RF Circuit Design</td>
</tr>
<tr>
<td>TE-8018</td>
<td>Microwave Circuits, Theory and Techniques</td>
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<td>TE-8019</td>
<td>Computational Electromagnetic</td>
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<td>TE-8020</td>
<td>Satellite Networking</td>
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<td>TE-8021</td>
<td>Satellite, Fixed &amp; Mobile Radio Systems</td>
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<td>TE-8022</td>
<td>RF Subsystems and Satellite Communications</td>
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<td>TE-8023</td>
<td>Optical Networks</td>
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<td>TE-8024</td>
<td>Nonlinear Optics and its Applications</td>
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<td>Ultra-fast Optics and its Applications</td>
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<td>Fiber Access Networks</td>
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<td>TE-8027</td>
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<td>Wireless Optical Communication Systems</td>
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<td>TE-8029</td>
<td>Switching System Architecture</td>
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<td>TE-8030</td>
<td>Advance Computer Networking</td>
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<td>TE-8031</td>
<td>Telecommunication Regulations, Markets, and Service</td>
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<td>TE-8032</td>
<td>IP Networks</td>
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<td>TE-8033</td>
<td>Intelligent Networks and Services</td>
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<td>TE-8034</td>
<td>Communications System Modeling</td>
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<td>TE-8035</td>
<td>Speech Analysis and Processing</td>
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<td>TE-8036</td>
<td>Video Signal Processing</td>
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<td>TE-8000</td>
<td>Research Thesis</td>
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<tr>
<td>CST-1000</td>
<td>Research Methodology</td>
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</tbody>
</table>
Dean
Prof. Dr. Shahab Khushnood

DEPARTMENT OF INDUSTRIAL ENGINEERING & MANAGEMENT SCIENCES

Chairman
Prof. Rafi Javed Qureshi

Professors
Shahab Khushnood
BSc Engg (Hons) (Gold Medalist) (Lahore)
MSc Engg (Lahore), MBA (Marketing) (AIOU), PhD (NUST)

Mukhtar Hussain Sahir
BSc Engg (Lahore)
MSc Engg (Lahore), PhD (Taxila)

Rafi Javed Qureshi
BSc Engg (Lahore)
MSc Engg (Georgia Tech, USA)

Muhammad Shahid Khalil
BSc Engg (Lahore), PhD (Sheffield, UK),
PGD(Quality), PGD(HRM), L.A(Quality), L.A(Environmental)

Associate Professor
Mirza Jahanzeb
BSc Engg (Lahore)
MSc Engg (Taxila), PhD (Taxila) (on EOL / Deputation abroad)

Assistant Professors
Ali Rizwan
BSc Engg (Taxila)
MSc Engg (Taxila), PhD (Taxila)

Syed Turab Haider
BSc Engg (Taxila)
MSc Engg (UK)

Khurram Shahzad
BSc Engg (Taxila), PhD(UK)

Areas of Interest
Energy Management, Engineering Economics
CAD/CAM/CAE, Industrial and Manufacturing Engineering, Engineering Management
Production & Operations Management, Quantitative Techniques & Optimization, Economic Justification of Advanced Manufacturing System
Engineering Management, Knowledge Management
Advanced Manufacturing Systems
Industrial Management, Data Mining
Adjunct Faculty

Prof. Dr. Khalid Akhtar

Dr. Nawar Khan

Dr. Ather Masood

Dr. Ali Imran

THE DEPARTMENT

The Faculty of Industrial Engineering & Management Sciences initiated Msc. Engineering Management program in the Mechanical Engineering in autumn 2008, PhD Program in Engineering Management is expected to start in 2012, keeping in mind the national and international trends and in accordance with strong desire of Chancellor UET Taxila. However after construction of new building both Industrial Engineering and Engineering Management programs will be shifted to new proposed building.

The departments are:

• Industrial Engineering
• Engineering Management

DEPARTMENT OVERVIEW

Industrial Engineering is defined as optimization of men, machines and resources. Other engineering disciplines apply skills to very specific areas while Industrial Engineering and Engineering Management gives engineers the flexibility to work in a variety of businesses. Industrial Engineering deals with the design, improvement and installation of integrated systems of men, materials and machines, drawing upon specialized knowledge and skills of the mathematical, physical and social science aspects of technology in conjunction with the principles and methods of engineering and design. Engineering Management focuses on developing both quantitative and qualitative skills to enhance productivity of organizations. The focus is to emphasis on both tactical and strategic level issues in organizations.

This program prepares participants for eventual intermediate/senior management roles in a wide range of technical organizations including, Manufacturing, Construction, Mining, Petroleum, Chemical, Architecture, Water, Resource, Software, Telecom, Energy and other Engineering organisations. This is done by ensuring that they acquire a firm understanding of the major areas of knowledge, which underpin general management, whilst stressing the integration of the different strands of management within a broad strategic overview. The research program is best suited for the type of organization as mentioned above, however any engineering degree holder whose degree is recognized by PEC can be benefit from this program. Industrial and manufacturing engineering deals with the smart and economical product development methodologies. Students start with Workshop Technology in this area. Successive courses in Machine Tools, Engineering Materials, Production Engineering and Mechatronics and Robotics provide the students further insight to this area. Additional courses like Engineering Optimization, Industrial Engineering and Advanced Manufacturing Systems introduce students to the efficient management of productive resources.

Computer based Mechanical Engineering concepts have been embedded in various courses like Computer Programming, Machine Design, CAD and Industrial Engineering etc.

COURSE AIMS

• To develop a firm understanding of the concepts, processes and institutions in the production and marketing of goods and services and the financing of business enterprise or other forms of organisation.
• To understand and assess the impact of environmental forces; such as legal systems, ethical, social, economic, technological change and international events, on organisations and their strategy.
• To be able to respond to and manage change.
• To be familiar with the concepts and applications of quantitative methods of analysis to production, supply and finance and any other related areas.
• To understand the importance of organisational theory, behaviour, human resource management issues & interpersonal communications to successful business management.
• To provide an understanding of the systemic, integrated nature of organisations and their impact on the development of business policy and strategy.
• To develop participants’ ability to communicate clearly in various media, to argue rationally and draw conclusions based on a rigorous, analytical and critical approach to data.

The courses have been critically designed in collaboration with industry and mutual consent with other departments in the university. For right decision making at right time, knowledge of quantitative tools, effective utilization of human resources, understanding of economic decision making process, total quality management and project management, is essential. The core courses foundation integrated with elective courses form a critical balance to assist strategic level decision making.

ENTRY REQUIREMENTS

1. Applicants for the M.Sc Engineering Management program will hold a BSc. Engg./B.Engg degree (any discipline) recognized from PEC and those applying for PhD Program in Engineering Management will hold Master Degree in Engineering Management/Industrial Management recognized by PEC.
2. Applicants for the M.Sc Industrial Engineering program will hold a BSc. in Mechanical Engineering or Industrial Engineering degree recognized from PEC and those applying for PhD Program in Industrial Engineering will hold Master Degree in Mechanical Engineering, Industrial and Manufacturing Engineering and Production Engineering recognized by PEC.
COURSE DETAILS
This course has been designed with the industrial delegate in mind, indeed we talked with our industrial partners when developing the material. Each course consists of diversified topics and a mini project. The topics are studied in a block mode, one topic at a time. This means that you focus on one study area and complete it before moving on to the next. The Postgraduate degree in MSc Engineering Management consists of 30 credit hours with 24 credit hours of work study and 6 credit hours of thesis. The PhD Program is designed to suit higher education requirements in Engineering Management.

LIST OF COURSES
Course Outline: MSc. Engineering Management
(All courses other than research thesis carry 3 credit hours; Research Thesis carries 6 credit hours)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>EM 3601</td>
<td>Principles of Engineering Management</td>
</tr>
<tr>
<td>EM 3602</td>
<td>Total Quality Management</td>
</tr>
<tr>
<td>EM 3603</td>
<td>Human Resource Management &amp; Organizational Behaviour</td>
</tr>
<tr>
<td>EM 3604</td>
<td>Engineering Economic Decision Analysis</td>
</tr>
<tr>
<td>EM 3605</td>
<td>Engineering Project Management</td>
</tr>
<tr>
<td>EM 3606</td>
<td>Human Factors and System Design</td>
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<tr>
<td>EM 3607</td>
<td>Energy Resources Management &amp; Utilization</td>
</tr>
<tr>
<td>EM 3608</td>
<td>Production and Operation Management</td>
</tr>
<tr>
<td>EM 3609</td>
<td>Entrepreneurship and Innovations for Engineers</td>
</tr>
<tr>
<td>EM 3610</td>
<td>Reliability and Maintenance Management</td>
</tr>
<tr>
<td>EM 3611</td>
<td>Manufacturing Strategy</td>
</tr>
<tr>
<td>EM 3612</td>
<td>Research Methods and Study Skills</td>
</tr>
<tr>
<td>EM 3613</td>
<td>Information Engineering &amp; Global Perspective</td>
</tr>
<tr>
<td>EM 3614</td>
<td>Telecom Business Management</td>
</tr>
<tr>
<td>EM 3615</td>
<td>E-Commerce Tools Productivity</td>
</tr>
<tr>
<td>EM 3616</td>
<td>Knowledge Management</td>
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<tr>
<td>EM 3617</td>
<td>Power System Management</td>
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<tr>
<td>EM 3618</td>
<td>Water Resource Management</td>
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<tr>
<td>EM 3619</td>
<td>System Safety Engineering</td>
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<tr>
<td>EM 3620</td>
<td>Construction Building Management</td>
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<tr>
<td>EM 3621</td>
<td>Advanced Topics in Engineering Management</td>
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<tr>
<td>EM 3622</td>
<td>Planning &amp; Control in Industries</td>
</tr>
<tr>
<td>EM 3623</td>
<td>Environmental Engineering Management</td>
</tr>
<tr>
<td>EM 3624</td>
<td>Simulation of Business Processes</td>
</tr>
<tr>
<td>EM 3625</td>
<td>Multi Criteria Decision Making</td>
</tr>
<tr>
<td>EM 3626</td>
<td>Advanced Manufacturing Technology</td>
</tr>
<tr>
<td>EM 3627</td>
<td>Global Supply Chain Management</td>
</tr>
<tr>
<td>EM 3628</td>
<td>Transportation and Logistics Management</td>
</tr>
<tr>
<td>EM 3629</td>
<td>Financial Management</td>
</tr>
<tr>
<td>EM 3630</td>
<td>Research Thesis</td>
</tr>
<tr>
<td>EM 3631</td>
<td>Engineering Business Law</td>
</tr>
<tr>
<td>EM 3632</td>
<td>Technology Management</td>
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</tbody>
</table>
### Industrial & Manufacturing Engineering

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>IME-4671</td>
<td>Design of Advanced Manufacturing Systems</td>
</tr>
<tr>
<td>IME-4672</td>
<td>Design Principles of Metal Cutting Machine Tools</td>
</tr>
<tr>
<td>IME-4673</td>
<td>CAD/CAM</td>
</tr>
<tr>
<td>IME-4674</td>
<td>Dimensional Metrology</td>
</tr>
<tr>
<td>IME-4675</td>
<td>Work Design &amp; Measurement</td>
</tr>
<tr>
<td>IME-4676</td>
<td>Manufacturing Planning &amp; Control</td>
</tr>
<tr>
<td>IME-4677</td>
<td>Mechanics of Manufacturing Processes</td>
</tr>
<tr>
<td>IME-4678</td>
<td>Project Management</td>
</tr>
<tr>
<td>IME-4679</td>
<td>Statistical Quality Control &amp; Assurance</td>
</tr>
<tr>
<td>IME-4680</td>
<td>Advanced Engineering Economics</td>
</tr>
<tr>
<td>IME-4681</td>
<td>Simulation of Industrial Systems</td>
</tr>
<tr>
<td>IME-4682</td>
<td>Facilities Planning &amp; Design</td>
</tr>
<tr>
<td>IME-4683</td>
<td>Organizational Behavior</td>
</tr>
<tr>
<td>IME-4684</td>
<td>Engineering Optimization Techniques</td>
</tr>
<tr>
<td>IME-4685</td>
<td>Engineering Software Development</td>
</tr>
<tr>
<td>IME-4686</td>
<td>Scheduling of Industrial Systems</td>
</tr>
<tr>
<td>IME-4687</td>
<td>Soft Computing Methodologies in IE</td>
</tr>
<tr>
<td>IME-4688</td>
<td>Design &amp; Analysis of Experiments</td>
</tr>
<tr>
<td>IME-4689</td>
<td>Computer Aided Process Planning (CAPP)</td>
</tr>
<tr>
<td>IME-4690</td>
<td>Industrialization and Manufacturing Entrepreneurship</td>
</tr>
<tr>
<td>IME-4699</td>
<td>Postgraduate Research Thesis</td>
</tr>
</tbody>
</table>

**Note:** A candidate for admission to the MSc degree course in Industrial and Manufacturing Engineering must hold a BSc degree in any of the following disciplines.

1. Mechanical Engineering
2. Industrial Engineering
3. Aeronautical Engineering
4. Mechatronics Engineering
SERVICES AND COMMON FACILITIES
SERVICES AND COMMON FACILITIES

2.1 MAIN LIBRARY

The Central Library of the University plays a vital role in dissemination of knowledge, teaching, research, and extension services. It has a seating capacity for about 250 readers at its different halls, which provide congenial conditions for study. The library remains open in 2 shifts from 8:00 am to 9:00 pm on all working days with usual breaks. There is a large air-conditioned reading hall which provides congenial atmosphere for study. The Library is stocked with encyclopedias, dictionaries, handbooks, standard specifications, yearbooks, almanacs, abstracts, indexes and a big reference collection of text and general technical books.

Stocks and Services

The Library has more than 50,000 volumes of books and scattered issues of scientific and technical serials on diverse fields. Besides engineering subjects considerable reading material on humanities, social sciences and Islamic Studies is available. The members can borrow books and other materials, (except serials, reference or reserved books) for specific periods. They can also reserve materials, which are out in circulation. For this, reservation cards are to be handed over at the circulation counter.

Book Bank

The Library houses a Book Bank, which lends textbooks to the students on nominal rent. Every user can have books from this section.

2.2 DIGITAL LIBRARY

Mission

To meet the information requirements of students and researchers of UET Taxila, Pakistan with the provision of quality scholarly information based electronic delivery through Pakistan Educational Research Network (PERN), HEC has given online access of journals and research papers to UET Taxila. Access to all these resources is free of cost from within the UET Taxila intranet for students and researchers of UET Taxila.

Objectives

- To provide students/researchers in the university and eligible R&D organization with access to high quality journals, academic databases and articles across the widest range of disciplines.
- To address the specific information needs of the sector with the delivery of content relevant to national development objectives.
- To support the delivery of information and effective use of Information and Communication Technologies (ICTs) with extensive training for users with the library university and research community in Pakistan.
- To work with international organizations to enhance the scope of available content and to implement revolutionary technologies for the delivery of content.
- To provide increased dissemination opportunities and promote the use and visibility of locally produced research information.
SERVICES AND COMMON FACILITIES

LIBRARY AUTOMATION SYSTEM (LIBAS)
Library Automation System (LIBAS) is a one-stop information solution. It is managed, maintained and organized by University Library Professional and IT experts. LIBAS has improved the quality, speed and effectiveness of services like providing access to remote users and Resource-sharing among other library networks. It has also improved the management of physical and financial resources.

The important modules are:
• Acquisition
• Cataloguing
• Circulation
• Serial Control
• Administration
• OPAC (Online Public Access Catalog)

2.3 INFORMATION TECHNOLOGY CENTRE
There has been a major interest in Educational Computing since 1985 when a DEC’s VAX-11/730 was installed with six terminals, one line printer and one dot matrix printer at the Data Processing Center. Later in 1989, a Micro-VAX-3100 was procured and with its 20 interactive terminals. High pace changes and alterations in trends, hardware and software, introduction of new and user friendly operating system & environments, built-in packages and world wide communication led the centre to switch over from the outdated VAX to personal computers LAN and WAN. The centre is, thus, equipped with 50 personal computers. The IT Centre is providing services to all the departments of the university.

The main objectives of the centre are:
• To train the students at undergraduate level to develop the programming skills.
• To provide research facilities to the post-graduate students of all the departments of the university.
• To provide advisory services to the teachers and research scholars of the university.
• To computerize different procedures of the university’s administrative departments.
• To provide training to the engineers/officials of the surrounding industrial organizations.

The students are given extensive “Hands on” training on the mini-computers, which enhances their experience of working in an on-line environment. Short courses in various programming languages and application packages are also offered in the evening time. The center is committed for the promotion of Information Technology and
its facilities are being upgraded according to the developments in this field.

**Video Conferencing Facility**

Video conferencing facility in Information Technology Centre is available in accreditation with HEC. This facility is used to bring people at different sites together for a meeting. This can be as simple as a conversation between two people in private offices (point-to-point) or involve several sites (multi-point) with more than one person in Videoconferencing Hall at different sites. Besides the audio and visual transmission of meeting activities, videoconferencing can be used to share documents, computer-displayed information, and whiteboards.
2.4 NETWORK ADMINISTRATION AND RESEARCH CENTER (NARC)

Director Networks
Dr. Adeel Akram
PhD (Taxila)

Network Administrator
Engr. Muhammad Nadeem Majeed
M.Sc Computer Engg. (Taxila)

Web Manager
Syed Muhammad Adnan
MCS, Computer Engg. (Taxila)

Manager Software Development
Muhammad Huzaifa
MCS, Computer Engg. (Taxila)

Mission
Network Administration and Research Center (NARC) was founded to provide better support and services to the University. NARC is an outcome of University Computerization and Network Enhancement Program (UCNEP) project. Under UCNEP project, state of the art equipment was procured and latest technology was introduced to enhance the quality of communication infrastructure, existing Lab facilities and processes of the University.
NARC is responsible for design and development of networking infrastructure within University campus and sub campuses. It also provides 24 hour research facilities for PhD scholars and researchers, wireless hotspots are available in campus of the of the university to use internet and Intranet services for students and researchers.
NARC staff comprises of highly skilled, well qualified and technically competent workers who perform their tasks as a passion of their life.
NARC is not only limited to provide services to the University and its sub campuses, it also helps in providing technical assistance to other projects of national interest. NARC staff is actively involved in providing consultancy services to other universities and educational institutes, thus contributing towards the development of IT infrastructure of Pakistan.

NARC Research Facilities
NARC provides 24 hours research facilities to PhD scholars and researchers. All facilities provided by NARC are available round the clock. This includes Digital Library which provides free access to research papers and technical material from leading international forums and organizations around the world. It also provides High Performance Computing (HPC) facilities for students and researchers.
Necessary equipment required to complete the students in their semester and final year projects is provided free of cost to the students. Moreover technical guidance is also provided to them. NARC hosted the 17th International Conference on Microelectronics (ICM’05) held in December 2005 and ICOCN-07(International Conference on Optical Communication and Networks)
NARC is currently providing support in the following areas:
- Adhoc Networks
- Network Routing
- Network Simulation
- Stateful Inspection Firewalls
- Optical Fiber
- Secure VoIP communication
- Clusters and Grid Computing
- GPS and GIS
- Advanced Operating Systems
- GSM, GPRS and other Mobile technologies
- PHS and CDMA WLL

NARC is working in collaboration with national and international technological leaders to provide state of the art equipment and cutting edge technology to the University.
NARC is also working as Cisco Local academy for CCNA & IT Essential certification courses. NARC is also authorized local Academy of NOVEL for the Training and Certification of SUSE Linux.

2.5 PhD RESEARCH CENTRES
Electrical, Mechanical and Civil Engineering Departments research centres for PhD students are established with the help of HEC grant. The facilities comprising of latest computers, printers, internet and multimedia are available round the clock.
2.6 DIRECTORATE OF ADVANCED STUDIES, RESEARCH AND TECHNOLOGICAL DEVELOPMENT (ASRTD)

The Directorate of ASR&TD, which functions under the supervision of the Director, is the secretariat of the Board of Advanced Studies, Research and Technological Development. The Board comprises the Vice-Chancellor (Chairman), all the Pro-Vice-Chancellors, all the Deans, one University Professor from each faculty, one technologist, five members from the Industries and the Director of ASR&TD.

The Directorate performs a variety of functions to promote research, extension and advisory services in the University. The purpose of these functions is to:

a. Regulate MSc and PhD programs.
b. Provide funds and monitor faculty research.
d. Approve thesis titles, supervisors and examiners.
e. Co-ordinate the Split PhD program with foreign Universities, Government of Pakistan.
f. Arrange visits of Pakistani Experts to give Workshops/Seminars in their field of expertise under TOKTEN program.
g. Arrange visits of foreign Professors to the University and vice-versa.
h. Award of Research Assistant-ships.
i. Sponsor collaborative research work in engineering and allied disciplines at the University and promote the researchwork.
j. Assist the Departments in organizing Post-graduate Programs, extension lectures and seminars.
k. Coordinate advisory services of the University for the benefit of the Government departments and industries.
l. Arrange evaluation of Research publications of faculty members and publishing of Research Journal of the University.
m. Make arrangements for Extension Lectures of Senior Professors from foreign countries, under the proposed British Council Specialists visits to Pakistan and TOKTEN Schemes.
n. Arrange for PhD Programs in the University.
o. Regulate an endowment fund for Higher Education and R&D in IT & Telecom Division at University of Engineering & Technology, Taxila, created for an amount of Rs. 100 million. The main objective for the establishment of endowment fund is to provide a continuous service of funding the University for producing around four PhD and six MSc in the field of Signal Processing every year. Fund would be available for man power development in the following fields:

   (1) Computer/Data communication
   (2) Image Processing
   (3) Simulation and Modelling
   (4) Wireless communication
2.7 DIRECTORATE OF STUDENTS AFFAIRS
The primary function of the directorate is to organize extra-curricular activities of the students and to foster their intellectual, literary, and artistic potentialities, which remain untapped in the classroom. It functions normally through a large number of clubs and societies; each devoted to some sport or cultural and artistic activity. The students join these clubs and societies according to their inclinations and aptitudes. Another function of the directorate is to maintain liaison with a wide cross-section of students and to be responsive to their needs and problems. The directorate also works to promote, amongst students, respect for the dignified and disciplined behaviors befitting a university student and prospective member of the honored community of engineers of Pakistan.

2.8 ADJUNCT FACULTY
Keeping in view the international practice, the University is introducing Adjunct Faculty. The main purpose of the Adjunct Faculty shall be research supervision and teaching as required by the concerned department. This faculty will be paid remuneration as per university rules applicable for the normal/visiting faculty for the work done. Each department shall prepare a list of eminent scholars working in the industry or other universities. The list shall be approved by the Syndicate on the recommendation of the selection board. An adjunct faculty must hold a PhD degree in Engineering and a strong research background as a minimum eligibility requirement. He shall produce an NOC allowing him to accept the assignment from his employer. This appointment may be terminated at any time from either side without assigning reason.

2.9 ESTATE OFFICE
The University Campus spreads over 163 acres of land, and requires considerable efforts to keep the gardens, lawns, roadside rows of trees and flower-beds in good trim. The efforts of this office give the Campus a pleasing look, which attracts a large number of visitors in the mornings and evenings. For the convenience of the students, a shopping centre is located near the University hostels. This centre has a laundry, a general store, stationery and fruit shop. The office looks after security, sanitation, maintenance of lawns and gardens, and shopping facilities at the campus. It has a large squad of uniformed watchmen who guard the University buildings and property. Its sanitation staff keeps the buildings, roads, lawns, and other spaces clean and tidy.

2.10 HEALTH FACILITIES
The University provides medical facilities to its employees and students. Salient features of the existing health policy for students are listed hereunder:
1. Students will be provided free consultation by the Medical Officer.
2. Available medicines will be issued to students through authorized prescription only.
3. Night dispensary service will be available in emergency only.
4. In acute emergency, where a student cannot move, immediate report be made to RT who will make arrangements for further treatment under rules (i.e. ambulance, consultation, admission etc.). The expenditure shall be borne by the student.
5. Boarders will be required to fill in the proforma of previous medical history mentioning the disease he carries.
6. Indoor treatment from unauthorized medical attendants is not allowed.

2.11 TRANSPORT
Adequate transport facility is provided for students and the busses are plying between Rawalpindi, Islamabad, Hassanabadal, Wah Cantt. and the campus. this facility is, however, not obligation of the University and it can be reduced or terminated if the policy and/or the financial conditions so demand.

2.12 DUES /SCHOLARSHIP SECTION
The Section deals with all kinds of Fee/dues, scholarship, stipends, loans and fee concession under the charge of Treasurer.
ACADEMICS AND EXAMINATIONS (MSc ENGINEERING)

RULES AND REGULATIONS RELATING TO ACADEMICS AND EXAMINATION FOR POSTGRADUATE COURSES IN ENGINEERING

Definitions:

i) University means University of Engineering and Technology, Taxila.
ii) “Vice Chancellor” means the Vice Chancellor of the University.
iii) “Dean” means the Dean of the Faculty, wherein a student of Postgraduate studies is registered.
iv) “Chairman” means the Chairman of the degree awarding department, wherein a student of Postgraduate studies is registered.
v) “Student” means a student registered for the Postgraduate degree program of the University.
vi) “Controller” means the Controller of Examination of the University.
vii) “Academic year” means a year from 15 August to 14 August of the following year.
viii) “Board of Postgraduate Studies” means the Board of Postgraduate Studies of the concerned degree awarding department.
ix) “Directorate of Advanced Studies, Research and Technological Development” means the Directorate of Advanced Studies, Research and Technological Development of the University.

The general pronoun “he” and its derivatives imply either of Sex.

xi) The university offers courses leading to the PhD degree & Master of Science in engineering hereinafter referred to as M.Sc. (Engg) in the disciplines/ specialization provided in the schedule and introduced from time to time.

A candidate for admission to the MSc degree course must hold a BSc degree in the relevant branch of Engineering or an equivalent qualification (sixteen years of schooling or 4 year education/130 credit hours after FA/FSc) for part time program and minimum CGPA of 3.00/4.00 or 75% marks in BSc Engineering for full time program recognized by the equivalence committee to be appointed by the Syndicate.

3.1 COURSES OF STUDY
The respective Board of Postgraduate studies/Board of Faculties shall submit the courses of study and syllabi for various degrees of the University to the Academic Council and the Syndicate for approval. Such courses and syllabi shall become effective from the date of approval by the Syndicate or such other dates as the Syndicate may determine.

3.2 ORGANIZATION OF TEACHING & RESEARCH
a. Teaching and research in various courses shall be conducted in university departments through lectures, tutorials, discussions, seminars, practical work in laboratories, field work and other methods of instruction approved by the Academic Council. Medium of instructions will be English.

b. Each student shall follow the syllabi and courses of studies as prescribed by the Academic Council/ Syndicate from time to time.

c. The Boards of Postgraduate Studies of the Academic departments will normally meet in the first week of every Month during academic session to deal with matters pertaining to Postgraduate Studies.

d. The Director Postgraduate Studies of the concerned academic department shall maintain all records pertaining to conduction of Postgraduate classes, course wise attendance of students in each semester and all other matters relating to postgraduate studies.

e. Each postgraduate faculty member will maintain a Course File. All the academic details relevant to the course covered during the semester will be preserved in the file. The file will contain information on topics covered in the course, date-wise course plan, samples of quizzes, short tests, mid-semester tests, laboratory work, semester projects, final examination and student’s grade list. The course file will be presented to the Vice-Chancellor at the termination of the semester for appraisal.

3.3 GENERAL
3.3.1 Duration of Course
The minimum duration for completion of the Master’s degree program (part and full time) will be 18 months (three semesters).
3.3.2 Academic Calendar
An academic year of the university comprises two semesters, each of eighteen weeks duration of teaching and research. The semester schedule including teaching, mid semester holidays and examination periods will be as under:

Fall : 15th August to 31st December
Spring : 15th January to 31st May

3.3.3 Requirements for the Degree of Master of Science in Engineering
MSc (Engg) degree will be awarded for successfully completing studies equivalent to 30 credit hours.

Thesis:
- The candidate will pass a minimum of eight postgraduate level courses (24 credit hours) and successfully complete postgraduate research thesis (6 credit hours).
- In general, a student will be required to take at least five courses (15 credit hours) from his choice of specialization called major area.

3.3.4 Transfer of Credit Hours
The Credit of a maximum of 3 courses studied and passed at a percentage of atleast 70% or Grade-B at an institute recognized by HEC/PEC/NCEAC (National Computing Education Accreditation Council) may be transferred at this University and the affiliated institutions; provided that the subjects for which the student is applying for transfer must be read at other institution/university benign a student of the same degree (M.Sc) in which he seeks admission before his transfer of credits is considered and that the concerned Board of Postgraduate Studies allows such transfer by assessing the relevance and contents of the subjects.

3.3.5 Semester Work Load
a) A postgraduate course will comprise three credit hours per week. One credit hour will be equal to one class hour of lecture.

b) A student can be registered for a maximum of three postgraduate level courses in a semester of enrolment for part time and four courses per semester for full time program.

3.3.6 Weekly Classes Schedule
Weekly postgraduate teaching/research schedule prepared by the departments and duly approved by the Vice-Chancellor will be announced one week prior to the commencement of a semester.

3.3.7 Pre-Requisites
At the time of enrolment in a degree program, the student's previous academic credentials will be assessed. In case, a deficiency is found at BSc (Engg) level, Chairman of the department may direct the student to take courses at the undergraduate level. In such a case, the student would be required to attend lectures in these courses and pass a test to be given by the teacher.

3.3.8 Improvement of Grades
The candidate can improve the course already passed with grade-C or less. He can also appear in new courses for improvement of his CGPA.

3.4 REGISTRATION OF COURSES
3.4.1 Academic Advisor
Immediately after joining Postgraduate program, the student will be assigned by the Chairman of the department an Academic Advisor for academic guidance and counseling. In consultation with his academic advisor, the student will prepare a tentative course plan on the prescribed form and submit to the Chairman of the department for approval.

3.4.2 Semester Courses
Courses to be offered in any semester will be approved by the Vice-Chancellor and notified by Directorate of ASR&TD at least two weeks prior to the commencement of the semester. The Board of Postgraduate Studies of the department shall recommend the courses along with names of course instructors.

3.4.3 Registration Procedure
a) At the beginning of each semester, a student shall register for the courses being offered by the department on prescribed registration forms in line with the course plan.

b) After approval of the registration, the student will deposit prescribed dues in the University Bank account duly countersigned by Director, PGS/Dealing Asstt., and submit the dues slip in the office of the Chairman of the department. This registration will be once in a semester and there will be no further registration at the time of end semester examination.

c) A student can apply to the concerned Chairman for withdrawal of a course upto one month after the declaration of mid semester examination. In this case, the course will appear on the transcript with a ‘W’ grade and will not be counted towards GPA calculations.
3.4.4 Change in Courses
A student may change or drop the courses within 15 days from the commencement of the semester on the recommendation of Academic Advisor/Chairman of the department.

3.4.5 Registration Deadline
No registration or change in the courses will be allowed after 15 days from the date of commencement of the semester.

3.4.6 Registered Students List
a) The Chairman of each department shall forward the registration forms along with dues payment slips to the Directorate of Advanced Studies, Research and Technological Development (ASR&TD) immediately after the last date of registration.
b) The Directorate of ASR&TD will compile and forward the final list of registered students to all concerned on the prescribed form not later than 21 days from the commencement of the semester.

3.4.7 Re-enrollment
a) If a student interrupts his program of study for a semester or more, Vice-Chancellor will allow re-enrolment of the student on the recommendations of the Chairman & Dean. If re-enrolment is allowed, the student will pay all the pending dues along with re-enrolment fee.
b) If program requirements have changed during the period of interruption of studies, the student will be required to modify his degree program to ensure conformity to the latest version of the curriculum.
c) Any such interruption shall not be allowed in first semester and a student who does not appear in the first semester examination shall not be eligible for re-enrollment. Such student can however seek fresh admission.

3.5 POSTGRADUATE EXAMINATIONS

3.5.1 Final Examination
a) Final Examination shall be held during last week of each semester.
b) The Controller of Examinations will notify the date-sheet of Final Examinations at least 21 days prior to the commencement of examination duly approved by Vice-Chancellor.

3.5.2 Eligibility and Attendance Requirements
a) No candidate shall be admitted to Final examination of a semester unless he fulfills the following conditions:
i) He has registered for the courses of study as per registration rules.
ii) He has been on the rolls of the university during that semester.
iii) He has not been debarred for admission to the examination under any other regulation.
iv) He has attended in each course in which he has to be examined not less than 85% of total number of lectures delivered, the periods of laboratory practical/design work during that semester in which the examination is held. The Dean of the Faculty may for valid reasons condone to the extent of 10% of deficiency in the above-mentioned percentage.
b) The Controller of Examinations will be provided a list of registered candidates from the Chairman of the concerned Department at least two weeks before the commencement of end semester examinations.

3.5.3 Student Course Work Evaluation
a) A student shall be evaluated in each course on the basis of final theory examination called Part-I and sessional work called Part-II.
b) Final examination (Part-I) will comprise comprehensive theory examination to be held at the end of the semester.
c) Part-II shall include quiz tests, home assignments, case studies, laboratory work, fieldwork, studio work, mid semester tests, term projects and presentation of case studies etc.
d) The teacher who has taught the course during the semester shall normally be the Examiner for evaluation of examinations in Part-I and Part-II of that course.
e) Distribution of Marks: The distribution of marks in each course will be as under:

<table>
<thead>
<tr>
<th>Course</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pat-I Final Comprehensive Theory Exam</td>
<td>40%</td>
</tr>
<tr>
<td>Part-II Sessional Work</td>
<td></td>
</tr>
<tr>
<td>Mid-Semester Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Assignments, Labs/Field Work, Quizz etc.</td>
<td>20%</td>
</tr>
<tr>
<td>Course Project, Case Study, Presentation etc.</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
3.5.4 Grading System

a) Students grades in a course shall be determined according to the percentages as described in the following table:

<table>
<thead>
<tr>
<th>Percentage Marks Obtained</th>
<th>Grade</th>
<th>Grade Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>90% and above</td>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>Between 85% and 89.99%</td>
<td>A-</td>
<td>3.66</td>
</tr>
<tr>
<td>Between 80% and 84.99%</td>
<td>B+</td>
<td>3.33</td>
</tr>
<tr>
<td>Between 75% and 79.99%</td>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>Between 70% and 74.99%</td>
<td>B-</td>
<td>2.66</td>
</tr>
<tr>
<td>Between 65% and 69.99%</td>
<td>C+</td>
<td>2.33</td>
</tr>
<tr>
<td>Between 60% and 64.99%</td>
<td>C</td>
<td>2.00</td>
</tr>
<tr>
<td>Below 60%</td>
<td>F = Fail</td>
<td>0.00</td>
</tr>
</tbody>
</table>

b) Computations of Grade Point Average (GPA)

The Semester Grade Point Average (SGPA) will be computed as follows:

\[
\text{Semester GPA} = \frac{\sum (\text{Credit Hours/course})(\text{Grade Point earned in the course})}{\text{Total number of Credit Hours/Semester}}
\]

Example:

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade</th>
<th>Points</th>
<th>Credit Hrs</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course 1</td>
<td>A-</td>
<td>3.66</td>
<td>3</td>
<td>10.98</td>
</tr>
<tr>
<td>Course 2</td>
<td>B+</td>
<td>3.33</td>
<td>3</td>
<td>9.99</td>
</tr>
<tr>
<td>Course 3</td>
<td>C+</td>
<td>2.33</td>
<td>3</td>
<td>6.99</td>
</tr>
</tbody>
</table>

Semester GPA = $\frac{27.96}{9} = 3.1$

c) Cumulative Grade Point Average (CGPA)

\[
\text{CGPA} = \frac{\sum (\text{Credit Hours/course})(\text{Grade Point earned in the course})}{\text{Total number of Credit Hours in the Program}}
\]

3.5.5 Pass Marks

The minimum pass marks for each course (Part-I and Part-II combined) shall be 60%. For award of degree, the CGPA should not be less than 2.5.

3.5.6 Failure in a Course

a) A student obtaining less than 60% marks in any course shall be deemed to have failed in that course and will be awarded F grade.

b) If a student fails to appear in the final theory examination (Part-I) of a course on medical or any other reason, he shall be treated as absent and declared to have failed in that course with F grade.

c) A student obtaining F grade in a course may register again only once for the course on the advice of Advisor/Chairman. Student will repeat both Part-I and Part-II of the course after registration.

3.5.7 Declaration of Results

Controller of Examinations will declare results within 3 weeks of the completion of end semester examinations.

3.5.8 Semester Transcripts

Controller of Examination will issue a transcript to each candidate appearing in the examination. The transcript will contain information about percentage marks obtained in the courses, corresponding grade, Semester GPA and Cumulative GPA.

3.5.9 Provisional Certificate

Degree and Provisional certificate will be issued to each successful student obtaining MSc (Engg) degree showing aggregate percentage marks and aggregate grade point average based on grading system as outlined in clause (3.5.4). The certificate will also embody the title of MSc (Engg) research thesis and area of specialization.
3.5.10 Checking of Answer Book
There shall be no re-evaluation of answer books of the final theory examination (Part-I). A student may, on payment of prescribed re-checking fee, get the answer books rechecked for totaling and for verification that all questions or parts thereof have been fully marked within 15 days of declaration of result. Errors or omissions, if any, shall be rectified.

3.6 RESEARCH WORK/ THESIS
3.6.1 M.Sc. Research Thesis
Each candidate for M.Sc. (Engg) degree must successfully complete postgraduate research thesis. The thesis should make a contribution to knowledge based on individual’s original research work.

3.6.2 Submission of Research Proposal
The candidate must start the research work for his thesis during the 2nd semester of enrolment in case of part time and first semester in case of full time, in consultation with his prospective research supervisor. The research proposals will be submitted to the Director ASR&TD duly evaluated by the Board of PGS of the concerned department in the beginning of second semester (full time students) on the prescribed format.

3.6.3 Title of research/synopsis and the name of the Supervisor/ Co-Supervisor shall be approved by the Vice-Chancellor on the recommendations of the Board of Postgraduate Studies of the department. The department may recommend a Co-Supervisor if research is of multi-disciplinary nature and involves combining expertise from two or more departments/areas.

3.6.4 Minimum duration for a candidate to conduct research and prepare a thesis will be six months. This duration will start from the date of approval of research proposal by the Vice-Chancellor.

3.6.5 Submission of Thesis
a) On completion of his research work to the satisfaction of the Supervisor/Co-supervisor, the candidate shall embody the results of his research work in a thesis according to a prescribed format, available at Directorate of ASR&TD written in English.

b) Six typed copies of the thesis will be submitted to the Directorate of ASR&TD for the evaluation of thesis as per research schedule approved by the Vice-Chancellor.

3.6.6 Evaluation of Thesis
a) A candidate must pass in all courses before thesis evaluation is undertaken.

b) The candidate will give final seminar after completion of his MSc research work with the consent of his supervisor.

i) The final seminar of the research work may be open to other members of the academic community. The concerned Director, BPGS will notify the venue, date and time of the final seminar in consultation with the Chairman.

ii) The Board of PGS will recommend the evaluation of the thesis based on his final seminar of the research work.

c) Evaluation of thesis will be done by the internal/s and external examiners. The Research Supervisor/ Co-supervisor will normally act as the Internal Examiner/s and the External Examiner will be appointed by the Vice Chancellor on the recommendations of the Board of Postgraduate Studies of the department. The Directorate of ASR&TD will notify the venue, date and time of Examination in consultation with the Internal Examiner/s.

d) If a candidate, whose thesis has not been approved, will be permitted to revise his thesis. He will submit the revised thesis for evaluation within the time decided by the Examiners with in the prescribed maximum time limit for MSc. A candidate can appear in maximum three times for final examination as decided by examiners.

e) If a candidate fails to submit his thesis/revised thesis within the approved period unless it is extended, on valid reasons, by the Vice Chancellor, his case will be referred to Board of Postgraduate Studies for dismissal from the program.

f) After successful completion of thesis evaluation examination, the candidate will be required to submit six copies of thesis (alongwith soft copy) complete in all respects within the stipulated time of completion of MSc Engineering Degree Program.

3.6.7 The remuneration for research work Rs 4000/- per month per student for one year will be paid to MSc thesis supervisor of full time students starting from the date of approval of thesis proposal.

3.7 DISMISSAL FROM THE PROGRAM
a) If a student obtains F (Failing) grade in more than one course at the end of first semester of enrolment, he will be dropped from the degree program.

b) A student must maintain a semester grade point average (GPA) of 2.5 at the end of each semester to maintain satisfactory academic standing.

c) In case semester GPA of student is less than 2.5, the student will be placed on academic probation.
d) If a student is placed on academic probation, Director Postgraduate Studies will issue him a warning letter. The Degree will not be awarded until the Cumulative GPA is greater than or equal to 2.5.

3.8 CERTIFICATE OF MERIT
The Controller of Examinations shall issue a Certificate of Merit to a student, who obtains a cumulative GPA of at least 3.7 in his studies on the basis of the overall result, provided that the student has not failed in, or repeated any course and has completed all the degree requirements within prescribed time period of twenty four months.

3.9 CHANCELLOR’S MEDAL
The Vice Chancellor will award Chancellor’s Medal to a student who obtains a cumulative GPA of 4.0 in the aggregate and fulfills all the requirements as laid down in clause 3.8. Controller of Examinations will issue a certificate of merit to the recipient of the Chancellor’s Medal.

3.10 MAXIMUM TIME LIMIT
A candidate for MSc (Engg) degree must fulfill all requirements for the award of MSc (Engg) degree within a period of four academic years from the date of admission in case of part time and two years in case of full time program.

3.11 EXTENSION
The Vice-Chancellor shall have the powers to grant extension up to a maximum of six (6) months to complete degree requirements in case of both programs in hardship cases on the recommendations of the Chairman & Dean through the Director, PGS. The extension fee of Rs. 10,000/- irrespective of the period of extension and program shall be levied in addition to normal Fee/dues.

3.12 POSTGRADUATE DIPLOMA
If a student fails to complete his MSc thesis within the stipulated time, but completes full course work of MSc Engineering, he will be awarded Postgraduate Diploma on the fulfilment of all other official requirements.
4.1 ADVERTISEMENT

Applications for admission are invited through an advertisement in the national newspapers usually in the month of June of each calendar year.

4.2 SUBMISSION OF APPLICATIONS

a) Applications for admission to MSc degree Courses complete in all respects should reach the Chairman of the department concerned on dates to be notified by the Directorate of ASR&TD.

b) The application fee of Rs. 1000/- should be remitted/paid through Bank Draft/Pay Order/ Bank Challan in favor of the Treasurer of the University of Engineering and Technology, Taxila payable at Habib Bank branch of the University with completed application form. The application fee is not refundable.

c) Applications not submitted on the prescribed form or incomplete as regards the production of certificates/testimonials or unaccompanied by the application fee will not be considered.

d) A candidate for admission to the MSc degree course must hold a BSc degree in the relevant branch of Engineering recognized by the HEC/PEC/NCEAC and equivalence committee of the University.

e) A candidate for admission to the MSc degree course in Mechanical Engineering must hold a BSc degree in any of the following disciplines.

i) Mechanical Engineering

ii) Industrial Engineering

iii) Aeronautical Engineering

iv) Mechatronic Engineering

4.3 ALLOCATION OF SEATS

a) Keeping in view the available facility and staff position in each department, the Chairman of the department shall recommend to the Dean, for approval of suitable number of selected candidates in each specialization up to a maximum of 15. However, if the number of selected candidates for any specialization is less than five in part time program, the MSc course in that specialization will not be offered.

b) Maximum number of seats for Engineering Management will be 30.

c) There will be no limit for the number of the students for a subject to be offered in a semester for full time MSc.

d) The regular teachers of the department concerned may be admitted to the MSc Engineering Courses, on the recommendation of the Chairman in addition to the above mentioned seats.

The details of specializations in each department are as follows:

4.3.1 MSc Civil Engineering

Department of Civil Engineering offers MSc Civil Engineering courses in the following specializations subject to the availability of the faculty.

i) Structural Engineering

ii) Water Resources and Irrigation Engineering

iii) Transportation Engineering

4.3.2 MSc Electrical Engineering

Department of Electrical Engineering offers MSc Electrical Engineering courses in the following specializations subject to the availability of the faculty.

i) Electrical Power Engineering

ii) Electronics Engineering

iii) Control Engineering

iv) Digital Techniques

4.3.3 MSc Computer Engineering

Department of Computer Engineering offers MSc Computer Engineering courses in the following specialization(s) subject to the availability of the faculty.

i) Computer Engineering

4.3.4 MSc Software Engineering

Department of Software Engineering offers MSc Software Engineering courses in the following specialization(s) subject to the availability of the faculty.

i) Software Engineering
4.3.5 MSc. Telecommunication Engineering
Department of Telecommunication Engineering offers MSc Telecommunication Engineering courses in the following specialization(s) subject to the availability of the faculty.
i) Telecommunication Engineering

4.3.6 MSc. Mechanical Engineering
Department of Mechanical Engineering offers MSc Mechanical Engineering courses in the following specializations subject to the availability of the faculty.
i) Thermal System Engineering
ii) Applied Mechanics and Design
iii) Energy Engineering

4.3.7 MSc. Engineering Management
Department of Engineering Management offers MSc. Engineering Management courses in the following specialization subject to the availability of the faculty.
i) Engineering Management

Applicants for M.Sc Engineering Management Program will hold B.Sc. Engg, B.Engg Degree (any discipline) recognized by PEC.

4.3.8 MSc. Industrial & Manufacturing Engineering
Department of Industrial Engineering offers MSc Industrial and Manufacturing Engineering courses in the following specialization subject to the availability of the faculty.
i) Industrial and Manufacturing Engineering

4.4 SELECTION PROCEDURE

4.4.1 Test
GRE International or GAT General conducted by NTS will be necessary for admission to MSc Engineering with at least 50% cumulative score.

(a) Test
A written test, carrying 50 marks for part time and 60 marks for full time shall be held by the department on the date notified in the advertisement. Separate Test shall be held for each specialization where applicable. The candidate must obtain at least 50% and 60% marks in the test for admission in part time and full time program respectively.

(b) Interview
Candidates who pass the written test shall be interviewed by a committee comprising Dean of the Faculty, the Chairman of the Department and Director Postgraduate Studies of the Department. The interview shall carry 20 and 40 marks for part time and full time program respectively.

4.4.2 Determination of Merit
The merit list of those students who qualify the written test and the interview will be prepared by the Chairman of the Department. To determine the merit, the following are the marks for its different components:

a) 50 marks for the aggregate percentage marks obtained by the candidate on the basis of all the University Examinations for the BSc Engineering degree for both the programmes.

b) 50 marks for the written test for part time and 60 marks for full time program.

c) 20 marks for the interview for part time and 40 marks for full time program.

d) 10 marks for relevant experience. One mark for each year of the service of the candidate with the maximum of ten (10) marks.

e) Marks obtained in GRE International or GAT General conducted by NTS.

4.4.3 Admission

a) A separate merit list shall be prepared for each specialization based on the above mentioned criteria and limitation.

b) Based on the above merit list the Chairman shall recommend to the Dean, the admission of suitable candidates. The decision of the Dean shall be final in this regard.

c) Letter of admission shall be issued to those candidates whose admission is approved by the Dean.

d) Those admitted shall have to pay University dues and register for MSc within specified time.

e) Any seat falling vacant due to non-registration of any successful candidates shall be filled in by the succeeding entries on the respective merit list and letters of admission shall be issued to them.
4.5 PROCEDURE IN CASE OF SELECTED CANDIDATES

a) A candidate selected for admission will be sent an official notification by the Chairman of the department. The list of selected candidates will also be put on the notice boards.

b) Within 10 days of dispatch of an official notification, the selected candidate is required to pay the University Dues, submit four copies of the photographs duly attested by a gazetted government officer or class A officer of the University and a no-objection certificate from the employer for joining the course (in case of part time) to the Chairman of the department concerned. Unemployed candidates must submit an affidavit to the effect that he is currently not employed anywhere.

c) On fulfillment of obligations mentioned in (b), the selected candidate will be admitted to MSc degree course and the Chairman of the department will issue class roll number to him. The Chairman thereafter will send immediately the list of students who join the respective courses, to the Dean of the faculty concerned, along with the application forms, the bank draft/pay order. The Dean of the faculty concerned will register students in its record and notify the list of registered students to all concerned.

d) No candidate shall be admitted after two weeks of the beginning of the course.

4.6 ADMISSION OF FOREIGN STUDENTS

a) The Admission of the foreign students will be made on the basis of the academic record of the candidate and the assessment of his scholarship made by the Board of Postgraduate Studies of the department.

b) They must submit their applications to the Government of Pakistan, Ministry of Education, Islamabad, through Pakistan's representative accredited to their countries along with the following documents.

i) Educational Certificates (Attested Photo Copies) including details of syllabi and courses of studies prescribed for the BSc degree or its equivalent in Engineering.

ii) Domiciles / Nationality Certificate

iii) Character Certificate

iv) Health/Fitness Certificate

v) TOEFL and GRE scores or GAT general

4.7 TRANSFER FROM FULL TIME TO PART TIME MSc DEGREE PROGRAM

On the recommendations of Dean/Chairman the student can opt to transfer from full time to part time MSc degree program with the approval of the Vice-Chancellor. After approval of the competent authority for transfer from full time to part time, the whole amount received by the student, in the form of scholarship, will have to be deposited back to the University and the student will also deposit all Fee of the previous period studied at the university.

4.8 CONTINUING EDUCATION PROGRAM

Any eligible student can be registered in continuing education programme for MSc/PhD courses on the recommendation of concerned Chairman with usual Fee. (The student will be awarded only Transcript for this purpose).

4.9 GENERAL INSTRUCTIONS

a) Application for admission shall be invited through an advertisement in the national newspapers.

b) Each Candidate shall submit only ONE application irrespective of the number of specializations.

c) All employed candidates for admission in part time program will submit no-objection certificate from their employer.

d) Allocation of Specialization.

The applicants will clearly mention the specialization in which they are interested in their application form for admission. Each candidate shall produce the details of subjects studied by him at the undergraduate level to ascertain his suitability for admission into specific specialization.

e) The prescribed application forms provided in this prospectus, duly filled in by the candidate, shall be submitted in the office of the Chairman of the department along with all necessary documents/testimonials by the last date and time mentioned in the admission advertisement. All applications received after the due date and time, even if posted earlier, shall not be entertained.

f) The selected candidates will be required to pay University dues and register themselves for postgraduate classes within the specified time limit.

g) Any seat falling vacant due to non-registration of any selected candidate shall be filled up in accordance with the merit list.

h) Stipend to full time students, if available will be only for the minimum duration of program.

i) The university shall collect the original documents from the students enrolled in full time MSc Degree program. These documents shall remain in the custody of the university till the completion of the degree program.

j) If a full time MSc student wants to withdraw from the admission or does not complete the MSc degree program within time, he/she will have to return all Fee/stipend paid by the university.

k) A full time student shall submit an affidavit on stamp paper of Rs. 100 as per format-A and part time student will provide as per format-B given at the end of prospectus.
5.1 TITLE AND COMMENCEMENT
   a. These rules shall be called “Rules related to PhD Program of the University of Engineering and Technology, Taxila, 2001”
   b. These shall come into force with immediate effect, after the approval by the competent authority.

5.2 DEFINITIONS
   In these rules, unless otherwise explained, the following terms shall mean as prescribed in each case:
   a. “University” means the University of Engineering and Technology, Taxila.
   b. “Vice-Chancellor” means the Vice-Chancellor of the University.
   c. “Dean” means the Dean of the Faculty, wherewith a student of PhD Program is registered.
   d. “Chairman” means the Chairman of the degree awarding Department, wherewith a student of PhD Program is registered.
   e. “Student” means a student registered for the PhD Program of the University.
   f. “Supervisor” means a person holding PhD degree in the relevant field having demonstrated capability to conduct/supervise the research.
   g. “Internal Examiner(s)” means such examiner(s) appointed under these rules.
   h. “External Examiner(s)” means such examiner(s) to be appointed under these rules.
   i. “Research Monitoring Committee” means the Research Committee appointed under these rules, to monitor the PhD Program.
   j. “Board of Postgraduate Studies” means the Board of Postgraduate Studies, of the concerned degree awarding Department.
   k. “Board of Advanced Studies, Research and Technological Development” means the Board of Advanced Studies, Research and Technological Development of the University.
   l. The General pronoun “he” and its derivatives imply either of the sex.

5.3 ADMISSION AND REGISTRATION PROCEDURE
   a. PhD program shall be open to candidates who have Master’s Degree in the relevant engineering discipline recognized by the University.
   b. The PhD admissions will be advertised once a year in the newspapers of national repute, however, candidates can apply for PhD admission any time in a year. The admission will be granted at the start of either Spring or Fall semester.
   c. The minimum CGPA should be 3.00 or First Division in MS/ Equivalent Degree for admission into PhD.
   d. The candidates must pass subject GRE International with 50% percentile score, conducted by Educational Testing Service, USA. In disciplines where this test is not available, GAT (subject) conducted by NTS, must be passed with 60% cumulative score for admission in PhD. In case of non-availability of above mentioned tests, the locally developed test will be conducted by the department. This local test will contain the following: Three sections with minimum 70% pass marks:
      i) Mathematics
      ii) Core Engineering
      iii) Engineering area of Research
   The duration of the test will be 3 hours
   e. The candidate shall apply for PhD admission to the Director, Advanced Studies Research & Technological Development on prescribed form, who shall forward the case to the Board of Postgraduate Studies. The Board of Postgraduate Studies shall recommend the admission of the student and name of the Supervisor to the Vice-Chancellor for approval.
   f. The department may recommend a co-supervisor from outside the department or from other organization before and after the approval of topic of the scholar if the research is of multidisciplinary nature and involves combining expertise from two or more departments/organizations or Universities. The recommendation of co-supervisor will be forwarded to the Director ASR&TD after recommendation of the Board of PGS of the concerned department and notification will be issued after approval of the Vice-Chancellor.
The Co-Supervisor will also act as the member of the following committees/examiner:

i) Ph.D Research Committee  
ii) Ph.D Qualifying/comprehensive examination  
iii) Internal Examiner

g. After the approval of the Vice-Chancellor, the Director of Advanced Studies, Research and Technological Development will notify admission of the candidate and appointment of Supervisor.

h. In future, all PhD students at the beginning of each semester shall register for the courses/research work and the examination as such being offered by the department on prescribed registration forms within a month of the notification by paying full fee on semester basis as prescribed by the university. Following fee will be charged w.e.f Fall Semester 2011.

i) Registration Fee: Rs. 2000/- per semester (All Students)  
ii) Tuition Fee: Rs. 12000/- per semester (Part Time Students)
i. If a candidate for PhD admission has CGPA less than 3.0/4.0 in MSc, he can improve his CGPA by registering for a non degree course. He will apply for registration to the concerned Director, PGS and the case will be approved by the Vice-Chancellor on the recommendations of the concerned Chairman & Dean through Director, ASR&T&D. After approval by the Vice-Chancellor, the registration number will be issued to the candidate by the concerned department. The new grades will be used for the calculation of CGPA to fulfill the requirement for PhD admission only. He will pay prescribed fee for the course/s.

j. A PhD scholar is required to complete 18 credit hours of PhD level course work in consent with his supervisor after registration in PhD.

k. The university shall collect the original documents from the students enrolled in full time PhD Degree program. These documents shall remain in the custody of the university till the completion of the degree program.

l. If a full time PhD scholar wants to withdraw the admission or does not complete the PhD degree program within time, he/she will have to return all Fee/stipend paid by the university.

m. A full time PhD scholar shall submit an affidavit on a stamp paper of Rs: 100 as per format-A and a part time PhD scholar will provide as per format-B given at the end of prospectus.

5.4 PhD QUALIFYING/COMPREHENSIVE EXAM

a. After the completion of 18 credit hours of PhD level course work, the scholar will take the PhD qualifying comprehensive test.

b. The test shall have three parts:
   i. Written test comprising of Core area of research (3 hours)  
   ii. General Engineering and Mathematics (2 hours) (Pass marks percentage is 50%. If the scholar fails one or both he will be given only three chances to pass).
   iii. Oral presentation on the core area of research. The main theme of the oral presentation is the literature review in the area of research to demonstrate that the scholar is fully aware of the current research already done in this area.

c. The comprehensive examination mentioned in Clause 5.4b for the scholar will be prepared and conducted by PhD Research Monitoring Committee of the scholar. The Chairman of the concerned department will notify the venue, date and time in consultation with the concerned supervisor.

d. The scholar will write a technical report based on the literature review.

e. The scholar shall appear for a presentation and oral examination in front of the PhD Research Monitoring Committee and other invited audience.

f. In case scholar fails in the oral examination he will have one more chance.

g. Written and oral exams must be passed separately.

h. The report will be submitted to the Director, ASR&T&D through respective department for notification accordingly.

5.5 RESEARCH THESIS: REQUIREMENTS AND PROCEDURES

a. Soon after the admission of the candidate, on the recommendation of the Board of Postgraduate Studies, the Vice-Chancellor shall constitute a Research Monitoring Committee comprising the following:

   i) Supervisor/Co-Supervisor  
   ii) Two members holding PhD degree in the relevant field from within or outside the University.  
   iii) One member holding PhD degree from amongst the members of the Board of Postgraduate Studies.

b. i) The Research Monitoring Committee shall evaluate the progress made by the student after qualifying exam. Performance of the student will be evaluated by the Committee through presentation of his work in a meeting notified & chaired by the Director Advanced Studies, Research and Technological Development on the recommendation of the Supervisor. On the positive recommendations of the Committee the topic of research will be finalized, the student will be allowed to continue his work; otherwise he may be dropped from the PhD program.

   ii) PhD scholar shall report twice in a year i.e in the month of March and November in the form of
presentation in front of RMC and other audience.

c. During the studies every student shall submit quarterly progress report to the Vice-Chancellor on prescribed form through the Directorate of ASR&TD. In case, two consecutive reports are unsatisfactory, admission of the student shall be cancelled forthwith.

i) If a PhD scholar fails to submit his two consecutive progress reports or delays the submission of the required reports by six months, his admission shall be suspended and a notification shall be issued by the Directorate of ASR&TD to this effect. His admission shall be restored by the Dean Concerned on the recommendation of the Chairman on the:
   1) Justification of delay properly endorsed by the supervisor;
   2) Payment of Rs. 1000/- per month of his absence.

ii) In case of absence from more than six months to one year, the suspension can be removed by the VC on the recommendations of concerned Supervisor, the Chairman and the Dean.

iii) In case of absence for more than one year, the case will be referred to the Academic Council for appropriate decision.

d. On completion of his research work to the satisfaction of the supervisor, the student shall embody the results of his research in a thesis, written in English. The thesis must make a distinct contribution to knowledge and give evidence of original research.

e. Thesis may be submitted within a minimum period of three years (for both the programs), however there should be at least one year duration elapsed between date of approval of research topic and the submission of thesis. The maximum time for completion of PhD studies is five years for part time and four years for full time scholars, with at least three years residency period. This period shall be counted from the date of registration.

f. The scholar shall submit five copies of his thesis written on a prescribed format. Research Monitoring Committee on the date notified and chaired by Director, ASR&TD on the request of PhD Supervisor shall first evaluate the thesis and shall recommend its foreign evaluation.

g. Two copies of the thesis shall be sent to the two PhD experts from HEC list of technologically/academically advanced foreign countries to be appointed by the Research Monitoring Committee for their evaluation. US $1000 each will be paid to the foreign experts for evaluation of the thesis.

h. Based on the fact that the thesis makes a distinct original contribution to the field of knowledge, research publications and the evaluation report of the foreign experts, the Research Monitoring Committee shall submit its report to the Director, Advanced Studies, Research and Technological Development on a prescribed form recommending that:

i) The minor revisions suggested by Foreign Experts have been incorporated. The thesis is satisfactory and final examination may be arranged to enable the scholar to defend his thesis, or

ii) The thesis be resubmitted by the scholar after revision according to the directions of the Committee/Foreign Experts. In this meeting, Research Monitoring Committee will recommend changes in the title of thesis if suggested by foreign evaluators which will be final PhD thesis title of the scholar and will be approved by the Vice Chancellor.

i. Acceptance/publication of at least one research paper in an HEC approved journal is essential for the award of PhD degree.

j. In case of h(i), the Vice-Chancellor, on the recommendation of the Board of Postgraduate Studies, shall appoint the panel of Examiners comprising the following:

   i) The supervisor/co-supervisor who shall act as the internal examiner.

   ii) Two external examiners (out of the panel of four) other than his RMC members.

k. The Controller of Examinations shall notify the panel of Examiners, date and place of Examination and ensure proper advertisement of the notice of examination in order to maximize the presence of interested persons in the open presentation prior to oral examination of the scholar before the examiners.

l. The examiners shall conduct the oral examination. The panel of examiners shall submit its report recommending that:

   i) The candidate be declared to have satisfied the examiners, or

   ii) The candidate should again appear for oral examination, after a stipulated period.

m. The candidate shall be admitted to PhD degree provided he has been declared to have satisfied the examiners during the oral examination in accordance with the regulations.

n. The maximum number of PhD scholars under the supervision of a full time faculty member will normally be 5 which may be increased to eight under special circumstances in teaching departments. In research Institutes where the faculty is involved in full time research with low teaching work load, the number of PhD scholars may be larger with approval of the Higher Education Commission.

o. There should be at least 3 PhD faculty members in a department to launch a PhD program. However, in extraordinary cases, even one PhD teacher could start a PhD program if justified properly and approved by HEC.

p. VC shall have powers to grant extension up to a maximum of six months to complete degree requirements in hardship cases on the recommendations of the Supervisor, Chairman and Dean of the concerned department through ASR&TD Directorate. The extension fee of Rs. 10,000/- will be charged from the scholars of both programs in addition to normal fee /dues.
q. The meeting of Research Monitoring Committee can be conducted at any time.

r. Transfer of credit hours:
The Credit of a maximum of 3 subjects taught by a PhD teacher and passed at a percentage of 70% and above or at least B Grade at an institute recognized by HEC/PEC/NCEAC may be transferred at this University and the affiliated institutions; provided that the subjects for which the student is applying for transfer must be read at another institution/university being a student of the same degree (PhD) in which he seeks admission before his transfer of credit is considered and that the concerned Board of Postgraduate Studies allows such transfer by assessing the relevance and contents of the subjects.

s. In the final meeting of Research Monitoring Committee of a PhD scholar, it will be required to submit an Anti-plagiarism certificate produced using TURNITIN software (Sample of certificate is available in the Directorate of ASR&TD).

t. Stipend to full time scholars, if available will be only for the minimum duration of the program.

5.6 TRANSFER FROM FULL TIME TO PART TIME PhD DEGREE PROGRAM

On the recommendations of Supervisor, Dean and Chairman of the department, the scholars can opt to transfer from full time to part time PhD degree with the approval of the Vice-Chancellor. After approval of the competent authority for transfer from full time to part time PhD degree program, the whole amount received by the scholar, in the form of scholarship, will have to be deposited back to the University and the scholar will have to deposit all fee of the previous period studied at the university.

5.7 DEGREE REQUIREMENTS

a. Passing Qualifying/Comprehensive Examination

b. Proposal defence in the presence of PhD Research Monitoring Committee.

c. Completion of course works (18 Credit Hours after PhD admission) under the relevant clauses.

d. At least ONE publication in Journal of International Repute from the list of HEC recognized journals. The date of acceptance of the paper must be after the date of approval of Research Topic.

e. Satisfactory reviews from two experts from technologically/academically advanced countries.

f. Successful defence of thesis written in the prescribed format.
6.1 An Endowment fund for Higher Education and R&D in IT & Telecom Division at University of Engineering & Technology, Taxila, created for an amount of Rs. 110 million. The main objective for the establishment of endowment fund is to provide a continuous service of funding the University for producing around four PhD and six MSc in the field of Signal Processing every year. Fund would be available for manpower development in the following fields:

- Computer/Data Communication
- Image Processing
- Simulation and Modelling
- Wireless Communication
- Digital Signal Processing
- Mixed Signal/Conventional ASIC Design

A student admitted as full time for PhD/MSc in the above fields is eligible for scholarships and other permissible benefits from this fund. The request grant from this Endowment fund is based on the research proposals that shall be peer reviewed externally. The Board of Trustees makes the decision of the grant.

6.2 COST OF MAINTENANCE/FEE/ACADEMIC SUPPORT

The following Fee and Allowances are paid by the University out of Endowment Fund where applicable:

<table>
<thead>
<tr>
<th>Allowance</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance Allowance (Full time PhD)</td>
<td>Rs. 18000 PM</td>
</tr>
<tr>
<td>Maintenance Allowance (MSc)</td>
<td>Rs. 12000 PM</td>
</tr>
<tr>
<td>Fee (PhD)</td>
<td>Rs. 5000 PM</td>
</tr>
<tr>
<td>Fee (MSc)</td>
<td>Rs. 3000 PM</td>
</tr>
</tbody>
</table>
### MISCELLANEOUS FEE AND OTHER CHARGES - POSTGRADUATE

#### 7.1 FEE AND DUES (M.Sc. Engineering)

<table>
<thead>
<tr>
<th>Description</th>
<th>Pakistani (Rs)</th>
<th>Foreigners (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-Recurring (Payable at the time of admission)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admission Fee</td>
<td>2,000</td>
<td>100</td>
</tr>
<tr>
<td>Re-enrolment Fee (In case, the name of the student is struck off the rolls of the University)</td>
<td>5,000</td>
<td>100</td>
</tr>
<tr>
<td>Registration Fee</td>
<td>1,000*</td>
<td>50</td>
</tr>
<tr>
<td>University Security (Refundable)</td>
<td>10,000</td>
<td>500</td>
</tr>
<tr>
<td>Library Security (Refundable)</td>
<td>10,000**</td>
<td>500</td>
</tr>
<tr>
<td>Students Identity Card Fee</td>
<td>100</td>
<td>5</td>
</tr>
<tr>
<td><strong>Recurring Fee (per semester)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magazine Fee</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>Bus Fee</td>
<td>250</td>
<td>50</td>
</tr>
<tr>
<td>Library Fund</td>
<td>500</td>
<td>20</td>
</tr>
<tr>
<td><strong>Recurring Fee (per month)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Fee</td>
<td>500</td>
<td>25</td>
</tr>
<tr>
<td>Recreation Fee</td>
<td>100</td>
<td>5</td>
</tr>
<tr>
<td><strong>Tuition Fee</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Course Per Semester</td>
<td>3,000</td>
<td>150</td>
</tr>
<tr>
<td><strong>Research Fee</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per semester from 3rd semester of enrolment until completion of degree.</td>
<td>2,000</td>
<td>100</td>
</tr>
<tr>
<td><strong>Examination Fee</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theory and Viva-voce Exam (Part-I, Part-II) per paper *</td>
<td>1,000</td>
<td>70</td>
</tr>
<tr>
<td>Semester Transcript per Semester</td>
<td>500</td>
<td>20</td>
</tr>
<tr>
<td>Thesis Evaluation/ Re-evaluation Fee</td>
<td>3,000</td>
<td>120</td>
</tr>
<tr>
<td>Provisional Certificate Fee</td>
<td>500</td>
<td>100</td>
</tr>
<tr>
<td>Degree Fee</td>
<td>1,000</td>
<td>100</td>
</tr>
<tr>
<td>Late Fee (at the start of Semester)</td>
<td>100/-per day</td>
<td>10</td>
</tr>
</tbody>
</table>

* This fee will be charged at the time of registration of the semester.
** The student seeking membership of library will deposit the library security.
7.2 **FEE AND OTHER CHARGES (PhD. Engineering)**

a. (PhD scholars will deposit fee (semester-wise) along with fee depositing Schedule of MSc Engineering students.

<table>
<thead>
<tr>
<th>Non-Recurring (Payable at the time of admission)</th>
<th>Pakistani (Rs)</th>
<th>Foreigners (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission Fee</td>
<td>5,000</td>
<td>100</td>
</tr>
<tr>
<td>University Security (Refundable)</td>
<td>10,000</td>
<td>200</td>
</tr>
<tr>
<td>Registration Fee</td>
<td>2,000</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recurring Fee (per annum)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition Fee (per annum)</td>
<td>24,000</td>
<td>100</td>
</tr>
</tbody>
</table>

**Examination Fee**

| Research Evaluation Fee for Foreign Evaluators | 3,000          | 100              |
| Thesis Examination Fee                         | 3,000          | 100              |
| Theory and Viva-Voce Exam (part-I,part-II) per paper | 1000          | 60               |
| Semester Transcript per Semester               | 500            | 20               |
| Provisional Certificate                        | 500            | 50               |
| PhD Degree                                     | 1000           | 100              |
| Thesis Re-evaluation Fee                       | 5,000          | 120              |

b. **Registration Procedure**

In future all PhD students at the beginning of each semester shall register for the courses/research work and the examination as such, being offered by the department on prescribed registration forms.

Following is the schedule of fee payment with effect from FALL Semester 2011:

i. Registration Fee: 2000/- per semester.
ii. Tuition Fee: 12,000/- per semester.

7.3 **UNIVERSITY EMPLOYEES**

The University teachers/members of administrative staff shall be exempted from payment of above Fee (7.1 and 7.2) except the following:

a. M.Sc.
   i) Admission Fee
   ii) Registration Fee
   iii) Examination Fee

b. Ph.D.
   i) Admission Fee
   ii) Evaluation/Re-evaluation of Thesis Fee

7.4 **NON-PAYMENT OF FEE AND CHARGES**

A fine of Rs. 100.00 per day (from Postgraduate students) will be charged for a period of 20 days after the last date fixed for payment of fee and charges. After that, the name of the defaulter will be struck off the rolls of the university and he will have to pay re-enrolment fee along with the fee and fine before his re-enrolment. Application to this effect shall be submitted to the Dean of Faculty concerned. However, a student who receives scholarship through the university Treasurer may pay his fee and charges without fine within a week of receipt of the scholarship for the corresponding period. In case of a special hardship, a student may apply to the Dean of his Faculty for remission of the late fee fine. Vice-Chancellor will allow re-enrolment as per clause 3.4.7.
Note:

7.5 SUBMISSION OF PhD APPLICATIONS

a. Applications forms (one original & one copy photo state) for admission to PhD degree Courses complete in all respects should reach the Directorate of ASR&TD.

b. The application fee of Rs. 1000/- should be remitted/paid through Bank Draft/Pay order/Bank Challan in favor of the Treasurer of the University of Engineering and Technology, Taxila payable at Habib Bank branch of the University with completed application form. The application fee is not refundable.

c. Applications not submitted on the prescribed form or incomplete as regards the production of certificates/testimonials or unaccompanied by the application fee will not be considered.
## CALENDAR OF ACTIVITIES

### MEETINGS OF STATUTORY BODIES

**SYNDICATE:**
In accordance with, clause 2 of Rules of Business of the Syndicate framed by it in its 03/97 meeting held on 31.03.1997, the Syndicate shall ordinarily meet once in a quarter during the year on the 1st Saturday.

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st meeting</td>
<td>2nd week of January</td>
</tr>
<tr>
<td>2nd meeting</td>
<td>2nd week of April</td>
</tr>
<tr>
<td>3rd meeting</td>
<td>2nd week of July</td>
</tr>
<tr>
<td>4th meeting</td>
<td>2nd week of October</td>
</tr>
</tbody>
</table>

**ACADEMIC COUNCIL:**
In accordance with, clause 2 of Rules of Business of the Academic Council framed by Syndicate in its 03/97 meeting held on 31.03.1997, the Academic Council shall ordinarily meet once in a quarter during the year on the 1st Saturday.

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st meeting</td>
<td>1st week of November</td>
</tr>
<tr>
<td>2nd meeting</td>
<td>1st week of February</td>
</tr>
<tr>
<td>3rd meeting</td>
<td>1st week of April</td>
</tr>
<tr>
<td>4th meeting</td>
<td>1st week of August</td>
</tr>
</tbody>
</table>

**SELECTION BOARD:**
In accordance with clause 1 of Rules of Business of the Selection Board framed by the Syndicate in its 03/97 meeting held on 31.03.1997, meeting of the Selection Board shall be convened as and when required under the directions of the Vice Chancellor. Normally the Selection Board will meet as per following Schedule:

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st meeting</td>
<td>1st week of March</td>
</tr>
<tr>
<td>2nd meeting</td>
<td>1st week of June</td>
</tr>
</tbody>
</table>

**FINANCE COMMITTEE:**
In accordance with clause 1 of Rules of Business of the Finance Committee framed by the Syndicate in its 03/97 meeting held on 31.03.1997 amendment in 5/98 meeting of the Syndicate, meeting of the Finance Committee shall be convened as and when required under the directions of the Vice Chancellor. Normally the Finance Committee will meet as per following schedule:

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st meeting</td>
<td>Last week of February /March</td>
</tr>
<tr>
<td>2nd meeting</td>
<td>Last week of September</td>
</tr>
</tbody>
</table>

### CONVOCATION/ INDUSTRIAL EXHIBITION/ STUDENTS WEEK/ BOOK FAIRE/ MULTI TOPIC CONFERENCE

**CONVOCATION:**
University Convocation 1st week of September

**INDUSTRIAL EXHIBITION:**
Industrial Exhibition June/July (During Summer Vacation)

**STUDENTS WEEK:** Following events will be held during this week
Open House, Sports, Meena Bazar, Debates, Mushaera, Faculty – Student Match

**BOOK FAIRE:**
Book Fare May 11 to 13, 2012

**MULTI TOPIC CONFERENCE:**
Multi Topic Conference June/July (During Summer Vacations)
### FALL SEMESTER (2011): (POSTGRADUATE)

<table>
<thead>
<tr>
<th>Event</th>
<th>Entries</th>
<th>Zone</th>
<th>Organizing University</th>
<th>Managers Meeting Date</th>
<th>Competition Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration, Dues Payment (without late fee)</td>
<td></td>
<td></td>
<td></td>
<td>11th August 2011 to 13th August 2011</td>
<td></td>
</tr>
<tr>
<td>Classes Start</td>
<td></td>
<td></td>
<td></td>
<td>15th August 2011</td>
<td></td>
</tr>
<tr>
<td>Last day for dues payment with late fee fine</td>
<td></td>
<td></td>
<td></td>
<td>25th August 2011</td>
<td></td>
</tr>
<tr>
<td>Change of Courses</td>
<td></td>
<td></td>
<td></td>
<td>30th August 2011</td>
<td></td>
</tr>
<tr>
<td>Mid Semester Examinations</td>
<td></td>
<td></td>
<td></td>
<td>21st October 2011 to 27th October 2011</td>
<td>21st November 2011</td>
</tr>
<tr>
<td>Withdrawal of Courses</td>
<td></td>
<td></td>
<td></td>
<td>21st November 2011</td>
<td></td>
</tr>
<tr>
<td>Announcement of Final Examination Date by Controller of Examinations</td>
<td></td>
<td></td>
<td></td>
<td>5th December 2011</td>
<td></td>
</tr>
<tr>
<td>Classes Terminate</td>
<td></td>
<td></td>
<td></td>
<td>15th December 2011</td>
<td></td>
</tr>
<tr>
<td>Make-up Classes</td>
<td></td>
<td></td>
<td></td>
<td>16th December 2011 to 23rd December 2011</td>
<td></td>
</tr>
<tr>
<td>Final Examinations</td>
<td></td>
<td></td>
<td></td>
<td>24th December 2011 to 31st December 2011</td>
<td></td>
</tr>
<tr>
<td>Start of Spring Semester</td>
<td></td>
<td></td>
<td></td>
<td>15th January 2012</td>
<td></td>
</tr>
</tbody>
</table>

### INTERVARSITY EVENTS REVISED SCHEDULE 2011-12

<table>
<thead>
<tr>
<th>S#</th>
<th>Event</th>
<th>Entries</th>
<th>Zone</th>
<th>Organizing University</th>
<th>Managers Meeting Date</th>
<th>Competition Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bodybuildings</td>
<td>18</td>
<td>Final</td>
<td>University of Vet &amp; Ani Sc, Lahore</td>
<td>10.11.11</td>
<td>11.11.11</td>
</tr>
<tr>
<td>2</td>
<td>Athletics</td>
<td>40</td>
<td>Final</td>
<td>University of Peshawar, Peshawar</td>
<td>25.11.11</td>
<td>26.11.11</td>
</tr>
<tr>
<td>3</td>
<td>Tennis</td>
<td>22</td>
<td>Final</td>
<td>Govt. College University Lahore</td>
<td>01.02.12</td>
<td>02.02.12</td>
</tr>
<tr>
<td>4</td>
<td>Chess</td>
<td>29</td>
<td>Final</td>
<td>University of Faisalabad, Faisalabad</td>
<td>19.02.12</td>
<td>20.02.12</td>
</tr>
<tr>
<td>5</td>
<td>Rifle Shooting</td>
<td>12</td>
<td>Final</td>
<td>Agriculture University, Faisalabad</td>
<td>19.02.12</td>
<td>20.02.12</td>
</tr>
<tr>
<td>6</td>
<td>Mountaineering</td>
<td>20</td>
<td>Final</td>
<td>Int. Islamic University Islamabad</td>
<td>01.03.12</td>
<td>02.03.12</td>
</tr>
<tr>
<td>7</td>
<td>Rovering (Treking, Hiking)</td>
<td>25</td>
<td>Final</td>
<td>University of Engg. &amp; Tech. Lahore</td>
<td>03.03.12</td>
<td>04.03.12</td>
</tr>
<tr>
<td>8</td>
<td>Tug of War</td>
<td>22</td>
<td>Final</td>
<td>Bahauddin Zakariya University, Multan</td>
<td>09.03.12</td>
<td>10.03.12</td>
</tr>
<tr>
<td>9</td>
<td>Gymnastics</td>
<td>12</td>
<td>Final</td>
<td>Govt. College University Lahore</td>
<td>02.04.12</td>
<td>03.04.12</td>
</tr>
<tr>
<td>10</td>
<td>Rowing</td>
<td>11</td>
<td>Final</td>
<td>University of Lahore, Lahore</td>
<td>06.04.12</td>
<td>07.04.12</td>
</tr>
<tr>
<td>11</td>
<td>Water Polo</td>
<td>10</td>
<td>Final</td>
<td>Govt. College University Lahore</td>
<td>14.04.12</td>
<td>15.04.12</td>
</tr>
<tr>
<td>12</td>
<td>Swimming</td>
<td>23</td>
<td>Final</td>
<td>University of Engg. &amp; Tech. Lahore</td>
<td>14.04.12</td>
<td>15.04.12</td>
</tr>
<tr>
<td>13</td>
<td>Table Tennis</td>
<td>15</td>
<td>C</td>
<td>COMSATS, Islamabad</td>
<td>08.11.11</td>
<td>09.11.11</td>
</tr>
<tr>
<td>14</td>
<td>Football</td>
<td>13</td>
<td>C</td>
<td>National Univ.of Sciences &amp; Tech, Isb</td>
<td>20.12.11</td>
<td>21.12.11</td>
</tr>
<tr>
<td>15</td>
<td>Basketball</td>
<td>10</td>
<td>C</td>
<td>Int. Islamic University Islamabad</td>
<td>02.01.12</td>
<td>03.01.12</td>
</tr>
<tr>
<td>16</td>
<td>Badminton</td>
<td>13</td>
<td>C</td>
<td>Arid Agriculture Uni Rawalpindi</td>
<td>25.01.12</td>
<td>26.01.12</td>
</tr>
<tr>
<td>17</td>
<td>Cricket</td>
<td>15</td>
<td>C</td>
<td>Quaid-i-Azam University, Islamabad</td>
<td>05.02.12</td>
<td>06.02.12</td>
</tr>
<tr>
<td>18</td>
<td>Volleyball</td>
<td>10</td>
<td>C</td>
<td>Quaid-i-Azam University, Islamabad</td>
<td>23.02.12</td>
<td>24.02.12</td>
</tr>
<tr>
<td>19</td>
<td>Hockey</td>
<td>7</td>
<td>C</td>
<td>Bahria Univesiy, Islamabad</td>
<td>30.03.12</td>
<td>31.03.12</td>
</tr>
</tbody>
</table>

**Women Events**

<table>
<thead>
<tr>
<th>S#</th>
<th>Event</th>
<th>Entries</th>
<th>Organizing University</th>
<th>Managers Meeting Date</th>
<th>Competition Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Badminton</td>
<td>30</td>
<td>Agriculture University, Faisalabad</td>
<td>28.11.11</td>
<td>29.11.11</td>
</tr>
<tr>
<td>21</td>
<td>Tennis</td>
<td>16</td>
<td>University of the Punjab, Lahore</td>
<td>18.04.12</td>
<td>19.04.12</td>
</tr>
</tbody>
</table>
UNIVERSITY OF ENGINEERING AND TECHNOLOGY - TAXILA  / POSTGRAD PROSPECTUS 2011

FORMAT - A

UNDEARTAKING - FULL TIME
(ON STAMP PAPER OF RS. 100/-)

I, Mr./Miss/Mrs. ____________________________________________________________, hereby undertake that

s/o, d/o, w/o Mr. __________________________________________________________, herby undertake that

I will complete my M.Sc/PhD Degree Course, within the prescribed time limit. In case I fail to complete it,

I will make no appeal/request to extend this limit and return all Fee/stipend paid to me by the university.

Date:___________     Signature:____________________________________

Place:___________     Address:  ____________________________________

____________________________________

FORMAT - B

UNDEARTAKING - PART TIME
(ON STAMP PAPER OF RS. 100/-)

I, Mr./Miss/Mrs. ____________________________________________________________

s/o, d/o, w/o Mr. __________________________________________________________, hereby undertake that

I will complete my M.Sc/PhD Degree Course, within the prescribed time limit. In case I fail to complete it,

I will make no appeal/request to extend this limit.

Date:___________     Signature:____________________________________

Place:___________     Address:  ____________________________________

____________________________________