SWEDISH

COLLEGE OF ENGINEERING & TECHNOLOGY
WAH CANTT

UNDERGRADUATE

PROSPECTUS

2022

KNOWLEDGE | SKILL | ATTITUDE | VALUES

SWEDISH

College of Engineering & Technology

Affiliated with

University of Engineering and Technology (UET), Taxila

Accredited by

Pakistan Engineering Council (PEC)

Accredited by

National Computing Education Accreditation Council (NCEAC)

DISCLAIMER

This prospectus is informational and should not be taken as binding on the college. Each aspect of the educational setup, from the admission procedure or criteria to the examination regulation or displace, requires continuing review by the competent authorities. The college therefore reserves the right to change any rules and regulations applicable to students whenever it is deemed appropriate or necessary.


بسم الله الرحمن الرحيم

VISION

"To be a quality institute committed to excellence for producing professional graduates and potential leaders to serve the humanity and contribute to socioeconomic development through their knowledge and skills."

MISSION

"To deploy the best possible teaching practices and pursue excellence to produce professional graduates in an ethical environment for the development of prosperous" society."

CORE VALUES

- Outcome-Based Education
- Teamwork
- Discipline
- Integrity

CONTENTS

Founder's Message

It is a well-known fact that the Engineering and Technology is advancing very swiftly in this modern age, and that has completely revolutionized the industrial, agricultural, and commercial sectors.

Keeping in view the fast global technological advancements, we are committed to provide quality engineering and technical education. The establishment of Swedish College of Engineering and Technology (SCET) at Wah Cantt will prove to be a blessing for the people in general and the aspirant engineering and technology candidates and provide them an opportunity to seekeducation in their chosen fields to serve their homeland, society, and the nation as a whole. To create an enchanting,

Pleasant and learning environment, the purpose-built college building is the state-of-art, laboratories, library, classrooms, sports facilities etc. We have enrolled highly qualified, dedicated, and experienced faculty to impart quality education and to equip the students not only with the professional and technical knowledge but to create confidence in them.

The prospectus of this session has been prepared to provide the candidates desirous of seeking admission in B.Sc. Engineering Programs, information about the courses offered by Swedish College of Engineering and Technology, Wah Cantt. In addition, the information about the selection procedure, available seats, rules, and procedures are also briefly stated here.

We believe in strict discipline and desire the students to refrain themselves from indulging in any unlawful, indecent, and anti-social activities so that they may achieve their academic excellence in a soothing and tranquil environment.

Zarrar Hussain Butt
Founder

Message from the Principal

A human society is known by its moral values, social dignity, and a promising vibrancy among its youth. Verily it is the'Education' which propagates sanity and visionacross the canvas of a society and regulates itsindicators optimally.

However, in the present-day world, the rapid flow of information and an ever-growing hunger for career development has prompted a fierce competition for professional education. Yet it is only the quality institutions committed to deliver outcome-based education which sustain and stay in the arena. Only they can attract the students and can shape their life profiles. Alhamdulillah, Swedish College of Engineering & Technology Wah Cantt lies in such a valued contingent of institutions in Pakistan. It is disseminating quality engineering knowledge and skills to the youth and is widely trusted in the society.

We promote active learning and effective practices in teaching. Our faculty is dynamic and competent, structures are lofty and impressive, and norms are stable and cherishing. We have well-equipped laboratories, a precious central library, spacious classrooms, and a students' hostel just at our doorsteps. Our institutions are organized and disciplined, and we strive to deliver excellence in education providing the students a secure and fosteringenvironment.

The Swedish College of Engineering & Technology Wah Cantt enjoys its affiliation from University of Engineering & Technology Taxila - a glorious name in the educational world and known since decades. It is also accredited by Pakistan Engineering Council for the undergraduate engineering degree programs in Electrical, Mechanical and Civil Engineering disciplines.

I urge upon my students in general andthe newcomers to take fulladvantage of the wide range of facilities available at the campus, get exposed themselves to new ideas and skills andalways keep going for lucrative hands-on experience. They should also get engaged in cultural activities and remain connected with the globalenvironment and its developments.

Dr Liaquat Ali Najmi
Principal

Organizational Setup

Chairman Board of Management	Mr. Bazigh Hassan
Principal	Prof Dr. Muhammad Sharif Bhatti
Registrar	Dr. Liaquat Ali Najmi
Executive Director (HR & Finance)	Lt. Col. (R) Khurram Amin Malik
Director (Placement Bureau)	Lt. Col. (R) Arshad Mahmud
Director (Academics & Research)	Prof. Dr. Rafi Javed Qureshi
Director (Quality Enhancement Cell -QEC)	Prof. Dr. Umar Farooq
Director (Student Affairs)	Engr Tahir Mehmood
Controller of Examinations	Lt. Col. (R) Arshad Mahmud

Civil Engineering Department

Head of Department	Engr Dr. Tariq Ali
Course Coordinator	Engr Syed Haroon Ali Shah
Lab Coordinator	Engr Syed Haroon Ali Shah
Library Coordinator	Engr Syed Haroon Ali Shah
Departmental Sports Coordinator	Engr Syed Haroon Ali Shah
Departmental CPD Coordinator	Engr Asad Ali
Departmental Office Coordinator	Touseef Waheed
Final Year Design Project Coordinator	Engr Osama Zaid
Student Wellness Counselor	Engr Osama Zaid
Student Career Counselor	Engr Syed Haroon Ali Shah
Academic Counselor/Advisor (2K19)	Engr Asad Ali
Academic Counselor/Advisor (2K20)	Engr Osama Zaid
Academic Counselor/Advisor (2K21)	Engr Ghulam Abbas
Outcome Based Education (OBE) – Focal Person	Engr Prof. Dr. Daulat Khan
Departmental Quality Assurance – Focal Person	Engr Dr. Tariq Ali
Departmental Course File Auditor – Focal Person	Engr Kiffayat Ullah
Departmental Semester Committee – Focal Person	Engr Syed Haroon Ali Shah

Basic Sciences & Humanities Department

Head of Department	Kausar Ali
Course Coordinator	Ali Murad
R & D Coordinator	Kausar Ali
Departmental Sports Coordinator	Kausar Ali
Library Coordinator	Muhammad Iqbal
Student Wellness Counselor	Muhammad Iqbal
Student Career Counselor	Ali Murad
Outcome Based Education (OBE) – Focal Person	Ali Murad
Departmental Course File Auditor – Focal Person	Muhammad Iqbal

Electrical Engineering Department

Head of Department	Engr Prof. Dr. Umar Farooq
Course Coordinator	Engr Hamid Ali
Lab Coordinator	Engr Ahsan Rafiq
R & D Coordinator	Engr Ahsan Rafiq
Library Coordinator	Engr Muhammad Usman
Departmental Sports Coordinator	Engr Muhammad Asif
Departmental Office Coordinator	Muhammad Sohaib
Final Year Design Project Coordinator	Engr Syed Bilal Arshad
Student Wellness Counselor	Engr Dr. Mian Imtiaz ul Haq
Student Career Counselor	Engr Prof. Dr. Umar Farooq
Academic Counselor/Advisor (2K19)	Engr Hassam Aziz
Outcome Based Education (OBE) – Focal Person	Engr Hamid Ali
Departmental Quality Assurance – Focal Person	Engr Prof. Dr. Umar Farooq
Departmental Course File Auditor – Focal Person	Engr Hamid Ali
Departmental Semester Committee – Focal Person	Engr Hamid Ali

Mechanical Engineering Department

Head of Department	Engr Dr. Liaquat Ali Najmi
Course Coordinator	Engr Muhammad Aqib
Lab Coordinator	Engr Tahir Mehmood
R & D Coordinator	Engr Dr. Zaheer ul Hassan
Library Coordinator	Engr Haseeb ur Rehman
Departmental Sports Coordinator	Engr Tahir Mehmood
Departmental CPD Coordinator	Engr Muhammad Nouman
Departmental Office Coordinator	Farhan Tariq
Departmental Health and Safety Coordinator	Engr Dr. Zaheer ul Hassan
Departmental Timetable Coordinator	Engr. Ammar Naseer
SCET Alumni Society (MED)	Engr Fawad Yousaf Malik
Final Year Design Project Coordinator	Engr Muhammad Aqib
Student Wellness Counselor	Engr Dr. Zaheer ul Hassan
Student Career Counselor	Engr Tahir Mehmood
SCET Tech society (ASHRAE & ASME)	Engr. Muhammad Nouman
Academic Counselor/Advisor (2K19)	Engr Rehman Khan
Academic Counselor/Advisor (2K20)	Engr Aqib Mehmood
Academic Counselor/Advisor (2K21)	Engr Ammar Naseer
Outcome Based Education (OBE) – Focal Person	Engr Haseeb ur Rehman
Departmental Quality Assurance – Focal Person	Engr Dr. Liaquat Ali Najmi
Departmental Course File Auditor – Focal Person	Engr Muhammad Nouman
Departmental Semester Committee – Focal Person	Engr Dr. Liaquat Ali Najmi

SWEDISH COLLEGE OF ENGINEERING AND TECHNOLOGY, WAH CANTT

Introduction

Swedish College of Engineering and Technology, Wah Cantt, is an upcoming engineering college in the private sector surrounded by expanding industrial neighborhood. The college is established by a registered trust, Al-Asar Gujranwala Technical Education Society, formed for the promotion of technical education in the country.

The trust has already been running eleven technical institutes for the last 20 years, thus catering for the needs of skilled manpower for the growing industry of the country. With 20 years' experience in delivering technical education, now the trust has established engineering colleges at Wah Cantt, Gujranwala and Rahim Yar Khan. The college at Wah Cantt serve the population of Northern Punjab and K.P.K.

Presently, the college is offering undergraduate programs in the fields of Civil Engineering, Electrical Engineering and Mechanical Engineering. The College is affiliated with the University of Engineering and Technology (UET), Taxila. Four years B.Sc. programs in Civil, Electrical and Mechanical Engineering are accredited by the Pakistan Engineering Council (PEC). On successful completion ofprogram requirements, engineering degrees are awarded to SCET graduates by University ofEngineering and Technology (UET), Taxila.

City of Wah Cantt

Wah Cantt is a cantonment city located in the North-West of Islamabad at a distance of 50 km. It is a valley surrounded by hills from all directions. Wah has always been a favorite place of the Mughal Rulers. They built here a garden known as Wah Garden, bisecting Hassan Abdal and Wah Cantt.

The City of Taxila

The antique name 'Takshasila' means the city of cut stones. Taxila has gained worldwide eminence for its archaeological sites. It attained a remarkably mature level of development under the great Ashoka. Then appeared the Indo-Greek descendants of Alexander's warriors in 327 BC and finally came the most creative period of Gandhara. Later Taxila became a renowned Centre of learning, philosophy, art and religion, Julian being a Centre of excellence of that age. Pilgrims and travelers were attracted to it from as far away as China and Greece.

City of Hassan Abdal

Back on the GT road you reach Hassan Abdal, a pleasant little town particularly associated with Sikh's shrine of Punjab Sahib. Sikh pilgrims visit the shrine, from India and all over the world, every year. Hassan Abdal has been a holy place for various religious groups throughout the ages largely because of its springs. In the 7th century Chinese Buddhist pilgrim Hsuan Tsand reported that the place was sacred to the Buddhists and that there was a tank dedicated to a serpent King, Elapatra. Now-a-days it has become one of the largest industrial zones of Pakistan.

Swedish College Campus

The College campus is located on the main G.T. Road, opposite Lala Rukh, on the outskirts of Wah Cantt. Frequent public transport provides an easy access to the College.

The purpose-built campus is spread over an area of 25 kanals with beautiful lawns, an approximate covered area of 168,000 square feet and a garden with exotic imported ornamental trees and flowers.

The main building has spacious ventilated classrooms and well- equipped laboratories. There are enough workstations which provide students the opportunity of hands-on experience. A new building covering 50,000 square feet has been constructed and is since Spring 2017.

Cafeteria

A cafeteria is established with sufficient seating space, where hygienic food, snacks, tea, and beverages are available. The menu of the cafeteria is being run on the desires of studentsand faculty of the college.

Academic Programs

The Swedish College of Engineering and Technology (SCET) currently offers four years B.Sc. degree program in the following disciplines:

- Civil Engineering
- Electrical Engineering
- Mechanical Engineering
- Computer Sciences

The college is affiliated with the University of Engineering and Technology Taxila. Academic rules and regulations of UET about academic matters and examination are strictly followed. The academic system at the college is the semester system. There are eight semesters for four years B.Sc.Engineering program in every degree awarding discipline.

Outcome Based Education (OBE)

Pakistan became signatory of Washington Accord in June 2017 through Pakistan Engineering Council (PEC) Islamabad. The engineering programs in Pakistan must adopt Outcome Based Education (OBE) system, to get PEC Accreditation.
In OBE system, twelve Washington Accord (WA) graduate attributes are to be attained by all studentsby the time of graduation. In this system, student learning is focus. It is top-down approach where outcomes are specified first, and curriculum / teaching methodology is designed to achievethe desired outcomes.

Here WHAT and WHETHER is important as compared to WHEN and HOW.

The college incorporated partial implementation of OBE in 2014. Complete shifting to OBE system was decided in 2016 and Spring semester 2017 was started under OBE system. Self-AssessmentReports (SAR's) of Electrical Engineering, Mechanical Engineering and Civil Engineering Department were submitted to PEC and Accreditation Visit was conducted in May 2019.

All the three engineering disciplines are accredited by Pakistan Engineering Council (PEC) nowunder Level-II of OBE system of accreditation and the programs qualify for international system of accreditation (Washington accord).

Both the faculty and student are participating enthusiastically in implementing the OBE system atSCET Wah Cantt.

Department of
CIVIL ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

Program Educational Objectives (PEOs)

PEO 1: To be successful Civil Engineers and serve the community competently by application of professional knowledge and skills.

PEO 2: To be professionals fulfilling the academic and industrial requirements by applying modern tools, using communication skills and effective managements as an individual and a team member .

PEO 3: To understand need of society, follow ethical practices in an engineering environment and seek continuous technological developments.

Program Learning Outcomes (PLOs)

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

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

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

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

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

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

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

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

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

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

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

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

DEPARTMENT OF CIVIL ENGINEERING

Head of Department

Dr. Tariq Ali

Professor

Dr. M. Sharif Bhatti
BSc Engg (UET Lahore)
MSc Engg (Univ, College, London)
PhD (University of London)

Dr. Daulat Khan
BSc Engg (UET, Peshawar)
MSc Engg (University of STRATHCLYDE)
PhD (THE GEORGE WASHINGTON UNIVERSITY)

Assistant Professor

Dr. Nadeem Anwar
BSc Engg (NUST, Islamabad)
MSc Engg (NUST, Islamabad)
PhD (NUST, Islamabad)

Dr. Tariq Ali
BSc Engg (UET, Peshawar)
MSc Engg (UET, Peshawar)
PhD (UET, Taxila)

Nasir-ud-din
BSc Engg (UET, Taxila)
MSc Engg (UET, Taxila)

Lecturers

Syed Haroon Ali Shah
BSc Engg (CECOS, Peshawar)
MSc Engg (CECOS, Peshawar)
PhD* (UET, Taxila)

Osama Zaid
BSc Engg (SCET, Wah)
MSc Engg (NUST, Risalpur)

Asad Ali
BSc Engg (UET, Lahore)
MSc Engg (UET, Taxila)

Adil Nawaz
BSc Engg (UET, Taxila)
MSc Engg (NUST, Islamabad)

Ghulam Abbas
BSc Engg (SCET, Wah)
MSc Engg (UET, Taxila)

Sarmad Mehmood
BSc Engg (UET, Taxila)
MSc Engg (UET, Taxila)

Kiffayat Ullah
BSc Engg (UET, Peshawar)
MSc Engg (UET, Taxila)

Lab Engineers

Tariq Saeed
BSc Engg (UET, Taxila)
MSc Engg* (UET, Taxila)

Hamza Malik
BSc Engg (SCET, Wah)
MSc Engg (NUST, Islamabad)

Ali Abbas
BSc Engg (SCET, Wah)
MSc Engg (Nust, Islamabad)

Teaching Assistant

Abdul Saboor Khan
BSc Engg (SCET, Wah)
MSc Engg (UET, Taxila)

Asmat Ullah
BSc Engg (SCET, Wah)
MSc Engg* (UET, Taxila)

Usman Ali
BSc Engg (SCET, Wah)
MSc Engg* (UET, Taxila)

Abdul Muqeet
BSc Engg (SCET, Wah)
MSc Engg (UET, Taxila)

(*) MSc/PhD in Progress

THE DEPARTMENT

Civil Engineers cater for the national needs of buildings, highways, dams, bridges, irrigation network and water supply systems, and are the world's largest users of building materials. Department of Civil Engineering has been established to disseminate civil engineering education. Plans are also underway to establish the Advanced Centers of Research in this field.

The Department offers full-time course of four years duration leading to the degree of B.Sc. in Civil Engineering. At the undergraduate level, emphasis is laid on the fundamental concepts and principles constituting the basis of Civil Engineering practice.

The students are assigned projects involving design, construction and laboratory investigation for self-directed execution. The classroom and laboratory work are supplemented by 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.

THE DEPARTMENT

The department has following well-equipped laboratories to meet the academic requirements of students and researchers.

1. Engineering Mechanics Lab/Structure Lab
2. Surveying Lab
3. Strength of Materials Lab
4. Computing/CAD Lab
5. Soil Mechanics Lab
6. Fluid Mechanics Lab
7. Concrete Lab
8. Transportation Lab
9. Environmental Lab
10. Drawing Hall
11. Hydraulics & Irrigation Lab

COURSES UNDER SEMESTER SYSTEM
BSC CIVIL ENGINEERING

1st Year			
Sem.	**Course Title**	**Code**	**CHs**
1st SEMESTER	Engineering Drawing	CE-101	1+2
	Engineering Mechanics	NS-102	2+1
	Engineering Geology	ES-103	2+0
	Surveying-I	CE-104	2+1
	Calculus and Analytical Geometry	MA-105	3+0
	Islamic Studies	HU-112	2+0
		Sem. Cr. Hr. =	**12+4 (16)**
2nd SEMESTER	Surveying-II	CE-106	2+2
	Engineering Materials	CE-107	2+1
	Professional Ethics	HU-108	2+0
	Deferential Equations	MA-109	3+0
	Pakistan Studies	HU-110	2+0
	Professional English	HU-111	2+0
		Sem. Cr. Hr. =	**13+3 (16)**
		1st Year Cr. Hr. =	**32**

2nd Year			
Sem.	**Course Title**	**Code**	**CHs**
3rd SEMESTER	Fluid Mechanics-I	CE-201	2+1
	Properties of Concrete	CE-202	2+1
	Engineering Practice	CE-203	2+0
	Numerical Analysis & Computer Programing	MA-204	3+1
	Hazards and Disaster Management	MS-212	3+0
	Introduction to GIS and RS	NS-214	2+0
		Sem. Cr. Hr. =	**14+3 (17)**
4th SEMESTER	Theory of Structures-I	CE-206	3+0
	Strength of Materials-I	CE-207	3+1
	Soil Mechanics-I	CE-208	2+1
	Drawing, Estimation & Construction	CE-209	2+1
	Probability and Statistics	MA-213	3+0
	Communication Skills & Technical Report Writing	HU-211	3+0
		Sem. Cr. Hr. =	**16+3 (19)**
		2nd Year Cr. Hr. =	**36**

3rd Year			
Sem.	**Course Title**	**Code**	**CHs**
5th SEMESTER	Theory of Structures-II	CE-301	3+1
	Strength of Materials-II	CE-302	3+1
	Soil Mechanics-II	CE-303	3+1
	Construction, Planning & Management	MS-304	2+1
	Hydrology and Water Resources	CE-305	2+1
		Total Cr. Hr. =	**13+5 (18)**
6thSEMESTER	Environmental Engineering-I	CE-306	2+0
	Reinforced Concrete-I	CE-307	3+0
	Design of Steel Structures	CE-308	3+0
	Fluid Mechanics-II	CE-309	2+1
	Transportation Engineering-I	CE-310	2+1
	Computer Applications	CE-311	2+1
		Total Cr. Hr. =	**14+3 (17)**
		3rd Year Cr. Hr. =	**35**

4th Year			
Sem.	**Course Title**	**Code**	**CHs**
7th SEMESTER	Environmental Engineering-II	CE-401	2+1
	Reinforced Concrete-II	CE-402	3+1
	Hydraulics Engineering	CE-403	2+1
	Transportation Engineering-II	CE-404	2+1
	Foundation Engineering	CE-405	2+1
	Project	CE-406(A)	0+3
		Total Cr. Hr. =	**11+8 (19)**
8th SEMESTER	Structural Engineering	CE-407	3+0
	Irrigation Engineering	CE-408	2+0
	Analysis and Design of Structures	CE-409	2+2
	Entrepreneurship & Leadership	MS-411	2+0
	Project	CE-406(B)	0+3
		Total Cr. Hr. =	**9+5 (14)**
		4th Year Cr. Hr. =	**33**

Department of
ELECTRICAL ENGINEERING

DEPARTMENT OF ELECTRICAL ENGINEERING

Program Educational Objectives (PEOs)

PEO 1: To be successful Electrical Engineers and serve the community competently by application of professional knowledge and skills.

PEO 2: To be professionals fulfilling the academic and industrial requirements by applying modern tools, using communication skills and effective managements as an individual and as a team member and as a leader .

PEO 3: To understand need of society, follow ethical practices in an engineering environment and seek continuous technological developments.

Program Learning Outcomes (PLOs)

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

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

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DEPARTMENT OF ELECTRICAL ENGINEERING

Head of Department

Prof. Dr. Umar Farooq

Assistant Professor

Dr Mian Imtiaz ul Haq
BSc Engg (UET Peshawar)
MSc Engg (UET Peshawar)
PhD (Hanyang Uni. S. Korea)

Lecturer

Hamid Ali
BSc Engg(CUI, ATB)
MSc Engg(CUI, Wah)
PhD* (CUI Wah)

Syed Bilal Arshad
BSc Engg (UET Taxila, SCET Wah)
MSc Engg (CUI, Wah)
PhD* (Tianjin, China)

Muhammad Asif
BSc Engg (UET Taxila, SCET Wah)
MSc Engg (CUI, Wah)

Hassam Aziz
BSc Engg (UET Taxila, SCET Wah)
MSc Engg (NUST)

Ahsan Rafiq
BSc Engg (UET Lahore)
MSc Engg (UET Taxila)

(*) MSc/PhD in Progress

Professor

Prof. Dr. Umar Farooq
BSc Engg (UET Lahore)
MSc Engg (Uni of Utsunomiya, Japan)
PhD (UET, Taxila)

Lab Engineer

Mohsin Munir
BE (Hamdard, Islamabad)
MSc Engg (CUI Islamabad)

Muhammad Usman
BSc Engg (SCET, Wah)
MSc Engg (CUI Attock)

THE DEPARTMENT

The educational objectives of the undergraduate program of the Department of Electrical Engineering are to develop professional skills in students and to prepare them for immediate employment in the field of Electrical Engineering. The department aims to develop abilities in the students for the application of the necessary mathematical tools, scientific basics, and fundamental knowledge of Electrical Engineering.

The Department offers full time course of four years (i.e., eight semesters) duration leading to the degree of B.Sc. in Electrical Engineering. It has a combination of young and experienced faculty. Department has Two PhDs having experiences ranging from eight to Thirty-Five years in academia and industry.

The department has well equipped laboratories for undergraduate classes and the equipment is being upgraded on continuous basis.

COURSES OF STUDY

All courses have a core set of subjects, allowing students to specialize further in electrical subjects. Electrical Engineering Course content includes analogue, digital and solid-state electronics, digital control systems and electromagnetism, with in- depth study of mathematics and computers inthe context of electrical engineering. Practical skills in designing, making, and testing the electrical systems are developed through laboratory work and computer-aided design.

Laboratory projects are encouraged in second and third years whereas final year projects are assigned in consultation with industrial experts.

The campus is in an industrial environment and the students have a fair chance of industrialvisits. The Elective Courses are included inthe program to provide more breadth to the knowledge. In 3rd and 4th years, the students can register for the Elective Courses according to their interests. The program is accredited by the Pakistan Engineering Council as satisfying the academic requirements for Professional Engineer (PE) status.

LABORATORIES

The Department has a number of established labs that cover all the different domains of electrical engineering. It includes "foundation engineering" labs such as Linear Circuit Analysis, Basic Electrical Workshop, Electronic Circuit Design & Devices, Engineering Drawing, Digital Logic Design and Microprocessor Systems. Some Core (i.e., breadth and depth) Labs include Electrical Machine, Instrumentation & Measurement, Linear Control Systems and Power Systems (Generation, Distribution, Transmission and Protection, Operation & Control) Lab.

These Labs are equipped with respective trainers, on which, hardware experiments (based on the components) are performed by the students. In These Labs state-of-the-art hardware and software are provided to students to have strong practical experience.
The Department has the following Labs:

1. Linear Circuit Analysis
2. Basic Electrical Workshop
3. Electronics
4. Digital Logic Design
5. Micro Computer Systems
6. Electromechanical Systems (Machine)
7. Instruments & Measurement
8. Linear Control Systems
9. Power Systems
10. Computer
11. Projects Lab
12. Power Generation
13. Signals & Systems
14. Communication Systems

MECHANICAL COURSES UNDER SEMESTER SYSTEM

BSc Electrical Engineering

Sem. No.	Sr. No.	Course Code	Course Title	Credit Hours	Knowledge Area	Pre-requisite(s)
1	1.	EE-111	Linear Circuit Analysis	3	Electrical Engineering Foundation	Freshman Standing
	2.	EE-111-L	Linear Circuit Analysis Lab	1		Co-requisite: Linear Circuit Analysis
	3.	EE-112-L	Workshop Practice Lab	1	Electrical Engineering Foundation	Freshman Standing
	4.	NS-113	Applied Physics	3	Natural Sciences	Freshman Standing
	5.	NS-113-L	Applied Physics Lab	1		Co-requisite: Applied Physics
	6.	NS-114	Calculus & Analytical Geometry	3	Natural Sciences	Freshman Standing
	7.	HU-115	Functional English	2	Humanities and Social Sciences	Freshman Standing
	8.	HU-116	Islamic Studies	2	Humanities and Social Sciences	Freshman Standing
	Total for 1st Semester			**16**		
2	1.	EE-121	Electronic Devices & Circuits	3	Electrical Engineering Foundation	Freshman Standing
	2.	EE-121-L	Electronic Devices & Circuits Lab	1		Co-requisite: Electronic Devices & Circuits
	3.	EE-122-L	Engineering Drawing Lab	1	Electrical Engineering Foundation	Freshman Standing
	4.	CS-123	Programming Fundamentals	3	Computing	Freshman Standing
	5.	CS-123-L	Programming Fundamentals Lab	1		Co-requisite: Programming Fundamentals
	6.	IDE-124	Engineering Mechanics	3	IDEE	Freshman Standing
	7.	IDE-124-L	Engineering Mechanics Lab	1		Co-requisite: Engineering Mechanics
	8.	NS-125	Differential Equations	3	Natural Sciences	Freshman Standing
	9.	HU-126	Pakistan Studies	2	Humanities and Social Sciences	Freshman Standing
	Total for 2nd Semester			**18**		
Total for 1st Year				**34**		

3	1.	EE-211	Electrical Machines	3	Electrical Engineering Core (Breadth)	Linear Circuit Analysis
	2.	EE-211-L	Electrical Machines Lab	1		Co-requisite: Electrical Machines
	3.	EE-212	Digital Logic Design	3	Electrical Engineering Foundation	Sophomore Standing
	4.	ES-212-L	Digital Logic Design Lab	1		Co-requisite: Digital Logic Design
	5.	CS-213	*Computing Elective*	3	Computing	*Mentioned against the list of computing electives*
	6.	CS-213-L	*Computing Elective Lab*	1		*Co-requisite: Same Computing Elective*
	7.	NS-214	Complex Variables & Transforms	3	Natural Sciences	Sophomore Standing
	8.	HU-215	Communication Skills	2	Humanities and Social Sciences	Sophomore Standing
			Total for 3rd Semester	**17**		
4	1.	EE-221	Electrical Network Analysis	3	Electrical Engineering Foundation	Linear Circuit Analysis
	2.	EE-221-L	Electrical Network Analysis Lab	1		Co-requisite: Electrical Network Analysis
	3.	EE-222	Microprocessors & Microcontrollers	3	Electrical Engineering Core (Breadth)	Digital Logic Design
	4.	EE-222-L	Microprocessors & Microcontrollers Lab	1		Co-requisite: Microprocessors & Microcontrollers
	5.	EE-223	Signals & Systems	3	Electrical Engineering Foundation	Sophomore Standing
	6.	EE-223-L	Signals & Systems Lab	1		Co-requisite: Signals & Systems
	7.	EE-224	Probability Methods in Engineering	3	Electrical Engineering Foundation	Sophomore Standing
	8.	NS-225	Linear Algebra	3	Natural Sciences	Sophomore Standing
			Total for 4th Semester	**18**		
			Total for 2nd Year	**35**		

5	1.	EE-311	Linear Control Systems	3	Electrical Engineering Core (Breadth)	Junior Standing
	2.	EE-311-L	Linear Control Systems Lab	1		Co-requisite: Linear Control Systems
	3.	EE-312	Communication Systems	3	Electrical	Junior Standing
	4.	EE-312-L	Communication Systems Lab	1	Engineering Core (Breadth)	Co-requisite: Communication Systems
	5.	EE-313	Electromagnetic Field Theory	3	Electrical Engineering Foundation	Complex Variables & Transforms
	6.	IDE-314	Applied Thermodynamics	3	IDEE	Sophomore Standing
	7.	IDE-314-L	Applied Thermodynamics Lab	1		Co-requisite: Applied Thermodynamics
	8.	NS-315	*Natural Science Elective*	3	Natural Sciences	*Mentioned against the list of natural science electives*
	Total for 5th Semester			**18**		
6	1.	MS-321	*Management Science Elective I*	3	Management Sciences	*Mentioned against the list of management science electives*
	2.	HU-322	*Social Science Elective I*	3		*Mentioned against the list of social science electives*
	3.	HU-323	Technical Report Writing	3	Humanities and Social Sciences	Sophomore Standing
	4.	EE-32##	*Breadth Core I (Restricted Elective)*	3	Electrical Engineering Core (Breadth)	*Mentioned against the list of specialization electives*
	5.	EE-32##-L	*Breadth Core I (Restricted Elective) Lab*	1		*Co-requisite: Same Breadth Core I*
	6.	EE-32##3	*Breadth Core II (Restricted Elective)*	3	Electrical Engineering Core (Breadth)	*Mentioned against the list of specialization electives*
	7.	EE-32##-L	*Breadth Core II (Restricted Elective) Lab*	1		*Co-requisite: Same Breadth Core II*
	Total for 6th Semester			**17**		
Total for 3rd Year				**35**		

7	1.	EE-411	Design Project	3	Senior Design Project	Senior Standing
	2.	MS-412	*Management Science Elective II*	3	Management Sciences	*Mentioned against the list of management science electives*
	3.	HU-413	*Social Science Elective II*	3	Humanities and Social Sciences	*Mentioned against the list of social science electives*
	4.	EE-41##	*Depth Elective I*	3	Electrical Engineering	*Mentioned against the list of specialization*
					Specialization Based Electives (Depth)	*electives*
	5.	EE-41##-L	*Depth Elective I Lab*	1		*Co-requisite: Same Depth Elective I*
	6.	EE-41##	*Depth Elective II*	3	Electrical Engineering Specialization Based Electives (Depth)	*Mentioned against the list of specialization electives*
	7.	EE-41##-L	*Depth Elective II Lab*	1		*Co-requisite: Same Depth Elective II*
			Total for 7th Semester	**17**		
8	1.	EE-421-L	Senior Design Project	3	Senior Design Project	Senior Standing
	2.	EE-42##	*Depth Elective III*	3	Electrical Engineering Specialization Based Electives (Depth)	*Mentioned against the list of specialization electives*
	3.	EE-42##-L	*Depth Elective III Lab*	1		*Co-requisite: Same Depth Elective III*
	4.	EE-42##	*Depth Elective IV*	3	Electrical Engineering Specialization Based Electives (Depth)	*Mentioned against the list of specialization electives*
	5.	EE-42##-L	*Depth Elective IV Lab*	1		*Co-requisite: Same Depth Elective IV*
	6.	EE-42##	*Depth Elective V*	3	Electrical Engineering Specialization Based Electives (Depth)	*Mentioned against the list of specialization electives*
	7.	EE-42##-L	*Depth Elective V Lab*	1		*Co-requisite: Same Depth Elective V*
			Total for 8th Semester	**15**		
			Total for Final Year	**32**		
			Total Credit Hours of 4 Years	**136**		

Computing Electives

Course Title	Pre-requisite(s)
Data Structures & Algorithms	Sophomore Standing
Machine Learning	Sophomore Standing
Software Engineering	Sophomore Standing
Databases	Sophomore Standing
Artificial Intelligence	Sophomore Standing
Mobile Application Development	Sophomore Standing
Web Application Development	Sophomore Standing
Network Security	Sophomore Standing

Natural Science Electives

Course Title	Pre-requisite(s)
Numerical Analysis	Sophomore Standing
Multivariable Calculus	Sophomore Standing
Discrete Mathematics	Sophomore Standing
Chemistry	Sophomore Standing
Biology	Sophomore Standing

Management Science Electives

Course Title	Pre-requisite(s)
Engineering Economics & Management	Junior Standing
Engineering Project Management	Junior Standing
Entrepreneurship	Junior Standing
Principles of Management	Junior Standing
Leadership & Personal Grooming	Junior Standing

Social Science Electives

Course Title	Pre-requisite(s)
Professional Ethics	Junior Standing
Sociology for Engineers	Junior Standing
Critical Thinking	Junior Standing
Organizational Behavior	Junior Standing
Professional Psychology	Junior Standing

Specialization Electives
Power

Course Title		Pre-requisite(s)
9A	**Power System Analysis (Breadth Core I)**	**Electrical Network Analysis**
9B	**Power Distribution & Utilization (Breadth Core II)**	**Electrical Network Analysis**
9C	Instrumentation & Measurements	Linear Circuit Analysis
9D	Power Electronics	Electronic Devices & Circuits
9E	Electrical Power Transmission	Electrical Network Analysis
9F	Power System Protection	Power System Analysis
9G	Power System Operation & Control	Power System Analysis
9H	Renewable Energy Systems	Junior Standing
9I	High Voltage Engineering	Senior Standing
9J	Industrial Automation	Senior Standing
9K	Digital Signal Processing	Signals & Systems
9L	Power Generation	Electrical Machines
9M	Smart Grid	Communication Systems
9N	Electrical Machine Design	Electrical Machines
9O	Industrial Drives	Power Electronics
9P	Advanced Electrical Machines	Electrical Machines
9Q	FACTS & HVDC Transmission	Senior Standing

Communication

Course Title		Pre-requisite(s)
8A	**Electronic Circuit Design (Breadth Core I)**	**Electronic Devices & Circuits**
8B	**Computer Communication Networks (Breadth Core II)**	**Junior Standing**
8C	Instrumentation & Measurements	Linear Circuit Analysis
8D	Power Electronics	Electronic Devices & Circuits
8E	RF & Microwave Engineering	Electromagnetic Field Theory
8F	Digital Image Processing	Signals & Systems
8G	Antenna & Wave Propagation	Electromagnetic Field Theory
8H	Digital Communication	Communication Systems
8I	Optical Communication	Communication Systems
8J	Industrial Automation	Senior Standing
8K	Digital Signal Processing	Signals & Systems
8L	Wireless & Mobile Communication	Communication Systems
8M	Communication Electronics	Communication Systems
8N	Satellite Communication	Communication Systems
8O	Navigation & Radar Systems	Communication Systems

Electronics

Course Title		Pre-requisite(s)
7A	**Electronic Circuit Design (Breadth Core I)**	**Electronic Devices & Circuits**
7B	**Power Electronics (Breadth Core II)**	**Electronic Devices & Circuits**
7C	Instrumentation & Measurements	Linear Circuit Analysis
7D	Optoelectronics	Electronic Devices & Circuits
7E	RF & Microwave Engineering	Electromagnetic Field Theory
7F	Integrated Electronics	Electronic Circuit Design
7G	Antenna & Wave Propagation	Electromagnetic Field Theory
7H	Digital System Design	Digital Logic Design
7I	Industrial Electronics	Electronic Devices & Circuits
7J	VLSI Design	Digital Logic Design
7K	Digital Signal Processing	Signals & Systems
7L	Solid State Device Physics	Electronic Devices & Circuits
7M	Introduction to Nanotechnology	Junior Standing
7N	Biomedical Instrumentation	Senior Standing

Note:

1. Choice of Electives in 7th and 8th semesters will depend on Elective chosen in 6th semester. No student can change the specialization area after choosing any of three areas above in his 6th Semester.
2. The Elective courses offered by the Department in a semester can be changed depending on the availability of teachers and related facilities and will be notified one week before the start of the semester.

Department of
MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

Program Educational Objectives (PEOs)

PEO 1: To be successful Mechanical Engineers and serve the community competently by application of professional knowledge and skills.

PEO 2: To be professionals fulfilling the industrial requirements by applying modern tools, using communication skills and effective managements as an individual and a team member.

PEO 3: To understand need of the society, follow ethical practices in an engineering environment and seek continuous technological developments.

Program Learning Outcomes (PLOs)

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

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

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

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

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

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

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

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

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

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

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

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

DEPARTMENT OF MECHANICAL ENGINEERING

Head of Department

Dr. Liaquat Ali Azhar Najmi

Professor

Dr. Rafi Javed Qureshi
BSc Engg (UET, Lahore)
MSc Engg (Georgia Tech, USA)
PhD (UET, Taxila)

Associate Professor

Dr. Liaquat Ali Azhar Najmi
BSc Engg (UET, Lahore)
MSc Engg (GW Univ, USA)
PhD (RPI, Troy, USA)

Assistant Professor

Dr. Zaheer ul Hassan
BSc Engg (UET Lahore)
MSc Engg (UET Taxila)
PhD (UET Taxila)

Lecturers

Ashiq Hussain
BSc Engg (UET, Lahore)
MSc Engg (UET, Taxila)
MSc Ind. Engg (UN SW, Australia)

Tahir Mehmood
BSc Engg (UET, Peshawar)
MSc Engg (UET, Taxila)
PhD Engg** (UET, Taxila)

Ammar Naseer
BSc (UET, Taxila)
MSc Engg (UET, Taxila)
PhD Engg** (UET, Taxila)

Fawad Yousaf
BSc (SCET-UET, Taxila)
MSc Engg (UET, Taxila)

Haseeb ur Rehman
BSc Engg (SCET-UET Taxila)
MSc Engg (UET, Taxila)

Muhammad Nouman
BSc (UET, Taxila)
MSc Engg (UET, Taxila)

Muhammad Aqib
BSc Engg (UET, Taxila)
MSc Engg (UET, Taxila)

Ghulam Murtaza
BSc (UET, Taxila)
MSc Engg (UET, Taxila)

Lab Engineers / Teaching Assistant

Hassan Kazmi
BSc (SCET-UET, Taxila)
MSc Engg* (UET, Taxila)

Rehman Khan
BSc (WEC, Wah)
MSc Engg* (UET, Taxila)

Aqib Mehmood
BSc (SCET-UET, Taxila)
MSc Engg* (UET, Taxila)

Muhammad Naeem
BSc Engg (SCET-UET, Taxila)
MSc Engg* (UET, Taxila)

(*/**) MSc/PhD Studies in Progress

The Department

Mechanical Engineering is a highly versatile and diversified engineering discipline. On one hand it is concerned with the design of machines and equipment that use energy and convert it into useful work. On the other hand, it deals with the design and development of machines that are used for manufacturing or production equipment. The department is offering a four-year degree program leading to B.Sc. in Mechanical Engineering.

Courses of Study

The Mechanical Engineering courses are built on a strong foundation of mathematical, physical, and computing sciences. Emphasis will be 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. The department offers a series of courses in the following areas:

- Engineering Graphics and CAD
- Thermo-Fluids Engineering
- Applied Mechanics and Design
- Industrial & Manufacturing Engg
- CAD/CAM
- Engineering Management
- I.C. Engines
- HVAC

These courses in Thermal Engineering include Applied Thermodynamics, Refrigeration and Air Conditioning, Heat Transfer and Power Plant. Starting from a basic course in Engineering Mechanics, a series of course is offered in Mechanics of Materials, Mechanics of Machines and Fluid Mechanics.

From Design to Manufacturing

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. 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 Production Automation provide the students further insight to this area.

Additional courses like Engineering Optimization and Industrial Engineering in senior year introduce students to the efficient management of the productive resources. Computer based mechanical engineering concepts have been embedded in various courses like Computer Programming, Machine Design, CAD, and Industrial Engineering etc. SCET 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 and PAF complex at Kamra, HEC, KSB, TIP, CTI, ARL, OGTI, Railway Carriage Factory, Research Establishments of PAEC and a large number of units in the Hattar area.

Laboratories

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

- Engineering Mechanics
- Mechanics of Materials
- Mechanics of Machines
- Basic Workshops
- Refrigeration & A/C
- Thermodynamics
- I.C. Engines
- Heat and Mass Transfer
- Fluid Mechanics
- Measurements & Instrumentation
- Control Engineering
- Advance Manufacturing Systems
- Power Plants / Renewable Energy Technology
- Mechanical Vibrations

Measurement and Instrumentation Lab is equipped with National Instruments ELVIS instrumentation suite comprising Lab View software for data
acquisition and analysis.

In addition, equipment for "Inverted Pendulum" is now added to the list of experiments in Instrumentation Lab. Mechanical Vibrations, Fluid Mechanics and I. C. Engines Labs have been revamped by adding additional equipment and upgrading the existing apparatus with better instrumentation and data acquisition systems.

Labs : New Additions

I.C. Engines: Thermodynamics / I. C. Engines lab has been provided with a new improved I. C. Engine Test bed with an effective Braking system and controls for better student understanding.
Smithy shop: New Induction furnace has been provided
Mechanical Vibrations: Universal Vibration apparatus has been upgraded with better controls and data acquisition system
Fluid Mechanics: Sub-sonic wind tunnel and a reciprocating pump test rig has been added with complete instrumentation
New rooms have been allocated for independent labs for following subjects:
Refrigeration & Air Conditioning: Additional apparatus for Vapor Absorption system study, Ice Plant trainer and chiller experimental apparatus has been provided.
Completely new lab covering Advanced Manufacturing Systems has been established with two (2) CNC Machining Centers, CNC Injection Molding Mach9ine and CMM apparatus, complementing the already available systems like, 3D Printer.

Power Plants lab has been dedicated for Mechanical Engineering Department with concept apparatus for Solar, Steam, Air, Coal gasification and waterpower generation systems. Renewable Energy Technology Lab experiments can also be performed in this lab.

New Control Engineering Lab with Pneumatic and Hydraulic control system apparatus based on PLC controls has been established separately for Mechanical Engineering Department. This lab also has eight (8) terminals for students to perform experiments using Control System Simulation Lab setup.

Metallurgical Microscope

It is available in the Engineering Materials Lab, whereby, the students can observe material samples for their lattice structure, roughness and observe the material structure changes before and after performing a specific process like, fracture and heat treatment. The microscope is equipped with a digital camera to capture the sample images formeasurement and printing for referring into their reports. The digital zooming capability up to 1000Xalong with analysis software is also available.

COURSES UNDER SEMESTER SYSTEM

BSc Mechanical Engineering

Semester - I			
Course Code	Course Title	Credit Hours	
		Theory	Lab
HU-101	Functional English	2	0
MS-101	Health, Safety and Environment	1	0
GS-101	Calculus and Analytical Geometry	3	0
GS-102	Applied Chemistry	2	0
CS-101	Computer Systems and Programming	2	1
ME-111	Engineering Drawing and Graphics	2	1
ME-131	Workshop Practice	1	1
Total		13	3
Semester Total		16	

Semester - II			
Course Code	Course Title	Credit Hours	
		Theory	Lab
EE-102	Electrical Engineering	2	1
GS-103	Applied Physics	2	1
GS-104	Linear Algebra and Ordinary Differential Equations	3	0
ME-112	Engineering Mechanics-I: Statics	3	0
ME-113	Engineering Materials	2	1
ME-114	Computer Aided Drawing	0	1
ME-121	Fluid Mechanics-I	3	0
Total		15	4
Semester Total		19	
Total for 1st Year		35	

Semester - III			
Course Code	Course Title	Credit Hours	
		Theory	Lab
GS-205	Complex Variables and Transforms	3	0
ME-211	Engineering Mechanics-II: Dynamics	2	0
ME-212	Engineering Mechanics Lab	0	1
ME-213	Mechanics of Materials-I	3	0
ME-221	Fluid Mechanics-II	3	0
ME-222	Fluid Mechanics Lab	0	1
ME-223	Thermodynamics-I	3	0
ME-231	Manufacturing Processes-I	2	0
Total		16	2
Semester Total		18	

Semester - IV			
Course Code	Course Title	Credit Hours	
		Theory	Lab
HU-202	Islamic Studies	2	0
GS-206	Numerical Analysis	3	0
ME-214	Mechanics of Materials-II	3	0
ME-215	Mechanics of Materials Lab	0	1
ME-216	Machine Design -I	2	0
ME-224	Thermodynamics-II	2	0
ME-225	Thermodynamics Lab	0	1
ME-232	Manufacturing Processes-II	2	0
ME-233	Manufacturing Processes Lab	0	1
Total		14	3
Semester Total		17	
Total for Second Year		35	

Semester - V			
Course Code	Course Title	Credit Hours	
		Theory	Lab
EE-303	Electronics Engineering	2	1
HU-303	Communication Skills	1	1
GS-307	Applied Statistics	2	0
ME-311	Machine Design-II	3	0
ME-312	Computer Aided Engineering	0	1
ME-321	Heat and Mass Transfer	3	0
ME-331	Measurement & Instrumentation	2	0
Total		13	3
Semester Total		16	

Semester - VI			
Course Code	Course Title	Credit Hours	
		Theory	Lab
MS-302	Engineering Economics	2	0
HU-304	Technical Report Writing & Presentation Skills	2	0
ME-313	Mechanics of Machines	3	0
ME-322	Refrigeration and Air Conditioning	3	0
ME-323	Heat Transfer and R & A/C Lab	0	1
ME-324	Power Plants	2	0
ME-332	Control Engineering	3	0
ME-333	M&I and Control Lab	0	1
Total		15	2
Semester Total		17	
Total for Third Year		33	

Semester - VII			
Course Code	Course Title	Credit Hours	
		Theory	Lab
MS-403	Management Elective	2	0
HU-405	Pakistan Studies	2	0
ME-411	Mechanical Vibrations	3	0
ME-412	Mechanisms and Mechanical Vibrations Lab	0	1
ME-421	Internal Combustion Engines	3	0
ME-422	Power Plants and IC Engines Lab	0	1
ME-4XY	Technical Elective-I	2	1
ME-499	Design Project-I	0	3
Total		12	6
Semester Total		18	

Semester - VIII			
Course Code	Course Title	Credit Hours	
		Theory	Lab
MS-404	Entrepreneurship	1	0
HU-406	Social Sciences	2	0
ME-413	Finite Element Methods	2	1
ME-4XY	Technical Elective-II	3	0
ME-4XY	Technical Elective-III	2	1
ME-499	Design Project-II	0	3
Total:		10	5
Semester Total		15	
Total for Final Year		33	
Grand Total for Four Years		136	

Technical Electives: (ME-4XY)

a. ME(Elec.)-414 Tribology
b. ME(Elec.)-415 Mechanical Engineering Design Analysis
c. ME(Elec.)-416 Stress Analysis
d. ME(Elec.)-417 Composite Materials
f. ME(Elec.)-423 Renewable Energy Technology
g. ME(Elec.)-424 Gas Dynamics
h. ME(Elec.)-425 Aerodynamics
i. ME(Elec.)-426 Computational Fluid Dynamics (CFD)
j. ME(Elec.)-427 Nuclear Engineering
k. ME(Elec.)-428 Automotive Engineering
l. ME(Elec.)-431 Advanced Manufacturing Systems
m. ME(Elec.)-432 Introduction to Mechatronics
n. ME(Elec.)-433 Robotics
o. ME(Elec.)-434 Maintenance Engineering

Management Electives: (MS-403)

a. MS(Elec.) Operations Management
b. MS(Elec.) Total Quality Management
c. MS(Elec.) Project Management
d. MS(Elec.) Operations Research
e. MS(Elec.) Engineering Law
h. MS(Elec.) Supply Chain Management

DEPARTMENT OF BASIC SCIENCES & HUMANITIES

DEPARTMENT OF BASIC SCIENCES & HUMANITIES

Head of Department

Mr. Kausar Ali

Lecturers

Ali Murad
B.Ed, M.Sc (QAU)
M.Sc Physics (RIU)

Kausar Ali
MSc Mathematics (UW)
M.S (UET Taxila)

Muhammad Imran (Visiting)

Muhammad Iqbal
MA English (IIUI)
MS (NU)

Irfan Hussain
MSC (UW)
MS (MIU)

The department of Basic Sciences and Humanities plays a pivotal role by supporting all engineering disciplines of the college. The bridging nature of department enables it to coordinate with all other departments. The department realizes its responsibility to ensure long term vitality of social sciences, that it should foster the development of engineers as future scholars, teachers, researchers, and organizational leaders. The department offers courses in Mathematics, Physics, Chemistry, Engineering Statistics, Islamic Studies, English, and Pakistan Studies.

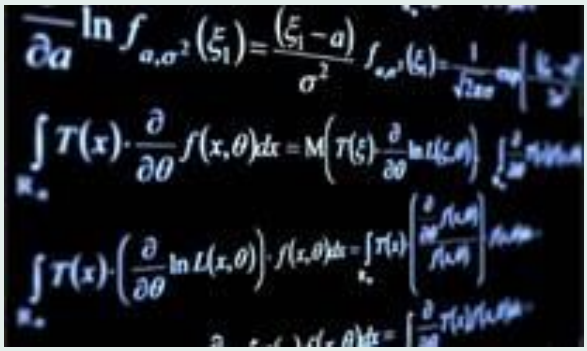
No physical body can be formed without the geometry of **Mathematics**.

All science and Engineering subjects require mathematics. The knowledge of mathematical things is almost innate in us. A practical engineer needs anadequate knowledge of modern mathematicsto successfully cope with the complex real-worldproblems. Therefore, all the degree programsoffered by different engineering departments ofthe College have courses in Applied Mathematics,Probability and Engineering Statistics and Numerical Analysis.

Physics plays an essential role in Electrical Engineering. Sound background knowledge of physics is sufficient and necessary condition for engineering. Courses of physics are offered to Electrical and Mechanical Engineering to make their basics foundation of the subject.

In today'ssociety, chemistry is greatly involved in the world ofengineering. Whether it is aerospace, mechanical,environmental, or other engineering fields the makeup of substances is always a key factor whichmust be known.

Engineering today has morphed from only dealing with the physical aspect of the field into the theory behind the field. All engineering fields have unique bonds with the chemistry world. Courses of chemistry are offered to Mechanical Engineering students to make their basic foundation of the subject.



COMMUNICATION

is the dire need of professional engineers and English is an international language? Adequate knowledge of English is inevitable to cope up the current challenges of modern world. Therefore, several courses related to English Language and communication skills are offered to all engineering departments which will help the engineers in their workspace and professional correspondence. The ultimate need of modern world communication is facilitated through professional courses

A good Engineer must be a good Pakistani & Muslim too. Therefore, Courses of Islamic Studies& Pak Studies are taught prudently to the students of various engineering fields. The purpose is toenlighten the soul and mind of the students andenable them to get appraisal of tenets of Islam sothat they may perform their duties with integrity and diligence when the future responsibilities ofserving the nation will be bestowed upon
them.

DEPARTMENT OF COMPUTER SCIENCE

DEPARTMENT OF COMPUTER SCIENCE

Program Educational Objectives (PEOs)

PEO 1:
Impart the knowledge of computer science to the graduates with an ability to perform and contribute to different domains of software industry.

PEO 2:
Enable graduates to demonstrate computer science related skills to serve local, global industries and organizations.

PEO 3:
Enable graduates to identify mechanism for the professional development and life-long learning in an ethical environment.

PEO 4:
To take the appropriate measures and groom the graduates to conduct research in their area of interest.

PEO 5:
Enable the graduates to convert understanding into innovation and as an entrepreneur be useful for the development of the society.

Program Learning Outcomes (PLOs)

1. **Academic Education**: To prepare graduates as computing professionals.
2. **Knowledge for Solving Computing Problems**: Apply knowledge of computing fundamentals, knowledge of a computing specialization, and mathematics, science, and domain knowledge appropriate for the computing specialization to the 16 abstraction and conceptualization of computing models from defined problems and requirements
3. **Problem Analysis**: Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines.
4. **Design/ Development of Solutions**: Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
5. **Modern Tool Usage**: Create, select, adapt, and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.
6. **Individual and Teamwork**: Function effectively as an individual and as a member or leader in diverse teams and in multi-disciplinary settings.
7. **Communication**: Communicate effectively with the computing community and with society at large about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.
8. **Computing Professionalism & Society**: Understand and assess societal, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practice.
9. **Ethics**: Understand and commit to professional ethics, responsibilities, and norms of professional computing practice.
10. **Life-long Learning**: Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.

DEPARTMENT OF COMPUTER SCIENCE

Head of Department

Dr. Umar Farooq
MSc (Japan)
PhD (UET, Taxila)

Assistant Professor

Dr Mian Imtiaz ul Haq
BSc Engg (UET Peshawar)
MSc Engg (UET Peshawar)
PhD (Hanyang Uni. S. Korea)

Lecturer

Shahid Iqbal
BSCS (AIOU, Islamabad)
MSCS (Gomal University D.I. Khan)
MSCE (CASE, UET Taxila)

Department

The department of Computer Science at SCET was established in 2021, proud of its excellent facilities and internationally qualified faculty members. The computer science is the scientific and practical approach to computation and its applications. It has the ability to impart competitive skills in effective development and application of modern technology to groom its students as excellent programmers, outstanding researchers, extraordinary analysts and innovative designers. It is committed to equip and impart our students with advanced competencies required for managing the growing needs of science and technology, especially computer science, in almost every professional field today.

Computing is now supporting human being everywhere from personal life to managing businesses. Such involvement has created great number of jobs for computer scientists. Top careers for computer scientists are software application development, computer systems analyst, computer system engineers, network system administrator, database administrator, business intelligence analyst, web developer, smart phone application development, computer programmer, big data, cloud computing.

The department has objective to train students with the skills that are high in demand in international job market. Department has particularly focused on training students about big data, data science, cloud computing, android app and SAP etc. These are among the most demanded skills for computer scientists.

The department primarily teaches curriculum recommended by National Computing Education Accreditation Council (NCEAC).

Academic Programs Offered.

Presently one undergraduate program is being offered by the Department of Computer Science:

Entry Requirement

The minimum requirement in a bachelor's degree program in computer science, is at least 50% marks in intermediate (HSSC) or equivalence examination certified by IBCC, with either mathematics as a subject or pre-medical as a discipline. All such students allowed admission in a bachelor's degree program in computer science, based on intermediate (pre-medical), must pass deficiency courses of mathematics of six (6) credit hours within one year of their regular studies.

Entry test prescribed for BS Computer Science by all UETs/ETA/NTS & all other entry tests allowed by NCEAC.

Duration

Minimum: 8 Semesters; 4 years
Maximum: 12 semesters; 6 years

Credit Hours Requirements

Minimum 134 Cr. Hrs.

Offering Semesters

Fall and Spring.

Program Information

Bachelor of Science in Computer Science program at SCET focuses on comprehensive computer science knowledge among students and exposing them to issues involved in the development of scientific, educational, and commercial applications of computer science. The program lays emphasis on an integrated approach to meet the hardware and software needs of the industry. The purpose of this program is to produce graduates with a sound knowledge of computer science, contemporary technologies, and professional skills.

Program Mission

Delivering state-of-the-art knowledge and skills of Computer Science to improve society.

Laboratories

At present, Department has three dedicated and three shared laboratories for practical demonstration and research work graduates.

1. Basic Computing Lab
2. Advance Programming Lab
3. Digital Logic Design Lab
4. Database / Data Structures LAB

Computing labs are equipped with latest Computing machines. Lab offer services for core computing areas e.g computer fundamentals, programming, database management systems, OOP and data structures and algorithms.

The Digital Logic Design Lab is one of the most important labs of the department. The Lab is well equipped with both hardware and software facilities required by the students to perform the necessary experiments.

Courses Under Semester System BS Computer Science

Semester - I

Course Code	Course Title	Credit Hours	Pre-Requisite
CS-101	Introduction to Information and Communication Technologies	2+1	
CS-102	Programming Fundamentals	3+1	
MT-101	Calculus and Analytical geometry	3+0	
EG-101	Communication and Presentation Skills	3+0	
EL-101	Basic Electronics	2+1	
	Semester Total	**16**	

Semester - II

Course Code	Course Title	Credit Hours	Pre-Requisite
CS-103	Object Oriented Programming	3+1	Programming Fundamental
CS-104	Discrete Structure	3+0	
EG-102	Technical and Business Writing	3+0	Communication and Presentation Skills
MT-102	Probability & Statics	3+0	
PK-101	Islamic and Pak Studies	2+0	
	Semester Total	**15**	

Semester - III

Course Code	Course Title	Credit Hours	Pre-Requisite
CS-201	Data Structures and Algorithms	3+1	OOP
CS-202	Digital Logic Design	3+1	Basic Electronics
CS-203	Theory of Programming Languages	3+0	Programming Fundamentals
UE-201	University Elective – I	3+0	
MT-202	Liner Algebra and Differential Equations	3+0	
	Semester Total	**17**	

Semester - IV

Course Code	Course Title	Credit Hours	Pre-Requisite
CS-204	Design and Analysis of Algorithms	3+0	DSA

CS-205	Theory of Automata & Formal Languages	3+0	
CS-206	Computer Architecture	3+1	
UE-202	University Elective – II	3+0	
CS-203	Database Systems	3+1	DSA
MT-203	Numerical Computing	3+0	
	Semester Total	**20**	

Semester - V

Course Code	Course Title	Credit Hours	Pre-Requisite
CS-301	Complier Construction	3+0	Theory of Automata
CS-302	Software Engineering	3+0	
CS-303	CS Elective – I	3+0	
CS-304	CS Elective – II	3+0	
CS-305	Operating Systems	3+1	DSA
	Semester Total	**16**	

Semester - VI

Course Code	Course Title	Credit Hours	Pre-Requisite
CS-307	CS Elective – III	3+0	
CS-308	Artificial Intelligence	3+1	Discrete Structure
UE-301	University Elective –III	3+0	
CS-309	Computer Communication and Networks	3+1	
CS-310	CS Elective - IV	3+0	
CS-311	Smart Application Development	3+0	
	Semester Total	**20**	

Semester - VII

Course Code	Course Title	Credit Hours	Pre-Requisite
CS-400	Final Year Project - I	0+3	
CS-401	CS Elective – V	3+0	
CS-402	Parallel and Distributing Computing	3+0	OS
CS-403	Big Data Analytics	3+0	
CS-404	CS Elective - VI	3+0	
CS-405	Data Warehousing	3+0	
	Semester Total	**18**	

Semester - VIII

Course Code	Course Title	Credit Hours	Pre-Requisite
CS-406	Final Year Project - II	0+3	Final Year Project-I
CS-407	Advance Topics in Computer Science	3+0	
CS-408	Information Security	3+0	Discrete Structure
UE-401	University Elective – IV	3+0	
Semester Total		**12**	
Degree Total		**134**	

Computer Science Elective courses

Sr #	Course Title	Credit Hours	Sr#	Course Title	Credit Hours
1	Operations Research	3 (3, 0)	21	Expert Systems	3 (3,0)
2	Simulation and Modeling	3 (3, 0)	22	Artificial Neural Network	3 (3,0)
3	Computer Graphics	3 (2, 1)	23	Fuzzy Logic	3 (3,0)
4	Digital Image Processing	3 (2, 1)	24	Software Quality Assurance	3 (3,0)
5	Digital Signal Processing	3 (2, 1)	25	Advance Object-Oriented Programming (JAVA)	4 (3,1)
6	Computer Vision	3 (2, 1)	26	Network Analysis and Design	3 (3,0)
7	Software Engineering	3 (3, 0)	27	Network Management	3 (3, 0)
8	Advance Software Engineering	3 (3, 0)	28	Game Programming	3 (3, 0)
9	Principles of Programming Languages	3 (2, 1)	29	Object Oriented Software Engineering	3 (3, 0)
10	Data Communication	3 (3, 0)	30	Network Programming	3 (3, 0)
11	Distributed Computing	3 (2, 3)	31	Cloud Computing	3 (3, 0)
12	Data and Network Security	3 (3, 0)	32	Visual Programming	3 (3, 0)
13	Wireless Networks	3 (2, 3)	33	Cryptography	3 (3, 0)
14	Telecommunication Systems	3 (2, 1)	34	Computer Law	3 (3, 0)
15	Microprocessor Interfacing	3 (2, 1)	35	Computer Animation	3 (3, 0)
16	Web Engineering	3 (2, 1)	36	Modern Programming Language	3 (3, 0)
17	System Programming	3 (2, 1)	37	Information Security	3 (3, 0)
18	Distributed Database Systems	3 (2, 1)	38	Data and Network Security	3 (3, 0)
19	Data Warehousing	3 (2, 1)	39	Adv. Topics in Computer Science	3 (3, 0)
20	Numerical Computing	3 (3,0)			

University Elective Courses

Sr #	Course Code	Course Title	Credit Hours	Sr #	Course Code	Course Title	Credit Hours
1	MG	Financial Accounting	3 (3, 0)	10	EC	E-Commerce	3 (3, 0)
2	MG	Financial Management	3 (3, 0)	11	SS	International Relations	3 (3, 0)
3	MG	Human Resource Management	3 (3, 0)	12	QA	Quality Assurance and Management System	3 (3, 0)
4	MG	Marketing	3 (3, 0)	13	SS	Social Service	3 (3, 0)
5	SS	Economics	3 (3, 0)	14	EP	Entrepreneurship	3 (3, 0)
6	PS	Psychology	3 (3, 0)	15	SS	Philosophy	3 (3, 0)
7	QA	Quality Improvement tools &Methods	3 (3, 0)	16	SS	Social Media Marketing	3 (3, 0)
8	QA	Quality Control & Engineering Standards	3 (3, 0)	17	SS	Foreign/Regional Language (French, Ger- man, Sindhi, Punjabi, Urdu etc.)	3 (3, 0)
9	MG	Introduction to Management	3 (3, 0)				

STUDENT FACILITIES & SERVICES

COLLEGE LIBRARY

The Library of the College plays a vital role in dissemination of knowledge, teaching, research, and extension services. It has a seating capacity for about 80 readers, which provides congenial environment for study. The reading hall remains open from 8:30 am to 4:00 pm on all working days providing break for Jumma prayer 12:00 noon to 2:30 pm. The library is stocked with encyclopedias, dictionaries, handbooks and a big reserve collection of text and general technical books.

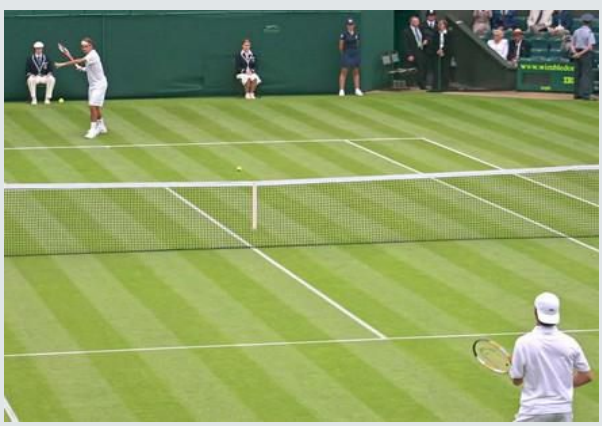
The library has more than 24000 books on diverse fields. Besides engineering subjects considerable reading material on humanities, social sciences and Islamic Studies is available. The members can borrow books and other materials, (except serials, reference, or reserved books) for specific periods.

ACCOMMODATION

The College has its own hostel for the male students. The students are required to abide by the rules and regulations governing residence in thecollege arranged hired accommodation and are encouraged to develop commercial and harmonized life conducive to healthy growth of the social aspects of their personalities.

DIRECTORATE OF SPORTS

The College provides ample facilities to the students for participation in games and sports; both outdoors and indoors. A Sports Committee comprising College teachers supervises the sports activities Facilities are provided for all the major sports including cricket, tennis, badminton, basketball and athletics. A series of inter- faculty and inter-hostel tournaments are held to provide participation to the maximum number of students. Outstanding sportsmen are encouraged to take part in the inter-university tournaments.



SCET ADVENTURE CLUB (SCETAC)

The idea for having an Adventure Club is to provide an opportunity to the students to escape from the daily routine of the busy campus life and be able to enjoy the wilderness and beautiful resources of the mother land's nature. The main objective of the adventure club is to organize and promote hiking, mountaineering, jogging, boating, excursion trips and other related activities. Efforts will be made to affiliate the club with the Adventure Foundation of Pakistan and the Alpine Club of Pakistan. First Aid Training will also be arranged for the members of the Adventure Club.

ADMINISTRATION OFFICE

The college Campus requires considerable efforts to keep the gardens, lawns, roadside rows of trees and flowerbeds in good trim. The efforts of this office give the Campus a pleasing look, which attracts many visitors in the mornings and evenings. The office looks after security, sanitation, maintenance of lawns and gardens at the campus. It has a large squad of uniformed watchmen who guard the college buildings and property. Its sanitation staff keeps the buildings, roads, lawns, and other spaces clean and tidy.

ADMISSION/REGISTRATION OFFICE

This section deals with matters relating to admission, registration, and placement of students at undergraduate level and verification of documents, migration cases and miscellaneouscertificates. Detailed Intake data of each newentrant is sent to PEC for onward registration to Engineering Council.

QUALITY ENHANCEMENT CELL (QEC)

FOCUS ON QUALITY

QEC is responsible to develop procedures as per the requirements of HEC as follows:

- Approval of new programs of Quality Control & Management.
- Annual monitoring & evaluation including program monitoring, faculty monitoring and student's perception.
- Departmental review, Institutional assessment.
- Program specifications.
- Qualification Framework regarding 'Affiliation' with UET, Taxila and 'Verification' of student degrees from concerned B.I.S.Es.
- Student's Internship and placement activities.
- Corrective action request about each assessment evaluation reports.

PLACEMENT BUREAU

The Placement Bureau implies placing of graduates/students of SCET on jobs/internships by the help of a team dedicated by the institute. It has been established in SCET to help the graduates & students in finding jobs, scholarships, and internships within Pakistan as well as abroad. It also extends advice and cooperation to the students for their career progression. It treats the students regardless of gender, caste, creed, family, status, religion, or any other factor. All the graduates are welcome at placement bureau for any advice on job seeking. The Placement Bureau makes all efforts for advertising the jobs and scholarships at SCET website, within college premises and alumni portal.

INDUSTRIAL LINKAGE

The linkage plays a pivotal role between SCET and Industries as well as between students and Industries/ corporates sector. It aims to bridge the gap between institution and industry. It also facilitates graduates in familiarizing themselves with the practical aspects of the industry. It plays an important role in signing MoU's, arranging industrial tours and research collaborations with industries.

It helps students for arranging their internships and placement of graduates in industries. It attributes innovation to the organization, students, and industry where old sectors are overlapped, and new trajectories are formed. It prefers to maintain a long-term relationship between organization, students, and industry.

CQI- (CONTINUES QUALITY IMPROVEMENT)

CQI process is designed to improve and/or change (if required) the way of conducting engineering programs, at the institute. Following activities of CQI process are performed:

- QEC obtains results of indirect PLOs assessment & students' feedbacks from individual courses and refers to DQAC.
- DQAC gets CRR from faculty and results from QEC through CAR (Corrective Action Request), Prepares proposals for curriculum review and send to CAC through QEC.
- CAC sends these curriculum review proposals to UET Taxila Course Review committee for approval.
- Consequently, these approved Reviews of curriculum are sent back to CAC, DQAC and Director OBE (central & departmental) and intimated to QEC.

QUALITY ENHANCEMENT CELL (QEC) SURVEYS

QEC generates following self-assessment reports based on surveys and feedback from the stakeholders, periodically, to improve the quality of education at the institute:

Feedback surveys on annual basis:

a. Alumni Survey	(for PEO assessment)
b. Internship Survey	(for PLO assessment)
c. Employer Survey	(for PEO assessment)
d. Exit Survey	(for PLO assessment):

Assessment activities conducted bi-annually (at the termination of semester)

e. Course Evaluation Survey	(from students)
f. Teachers/ Lab Engineers Feedback	(from students)
g. Faculty Feedback	(from Teachers)
h. Faculty Course Review	(from Teachers)

ADMISSIONS

General Instructions

a) The application along with the required documents should be submitted as early as possible. Pleasedo not wait for the last date.
b) As soon as the process of selection is complete, the merit list will be notified showing the percentageof the applicants admitted in different disciplines against different categories.
c) All documents to be attached with the Application Form should be attested by a class-I Gazettedofficer of the government.
d) Any information regarding admissions can be obtained during working hours by calling Phone #

051- 4926091, 0514926096
051- 4926092 and 051-4926102
Note: Members of the Admission Committee will also be available for consultation, in person, duringadmission period.

1. Eligibility Requirements for Admission

a. An applicant for admission to B.Sc. Degree Course in Civil, Electrical and Mechanical Engineering must fulfill the following eligibility requirements:

i. He should have passed the Intermediate (Pre-Engg) Examination with Mathematics, Physics andChemistry from a Board of Intermediate and Secondary Education of Pakistan or an equivalent examination so recognized by the university.

ii. He should have passed (expect to pass) up to the latest annual examination with at least 60%unadjusted marks in the examination based on which he seeks admission. Marks of NCC and Hifz-e-Quran, where applicable, shall be added only for determination of merit and not towards eligibility.

iii. For admission of applicants holding the Diplomaof Associate Engineer, he should have passed (or expect to pass) the diploma examination from the respective provincial Boards of Technical Education, in the relevant technology, obtaining marks with at least 60% un-adjusted.
iv. Rounding off percentage figure to make it 60% will not be considered towards eligibility.

v. He should be a bona fide resident of the area from where he seeks admission.

vi. He should meet standards of physique and eyesight laid down in the medical certificate.

vii. He should have appeared in the Entry Test for the respective session arranged by the UETs (Lahore,Peshawar, MirPur ,etc.), ETA and NTS.

b. An applicant for admission to BS Computer Science must fulfill the following eligibility requirements:

i. The minimum requirement in a bachelor's degree program in computer science, is at least 50% marks in intermediate (HSSC) or equivalence examination certified by IBCC, with either mathematics as a subject or pre-medical as a discipline. All such students allowed admission in a bachelor's degree program in computer science, based on intermediate (pre-medical), must pass deficiency courses of mathematics of six (6) credit hours within one year of their regular studies.

ii. Entry test prescribed for BS Computer Science by all UETs/ETA/NTS & all other entry tests allowed by NCEAC.

2. Equivalent Examinations

The University of Engineering & Technology (U.E.T) Taxila recognizes the following Examinations as equivalent to the Intermediate (HSSC) Examination with Computer or Chemistry, Mathematics and Physics of thePakistani Boards of Intermediate and Secondary Education: -

i. Intermediate (Pre-engineering) Examination of the Board of Intermediate & Secondary Education, Azad Kashmir.
ii. Cambridge Overseas Higher School Certificate with Physics, Chemistry and Mathematics.
iii. British General Certificate of Education (Advanced Level). He should have earned (or expect to earn) aminimum of "C" grade in the subjects of Physics, Chemistry and Mathematics in the A-Level examination.
iv. F.Sc. (Pre-medical) with Mathematics as an additional subject.American High School Graduation Diploma(HSG Diploma)
v. An equivalent certificate or diploma

acceptedby IBCC (Inter Board Committee of Chairmen)

Note: Such applicants are required to attach an equivalence certificate issued by the IBCC, with the application for admission. The following is the address.

Inter Board Committee of Chairmen,
Federal Board of Intermediate and Secondary Education Building
PLt 25, St 39, G 10 / 4, Islamabad-Pakistan

4 Eligibility for Diploma Holder

For admission of applicants holding the Diploma of Associate Engineer, he should have passed (or expect to pass) the diploma examination from the respective provincial Boards of Technical Education, in the relevant technology, obtaining marks with at least 60% un-adjusted.**The quota of Diploma Holders has been abolished in compliance with Lahore High Court judgments on writ petitions No. 1286 of 2016 and No. 57079 of 2019 and with Supreme Court of Pakistan, in civil petitions numbers 271,293 & 617 of 2021. Now the candidates holding DAE can apply on open merit on all categories where they fall.**

List of relevant diplomas are given in section below. Selection and allotment of disciplines are made according to merit

Diploma Holder applicants seeking admission shall not be eligible unless their diplomas are in the relevant technology as specified against each degree course given below.

Civil Engineering (Relevant DAE Technologies)

i. Architecture
ii. Civil
iii. Civil with any specialization
iv. Environmental
v. Land & Mine Surveying

Electrical Engineering (Relevant DAE Technologies)

i. Automation
ii. Avionics
iii. Computer/CIT
iv. Electrical
v. Electronics
vi. Information
vii. Instrumentation
viii. Instrumentation & Process Control
ix. Mechatronics
x. Precision Mechanical & Instrument
xi. Radar
xii. Radio

Mechanical Engineering (Relevant DAE Technologies)

i. Aerospace
ii. Auto & Diesel
iii. Avionics
iv. Automation
v. Bio-Medical
vi. Dies & Mould
vii. Mechanical
viii. Mechanical (Automobile & Diesel)
ix. Mechanical (Construction Machinery)
x. Mechanical (Foundry & Pattern Making)
xi. Mechanical (Metallurgy and Welding)
xii. Mechanical with any specialization
xiii. Mechatronics
xiv. Precision Mechanical and Instruments
xv. Refrigeration and Air Conditioning
xvi. Vacuum

5 Provisions about admission

on the basis of a B.Sc. Degree given the qualifications and restrictions stated below, a person is eligible for admission to thebachelor's degree courses at the College on the basis of a degree of Bachelor of Science.

A person possessing a B.Sc. Degree is NOT eligible for admission to any bachelor's Degree course at the College unless he has also passed F.Sc. (Pre-engineering) or ICS or F.Sc. (Pre- Medical) Examination.

6 Scope of Eligibility for B.Sc.
with F.Sc. (Pre-Engineering)

For admission to the B.Sc. courses in Civil, Electrical and Mechanical Engineering an applicant must have passed the B.Sc. Examination with Physics and Mathematics.

7 Gender
Both male and female persons are eligible to apply on open, merit.

Seats Allocation

Open Merit	100%

9 Available Seats

B.Sc. Civil Engineering	100
B.Sc. Electrical Engineering	40
B.Sc. Mechanical Engineering	50
BS Computer Science	50

10 Determination of Merit
Examinations Considered for Merit
For admission to all the bachelor's degree Courses and determination of merit the following examinations are considered:

a) Higher Secondary School Certificate Examination (HSSC) Pre-Engg or equivalent.
b) Bachelor of Science (B.Sc.)
c) Diploma of Associate Engineers (D.A.E.)
d) Entry Test of UET's/NTS.

11 Weighted Percentage

The comparative merit of applicants will be determined on the basis of weighted percentage marks obtained by them in these examinations.

a) For Applicants with HSSC (Pre-engg) as the highest Qualification

Ist Year of HSSC (Pre-Engg)	50%
Entry Test	30%
Matric	20%

b) For CS Programs, Applicants with HSSC as the highest Qualification

HSSC	70%
Entry Test	30%

c) For Application with BSc. Or BASc as the Highest Qualification

B.Sc. or equivalent	30%
HSSC or equivalent examination	20%
Entry Test	30%
Matric	20%

d) For Applicants Having Diploma of Associate Engineer as the Highest Qualification

Sum of Ist and 2nd Year of Diploma Examination of Associate Engineer	50%
Entry Test	30%
Matric	20%

e) In case of foreign qualifications (A-Level, etc)

Entry Test	30%
Marks in 11th Class ("O" Level or Equivalent)	70%

Notes:
i. In case the candidate has already completed his/her intermediate or equivalent qualification, their Part-I result would be used in computation of aggregate

ii. In case of Foreign qualifications, letter grade will be converted to marks by IBCC formula

iii. Since admission will be offered before the declaration of result of HSSC part-II, the following conditions will also apply.
a) Admission of candidates in Engineering Programs, who are unable to earn 60% or above in their HSSC and equivalent qualification or DAE will be cancelled, and their dues will be reimbursed in full without deduction.
b) Admission of candidates in Computer Science, who are unable to earn 50% or above in their HSSC and equivalent qualification will be cancelled, and their dues will be reimbursed in full without deduction
c) Admission of A-level candidates who are unable to score at least "C" Grade in Mathematics, Physics and Chemistry will be cancelled and their dues will be reimbursed in full without deduction

12 Variation in Seats

The college authorities in consultation with U.E.T, Taxila and Pakistan Engineering Council may exercise their right at any time to increase or decrease the number of seats allocated to any category and there shall be no appeal against such a decision.

13 Documents to be Attached with Application Form

An applicant must exercise great care in ensuring that his application form is submitted accompanied by the required documents. An application shall stand rejected if any of the required documents ismissing, no document shall be accepted after the last date for receipt of applications.
The attested copies of the documents/ certificates require from applicants for different categories are summarized below:

A) Certificate of Secondary School Examination (S.S.C): Detailed Marks Certificate
B) Degree, Diploma, or certificate of the examination on the basis of which admission is sought (I.e.F.Sc., B.Sc., or D.A.E etc.). Result cards issued by the board/university are acceptable provisional Certificate in place of Degree/Diploma will not be accepted.

C) Detailed Marks Certificate of the examination on the basis of which admission is sought.
D) Domicile Certificate.

14Prospectus/Application Fee:

a) The fee is to be paid in the Accounts Office of Swedish College of Engineering and Technology, Wah Cantt.

b) The applicants must check up carefully that they are paying the correct amount of application fee. If the application fee received with the application falls short of the required amount, the application will be entertained to the extent of preferences covered by it. For this purpose, starting with the first preference downwards only those preferences will be accepted which are covered by the fee remitted by the applicant, and the rest will stand canceled.

15 Other

The following recurring charges are to be paid by the students at the start of each semester.

Engineering	
Industrial Visits	2500/-
Library Fund	1,500
Sports Fund	1500
SCET Societies Fund	1,500
Total	Rs. 7,000/-

Computer Science	
Library Fund	1500
Project Fund	500
Sports Fund	1500
Society Fund	1500
Total	Rs. 5,000/-

16 Last Date for Receipt of Applications

The application form completes in all respects along with the requisite documents and receipt along with the requisite documents and receipt of payment should reach the Director Admissions Swedish College of Engineering and Technology, Wah Cantt on or before the last date notified for receipt of applications.

17 Incomplete Applications

Incomplete applications shall not be entertained. Application form, fee and the documents submitted with it shall not be returned on any ground

18 Procedure for the Selected Candidates:

a) Notification of Selection

A list of selectees will be displayed on the college notice boards and on official college website(http://www.scetwah.edu.pk). The applicants can check the merit lists according to the schedule given in Prospectus.

b) Depositing of Dues and Documents

Within specified days mentioned in the admission schedule, a selectee is required to pay the College dues in the accounts office and submit the following documents to the Director Admissions office.

i. Medical Certificate duly signed and stamped by the District Medical Superintendent.

ii. Ten attested most recent photographs.

iii. Attested Certificate of parent's/guardian's income.

iv. Original degrees, certificates and result cards of SSC, HSSC, B.Sc., GCE(A), Diploma of Associate Engineers or the equivalent qualifications and their duplicate attested photocopies.

v. Original Marks Sheet of Entry Test.

vi. Original Domicile certificate.

vii. Attested photocopy of National Identity Card/ Form B.

viii. Bio-Data Sheet.

ix. Undertaking on a Rs.50/- judicial paper duly completed.

There will be no relaxation in the time and date mentioned in prospectus for dues and the next candidate from the merit list will be called in case of failure of submission of dues within time. The right of admission shall forfeit in this case.

TENTATIVE ADMISSION SCHEDULE

The tentative schedule for all admission processes every year will be as under:

I. An Entry test will be conducted for all applicants in middle of June (at the end of Intermediate Theory examination) each year.

II. Admission will be opened in the first week of July every year

III. Applications will be received until end of July each year

IV. First merit list of candidates will be displayed in first week of August each year

V. Classes of First Semester will start in synchronization with sessions already in progress (3rd, 5th and 7th) in first week of September each year

FEES AND OTHER CHARGES

The following fees and charges are to be paid by the students admitted to the bachelor's degree courses. The same are subject to revision /modification by the College authorities at any time without prior notification

a) One Time Fee and Dues (in Pak Rupees)

Engineering

Admission Fee / Re-Admission	24,500/-
Security Deposit (Refundable)	15,000/-
Certificates, Diplomas Verification Fee	1,500
Total (Rs)	**41,000/-**

Computer

Admission Fee / Re-Admission	10,000/-
Security Deposit (Refundable)	10,000/-
Certificates, Diplomas Verification Fee	1,500
Total (Rs)	**21,500/-**

b) Semester Fee**:

Civil	Rs 115,000
Mechanical	Rs 80,000/-
Electrical	Rs 80,000/-
Computer Science	Rs 62,000/-

(**) Advance Income Tax @5% will be charged in case fee exceeds two hundred thousand rupees annually, as per circular No. 6 of 2013 of Govt. of Pakistan (Revenue Division) Federal Board of Revenue, Islamabad.

Refund of Securities

All College securities are refunded when a student leaves the College. The College security, however, shall stand forfeited if a student is expelled from the college on disciplinary grounds

Refund of Fee

In case a student intends to cancel admission, the refund of Fee as per HEC policy is as below

Up to 7th day of commencement of Classes	100%
Up to 8th – 15th day of commencement of Classes	50%
Up to 16th day of commencement of Classes	0%

GLIMPSES OF VISIT OF PEC ACCREDITATION TEAM

STUDENTS PORTAL

INDUSTRIAL VISITS & INTERNSHIPS

Industrial Visits

HMC Taxila	KSB Hassanabdal	Terbela Dam & Power House
PTCL Data Centre	POF Wah	Bestway Cement
Mangla Dam	Nandi Pur	Warsak Dam

Internships.

- Water and Power Development Authority (WAPDA)
- Pakistan Telecommunication Company Limited (PTCL)
- Islamabad Electric Supply Company (IESCO)
- Karachi Electric Supply Company (KESC)
- Kot Addu Power Company Limited (KAPCO)
- National Transmission and Despatch Company (NTDC)
- Gujranwala Electric Supply Company (GEPCO)
- Bestway Cement
- Fauji Cement
- Attock Oil Refinery
- BB Pakistan Ltd
- Packages Pvt Ltd
- Honda Atlas Ltd
- FECTO Cement,
- DESCON Engg
- Ghazi Barotha
- PARCO
- Siemens
- OGDCL
- POF

OPEN HOUSE
2019

It was held on 25th July, 2019. More than 50 final year projects were on display reflecting the creative technological efforts of the students of 2K-15 batch.

Prof. Dr. Muhammad Inayatullah Khan Vice Chancellor UET Taxila graced the occasion by inaugurating the Open House. The event was attended by a large community including academicians, entrepreneurs and industry experts from institutes and organizations such as NUST, UET Taxila, POF, WEC, KSB, NESCOM, HITECH, HMC, NHA etc. The work of final year students on their projects was highly appreciated by the visitors.

AWARDS AND ACHIEVEMENTS

Mechanical Engineering students participated in the following events and won the positions meritoriously.

Event	*Organizers*	*Position*
IEEE - ROBOWARS	FAST, Lahore	2nd
NASCON – ROBOWARS	FAST, Islamabad	2nd
NERC – ROBOWARS	NUST (EME)	3rd
IEEE – ROBOWARS	FAST, Lahore	Ist
NASCON -ROBOWARS	FAST, Islamabad	2nd

Participants: Raja Muhammad Umer, Usama Shabbir Gill, Uzair Mahmood

Event	Organizers	Position
IEEE - ROBOWARS	FAST, Lahore	2nd
NASCON – ROBOWARS	FAST, Islamabad	2nd
NERC – ROBOWARS	NUST (EME)	3rd
IEEE – ROBOWARS	FAST, Lahore	Ist
NASCON -ROBOWARS	FAST, Islamabad	2nd

Event: Social Sciences Expo

Organizers: Inter University Consortium for the Promotion of Social Sciences (IUCPSS).
Competition Avenues:

- Business Plan Competition
- Essay Writing Competition
- Painting and Sketching Competition
- Penal Discussion Competition
- Case Study Competition

Electrical Engineering department students won 3rd prize in Panel Discussion Competition.

Mechanical Engineering students participated in the following events and won the positions meritoriously.

Event	*Organizers*	*Position*
IEEE - ROBOWARS	FAST, Lahore	2nd
NASCON – ROBOWARS	FAST, Islamabad	2nd
NERC – ROBOWARS	NUST (EME)	3rd
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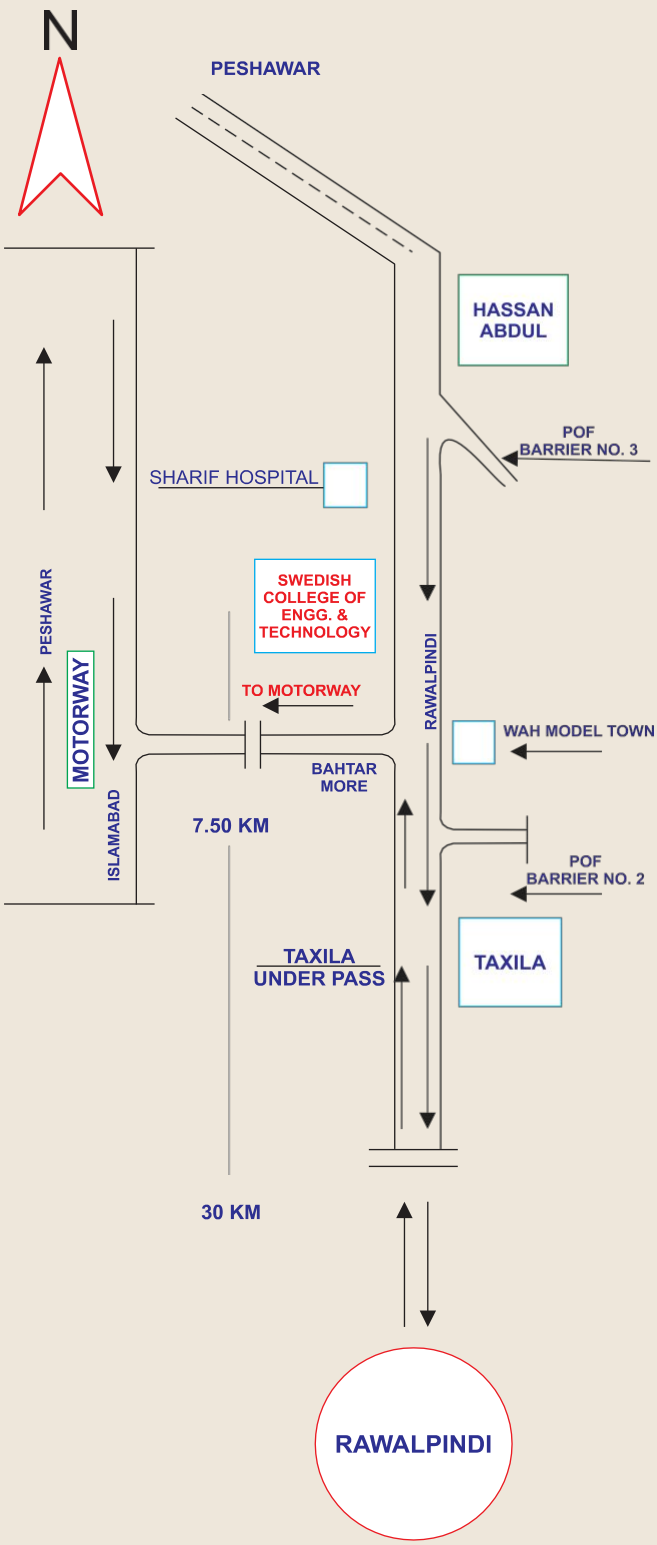
Participants: Raja Muhammad Umer, Usama Shabbir Gill, Uzair Mahmood

One Day CPD Seminar on "SPSS for Scientific Research" - SCET Wah - April 18, 2019

ALUMNI REUNION 2020

SPORTS WEEK

SCET SITE MAP



SWEDISH

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