

Department of Civil Engineering

Civil Engineering is known as an art of directing the great sources of power in nature for the use and convenience of human beings. Civil Engineering includes the research, development, planning, design, construction and maintenance associated with urban development, water supply, structure, energy generation and transmission, water treatment and disposal, and transportation systems. With the rapid increase in urbanization and industrialization, Civil Engineering has developed as a vibrant and challenging profession. Carving out meaningful careers in the arenas of building and managing infrastructures and sustaining environmental resources, civil engineers have to adopt the pace of technological change that could be an exciting and potentially rewarding challenge.

Vision

To establish a platform for producing Civil Engineers, imbued with leadership qualities and moral character, for the professional growth and sustainable development.

Mission

To provide high quality Civil Engineering education that is essential for undertaking professional challenges, enhancing, teamwork talents communication and inter-personal skills, and for providing a socially acceptable workable solutions through continuous life-long learning processes.

Program Offered: Bachelor of Science in Civil Engineering

Faculty Members, Department of Civil Engineering

Engr. Prof. Dr. Arshad Ali	Head of Department	Ph.D Civil Engg. (Environmental Engg), UET Taxila
Engr. Prof. Fazle Khaliq	Professor	MSc Public Health Engg., UET, Lahore
Engr. Dr. Muhammad Rizwan	Associate Professor	Ph.D Civil Engg. (Structural Engg), UET Peshawar
Mr. Mumtaz Khan	Associate Professor	M.Phil Mathematics, Strathclyde University, Glasgow, UK
Engr. Dr Hanif Ullah	Assistant Professor	Ph.D Civil Engg (Transportation Engg), CECOS University, Peshawar
Engr. Dr Fazli Karim	Assistant Professor	Ph.D Civil Engg. (Transportation Engg), UET Taxila
Engr. Shahab Ahmad	Coordinator	MS Civil Engg. (Environmental Engg), UET, Peshawar
Engr. Adil Shahzad	Assistant Professor	MSc Civil Engg (Structural Engg), UET Peshawar
Engr. Khurram Saleem	Assistant Professor	MS Hydro-Power Engg, UET Lahore
Engr. Arbab Imran Khan	Assistant Professor	MSc Transportation Engineering, UET Peshawar
Engr. Nadeem Shah	Assistant Professor	MS Civil Engg. (Structural Engg), CECOS University, Peshawar
Miss Asmarah Kanwal	Assistant Professor	MS Mathematics, UET Peshawar
Engr. Abdul Basit	Assistant Professor	MS Civil Engg (Structural Engg), CECOS University, Peshawar
Engr. Qamar Zaman	Lecturer	MS Remote Sensing and GIS, NUST Islamabad
Engr Muhammad Nouman	Lecturer	MS Civil Engg (Structural Engg), UET Peshawar
Engr. Tahir Ahmad	Lab Engineer	MS Structural Engg, Hohai University, China

Bachelor of Science in Civil Engineering

Program Code	239
Number of Courses	50
Credit Hours	136

Minimum Duration	8 Semesters, 4 Years
Maximum Duration	14 Semesters, 7 Years
Minimum CGPA Required To Earn Degree	2.00

Eligibility:

- Candidates who have passed intermediate (Pre-Engineering/ *Pre-Medical/ *Computer Science) from a recognized BISE in Pakistan with at least 60% unadjusted marks.
*The candidates with an intermediate Pre-Medical or Computer Science background have to study an additional course of remedial Mathematics and Chemistry, respectively, during the initial 1-2 Semesters, in accordance with PEC guidelines.
- Candidates possessing B-Tech (Hons) in the relevant field are also eligible for admission against the 2% reserved seats on open merit
- Candidates possessing 3-years Post-Matric Diploma of Associate Engineer in the relevant technology with at least 60% unadjusted marks.
- All candidates are required to pass an entry test conducted by NTS / ETEA or any registered testing agency or University with at least 33% cumulative score.

Foreign candidates need to pass entry/apptitude test conducted by the University. For further details, see clause 4 in Admission Process.

Program Educational Objectives (PEOs) :

The following PEOs have been designed to address the requirement and expectations of various stakeholders, in accordance to the vision and mission of the Department of Civil Engineering.

PEO1 (Engineering Practice): Graduates will be knowledgeable and competent, and will play an effective role to meet the industrial requirements by providing best comprehensive solutions.

PEO2 (Professional Growth): Graduates will enhance learning through professional higher education and continued development of technical expertise.

PEO3 (Societal Service): Graduates will serve the society with professional obligations, displaying high moral and ethical standards.

PEO4 (Teamwork Abilities): Graduates will possess effective communication and inter-personal skills, along with teamwork abilities.

Outcome Based Education (OBE) System :

Outcome-based education (OBE) is an educational theory that bases each part of an educational system around the goals. By the end of the educational period, each student should have achieved the desired goals. The Department of Civil Engineering at SUIT has adopted Outcome Based Education (OBE) and Outcome Based Assessment (OBA) for its Bachelor of Science in Civil Engineering Degree Program since 2015, as recommended by Engineering Accreditation Board (EAB) of Pakistan Engineering Council, to satisfy the requirements of Washington Accord 2013. Currently, the framework of Civil Engineering Degree program at SUIT is set in accordance with the PEC Accreditation Manual 2019.

Scheme of Studies:

1st Semester

Course Code	Course Title	Cr. Hrs.18
CE 102	Civil Engineering Materials	2-1
EE 100	Applied Physics and Electro-Mechanical Fundamentals	2-1
CE 101	Engineering Drawing	1-2
GE 101	Functional English	3-0
MA 115	Quantitative Reasoning I	3-0
IT 107	Applications of ICT	2-1
CH 105	*Chemistry (Only for the students with ICS background)	2-0
QT 100	Quran-e-Majeed Teaching (Audit Basis)	2-0

2nd Semester

Course Code	Course Title	Cr. Hrs.18
CE 107	Engineering Surveying	2-1
GS 120	Geology for Engineers	2-0
GS 123/240	Islamic Studies/ Ethics	2-0
CE 100	Engineering Mechanics	2-1
GE 201	Ideology and Constitution of Pakistan	2-0
CS 112	Computer Programming	2-1
MA 131	Quantitative Reasoning II	3-0

3rd Semester

Course Code	Course Title	Cr. Hrs.18
CE 200	Civil Engineering Drawing and Graphics	1-2
CE 202	Advanced Engineering Surveying	2-1
CE 204	Fluid Mechanics	2-1
CE 105	Mechanics of Solids I	2-1
CE 234	Structural Analysis I	3-0
MA 201	Advanced Calculus	3-0

4th Semester

Course Code	Course Title	Cr. Hrs.18
MGT 215	Construction Engineering	2-0
GS 221	Professional Ethics	2-0
MA 207	Applied Mathematics	3-0
CE 217	Mechanics of Solids II	2-1
CE 219	Soil Mechanics	2-1
MGT 300	Engineering Economics	2-0
CE 221	Quantity and Cost Estimation	2-1

5th Semester

Course Code	Course Title	Cr. Hrs.17
MA 226	Numerical Analysis	3-0
CE 301	Advanced Fluid Mechanics	2-1
GE 301	Expository Writing	3-0
CE 303	Geotechnical Engineering	3-1
CE 305	Reinforced Concrete Design I	3-1

6th Semester

Course Code	Course Title	Cr. Hrs.17
CE 307	Reinforced Concrete Design II	3-1
CE 311	Environmental Engineering	2-1
CE 331	Structural Analysis II	3-0
CE 313	Engineering Hydrology	2-1
CE 321	Highway and Traffic Engineering	2-0
GE 303	Civics and Community Engagement	2-0

7th Semester

Course Code	Course Title	Cr. Hrs.15
CE 410	Foundation Engineering	2-0
CE 333	Pavement Analysis and Design	2-1
CE 335	Modelling and Simulation	1-1
CE 337	Hydraulics Engineering	2-1
MGT 441	Project Management	2-0
RES 480	FYDP (Part I)	0-3

8th Semester

Course Code	Course Title	Cr. Hrs.15
CE 408	Irrigation Engineering	2-1
CE 250	Geoinformatics	1-1
CE 421	Steel Structures	2-0
CE 409	Architecture and Town Planning	2-0
CE 440	Occupational Health and Safety	1-0
MGT 270	Entrepreneurship	2-0
RES 480	FYDP (Part II)	0-3

Program Learning Outcomes (PLOs)

- PLO-01 Engineering Knowledge:** Apply knowledge of mathematics, natural science, engineering fundamentals and engineering specialization to the solution of complex engineering problems. (WK-1-WK-4)
- PLO-02 Problem Analysis:** Identify, formulate, conduct research literature and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences. (WK-1-WK-4)
- PLO-03 Design/Development of Solution:** 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. (WK-5)
- PLO-04 Investigation:** Conduct investigation of complex engineering problems using research-based knowledge and research methods, including design of experiments, analysis, and interpretation of data, and synthesis of information to provide valid conclusions. (WK-8)

- PLO-05 Tool Usage:** Create, select and apply appropriate techniques, resources and modern engineering and IT tools, including prediction and modeling, to complex Engineering problems, with an understanding of the limitations. (WK-2 and WK-6)
- PLO-06 The Engineer and the World:** Analyze and evaluate sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment while solving complex engineering problems. (WK-1, WK-5, and WK-7)
- PLO-07 Ethics:** Apply ethical principles and commit to professional ethics and norms of engineering practice and adhere to relevant National & International laws. Demonstrate an understanding of the need for diversity and inclusion. (WK-9)
- PLO-08 Individual and Collaborative Team Work:** Function effectively as an individual, and as a members or leader in diverse and inclusive teams and in multidisciplinary, face-to-face, remote and distributed settings.
- PLO-09 Communication:** Communicate effectively and inclusively 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, and make effective presentations, taking into account cultural, language, and learning differences. (WK-1 and WK-9)
- PLO-10 Project Management and Finance:** Demonstrate knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member & leader in a team, to manage projects in multidisciplinary environments. (WK-2 and WK-5)
- PLO-11 Life-Long Learning:** Recognize the need for, and have the preparation and ability for
- i) independent and life-long learning
 - ii) adaptability to new and emerging technologies
 - iii) critical thinking in the broadest context of technological change. (WK-8 and WK-9)

