

FACULTY OF ENGINEERING & APPLIED SCIENCES

- School of Civil Engineering
- School of Electrical Engineering
- School of Computer Science





SCHOOL OF CIVIL ENGINEERING

- Bsc - Civil Engineering
- MS - Civil Engineering
- PhD - Civil Engineering

DEPARTMENT OF CIVIL ENGINEERING

ABOUT

Civil Engineering is a professional engineering discipline that deals with design, construction and maintenance of man-made and naturally built environment, including but not limited to, construction of airports, buildings, bridges, canals, roads, railways, tunnels, water supply, water distribution, water resources management and sewerage & sewage treatment.

We at INU, focus on interaction between the built environment and the natural world and recognize that civil engineering is crucial to meet the major challenges faced by our society; including climate change, economy recovery, growing population and urbanization,

conservation of natural resources, development of renewable energy, suitable transport, environmental quality and infrastructure ageing and resilience.

Civil Engineering Department (CED) was established in 2010. The department is accredited as per PEC's OBE based learning module under level 2 Washington Accord. The ever evolving undergraduate program of CED aims towards ingraining leadership skills, a strong sense of professionalism and ethical responsibilities in the future engineers, and prepare them to engage in lifelong eruditeness. CED is affiliated with the prestigious Pakistan Engineering Council (PEC).



CHAIRMAN'S MESSAGE



Dr. Engr. Zahid Ullah

I am delighted to welcome you to the Civil Engineering Department at IQRA National University Peshawar. As the head of the department, it is my pleasure to provide you with some insights about the program and what you can expect during your academic journey with us. Civil engineering is an exciting and diverse field that impacts every aspect of our daily lives. It encompasses everything from designing and building structures, roads, bridges, and tunnels, to managing our water resources, protecting our environment, and developing sustainable solutions to global challenges. Our civil engineering program is designed to provide you with a comprehensive and hands-on education that prepares you for a successful career in this dynamic and rewarding field. The curriculum is structured to give you a strong foundation in the fundamental principles of civil engineering while also allowing you to specialize in areas of interest to you.

Our faculty members are experienced professionals who are passionate about teaching and research. They are committed to providing you with a rigorous academic experience that will challenge and inspire you to reach your full potential. Our facilities are state-of-the-art and designed to provide you with a world-class learning experience. We have fully equipped labs and workshops where you can gain hands-on experience with the latest tools and technologies in the field. Our computer labs are equipped with the latest software and hardware, enabling you to develop your technical skills and expertise. At our department, we believe that learning extends beyond the classroom. We encourage our students to engage in extracurricular activities and participate in competitions and events that showcase their talents and skills.

We are excited about the opportunities that await you in the field of civil engineering, and we are confident that our program will provide you with the knowledge, skills, and experience you need to succeed in this challenging and rewarding field. We look forward to welcoming you to our department and supporting you throughout your academic journey.

CHAIRMAN / ASSISTANT PROFESSOR
SCHOOL OF CIVIL ENGINEERING

VISION

The civil engineering department will excel in undergraduate and graduate instruction in conformity with HEC and PEC, in training, research and design in all sub areas of civil engineering, and in service to the public, consistent with the mission of University. Advancing the mechanics of Civil and structure engineering systems within the broader context of the design, construction and operation of sustainable of the infrastructure and the geology of earth's resources and environment.

MISSION

The mission of Civil Engineering Department is to educate, inside and outside the classroom and to provide services to the university, engineering profession, and the public. To offer undergraduate and postgraduate degree programs in the breadth, width, and depth areas of infrastructure and construction engineering proficiencies. A stringent groundings in fundamentals using mathematics and engineering principles as a tool to support understanding and develop new concepts, employing fundamentals mechanics, incorporating uncertainty, and channelizing the conflicting the objectives inherent in successful civil engineering research and design.

TESTIMONIALS

Engr. Yahya Khan Marwat

Currently I am working as Sub divisional Officer at Communication and Work Department KPK. I can confidently say that my education at Iqra National University was instrumental in preparing me for the challenges of the real world. In addition to the excellent academic program, Iqra National University also provided me with numerous opportunities to gain practical experience through internships, research projects, and extracurricular activities. These experiences allowed me to apply the knowledge and skills I had learned in the classroom to real-world scenarios, and gave me a competitive edge when it came time to enter the workforce. Overall, I highly recommend Iqra National University to anyone seeking a comprehensive education in civil engineering.



Engr. Shah rukh Khan

First of all, thanks to Almighty Allah, the most merciful and beneficent of all, as this success in my life is not possible without the prayers of my parents and teachers. I had done BSc and MS in Civil engineering from Iqra National University, Peshawar. Currently I am working as Sub divisional Officer at Communication and Work Department KPK. The management staff and faculty of Iqra National University are very friendly and hardworking and guided us at every step. Iqra National University plays a key role in my career building.



FACULTY

The department employs competent faculty members qualified to accomplish the mission and goals of INU. Currently, Ph.D and MS faculty qualified from local and foreign reputable university are serving the civil engineering department.

Our staff has set high standards in terms of competence, effectiveness, professional licensure, certifications, honors and awards. There is notable continuous documented excellence in terms of teaching, and other achievements that contribute to effective teaching and student learning.

FACULTY MEMBERS

Dr. Engr. M.A.Q. Jehangir Durrani
Professor/Dean FEAS
B.Sc Civil Engineering, UET Peshawar
MS Environmental Engineering, UET Lahore
Ph.D Environmental Engineering, University of Birmingham

Dr. Engr. Zahid Ullah
Assistant Professor / Chairman
B.Sc Civil Engineering, UET Peshawar
MS Structural engineering,
Hanyang University, South korea
Ph.D Structural Engineering,
Hanyang University, South Korea

Engr. Amjad Islam
Assistant Professor/ FYDP Coordinator
MS. Structure Engineering (Linnaeus University, Sweden)
BS Civil Engineering, UET Peshawar

Engr. Fawad Ahmad
Lecturer/OBE Convener
BS Civil Engineering, University of Wah
MS. Structure Engineering (CECOS Peshawar)

Engr. Iqtidar Ali
Lecturer
BS Civil Engineering (INU Peshawar)
MS Construction Engineering & management,
INU Peshawar

Engr. Muhamamd Majid Naeem
Lecturer / Post Graduate Coordinator
BS Civil Engineering, UET Peshawar
MS.Transportation Engineering, NUST,Islamabad
MS Water Resources Engineering, INU Peshawar

Engr. Muhammad Saqib
Lecturer
BS Civil Engineering, UET Peshawar
MS Structure Engineering (UET, Peshawar)

Engr. Muhammad Haris Sadiqui
Lecturer
MS Transportation Engineering (Abasyn Peshawar)
BS Civil Engineering, City University Peshawar

Engr. Abdul Waheed
Lecturer
BS Civil Engineering, UET Peshawar
MS. Structure Engineering (NUST, Islamabad)

Engr. Fawad Khan
Lecturer
BS Civil Engineering, UET Peshawar
MS Structural Engineering, UET Peshawar

Engr. Syed Ashraf Ali
Lecturer / Deputy Convener OBE
BS Electronics Engineering, BUTEMS Quetta
MS Power & Energy Engineering (INU, Peshawar)
Ph.D Power & Energy Engineering,
INU Peshawar (in progress)

Mr. Ijaz Ahmad
Program Coordinator (B.Sc)
B.com, Frontier Commerce of Business Education
Peshawar
MBA Sarhad University Peshawar

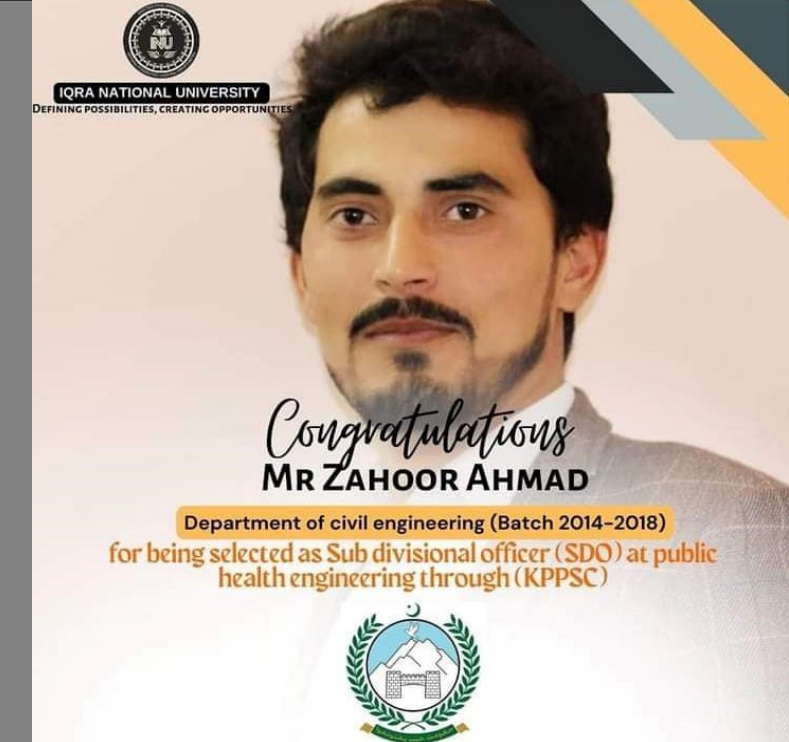
LAB STAFF

Engr. Hamza Rafiq
Lecturer
BS Civil Engineering, INU Peshawar
MS Civil Engineering, INU Peshawar

Engr. Muhammad Omair
Lecturer
BS Civil Engineering, INU Peshawar
MS Civil Engineering, INU Peshawar

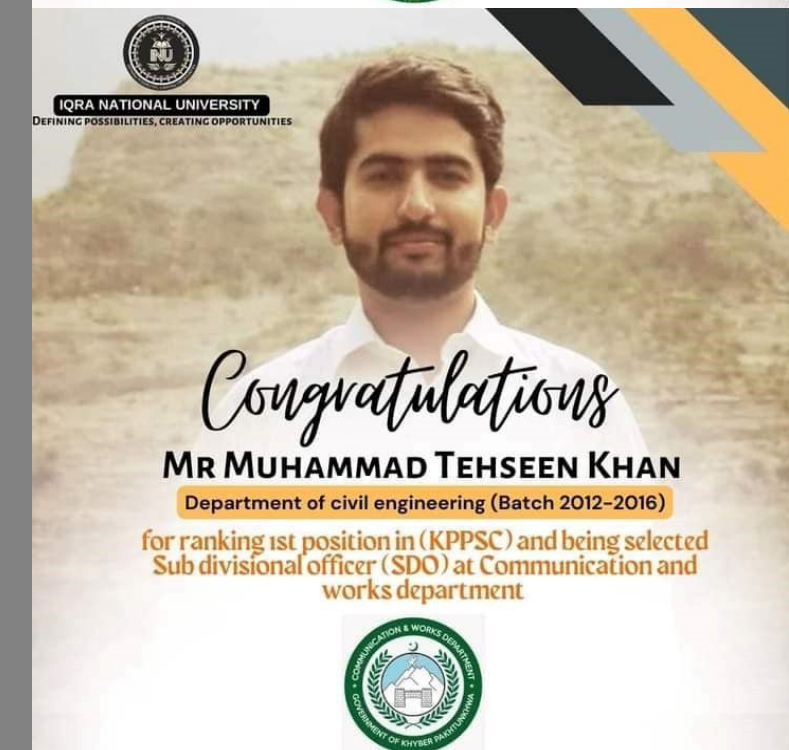
Engr. Rabia Bashir
Lecturer
BS Civil Engineering, UET Peshawar
MS Urban Infrastructure Engineering, INU Peshawar

SHINING STARS OF INU



Congratulations
MR ZAHOOR AHMAD

Department of civil engineering (Batch 2014-2018)
for being selected as Sub divisional officer (SDO) at public health engineering through (KPPSC)



Congratulations
MR MUHAMMAD TEHSEEN KHAN

Department of civil engineering (Batch 2012-2016)
for ranking 1st position in (KPPSC) and being selected Sub divisional officer (SDO) at Communication and works department



IQRA NATIONAL UNIVERSITY
DEFINING POSSIBILITIES, CREATING OPPORTUNITIES

Congratulations
MR SHAH RUKH KHAN

Department of civil engineering (Batch 2015-2018)
for being selected as Sub divisional officer (SDO) at Communication and works department through (KPPSC)



IQRA NATIONAL UNIVERSITY
DEFINING POSSIBILITIES, CREATING OPPORTUNITIES

Congratulations
MR ABUBAKAR

Department of civil engineering (Batch 2017-2021)
for being selected as Sub divisional officer (SDO) at Communication and works department through (KPPSC)





B.SC CIVIL ENGINEERING

OBJECTIVE

Established in 2010-11, the ever evolving Under-graduate program of Civil Engineering Department aims towards ingraining leadership skills, a strong sense of professionalism and ethical responsibilities in the future engineers and prepare them to engage in lifelong eruditeness.

ELIGIBILITY

1. Have 60% marks in HSSC (Pre-Engineering) or equivalent is required or Diploma in Civil Engineering
2. Have minimum 33% marks in Entry Test conducted by ETEA, UET or university test.

KEY FACTS

Degree Title:
B.Sc Civil Engineering

Credit Hours:
140 credit hours

Minimum Duration:
Four (4) years, or Eight (8) semester

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

PEO 1:
Graduates will efficiently engage in civil engineering profession with comprehensive knowledge and proficient technical skills of modern tools demonstrating the ability to investigate, analyze and design civil engineering projects.

PEO 2:
Graduates will express effective communication, team work, leadership and management skills.

PEO 3:
Graduates will engage in life-long learning, through pursuing post graduate studies, research or other opportunities to gain skills and promote professional development based on social, environmental and professional ethics to contribute to the society.

SCHEME OF STUDIES

Semester 1		Credit Hrs	
Code	Subject Name	Th	Pract
CE-111	Civil Engineering Materials	2	1
CE-112	Applied Physics & Electro-mechanical Fundamentals	2	1
CE-113	Engineering Drawing	1	2
BH-114	Functional English	3	0
NS-115	Quantitative Reasoning-I	3	0
CS-116	Applications of ICT	2	1
		13	5
	Total	18	

Semester 3		Credit Hrs	
Code	Subject Name	Th	Pract
CE-211	Civil Engr. Drawing & Graphics	1	2
CE-212	Advanced Engineering Surveying	2	1
CE-213	Fluid Mechanics	2	1
CE-214	Mechanics of Solids-I	2	1
CE-215	Structural Analysis-I	3	0
NS-216	Advanced Calculus	3	0
		13	5
	Total	18	

Semester 5		Credit Hrs	
Code	Subject Name	Th	Pract
NS-311	Numerical Analysis	3	0
CE-312	Advanced Fluid Mechanics	2	1
BS-313	Expository Writing	3	0
CE-314	Geotechnical Engineering	3	1
CE-315	Reinforced Concrete Design-I	3	1
GSQ-001	Understanding of Holy Quran -I	0	1
BS-327	Community Service	***NC	
		15	3
	Total	18	

Semester 7		Credit Hrs	
Code	Subject Name	Th	Pract
CE-411	Foundation Engineering	2	0
CE-412	Pavement Analysis & Design	2	1
CE-413	Environmental Engineering-II	2	0
CE-414	Modelling & Simulation	1	1
CE-415	Hydraulics Engineering	3	0
CE-416	Project Management	2	0
CE-417	Final Year Design Project (Part-I)	0	3
		12	5
	Total	17	

Total Credit Hours= 140
The scheme of studies and number of total credit hours may change after approval and implementation of board of studies decision.

Semester 2		Credit Hrs	
Code	Subject Name	Th	Pract
CE-121	Engineering Surveying	2	1
CE-122	Geology for Engineers	2	0
BS-123	Islamic Studies	2	0
CE-124	Engineering Mechanics	2	1
BS-125	Ideology & Constitution of Pakistan	2	0
CS-126	Computer Programming	2	1
NS-127	Quantitative Reasoning-II	3	0
		15	3
	Total	18	

Semester 4		Credit Hrs	
Code	Subject Name	Th	Pract
CE-221	Construction Engineering	2	0
BS-222	Pakistan Studies	2	0
NS-223	Applied Mathematics	3	0
CE-224	Mechanics of Solids-II	2	1
CE-225	Soil Mechanics	3	0
BS-226	Engineering Law	2	0
CE-227	Quantity & Cost Estimation	2	1
CE-228	Survey Camp	***NC	
		16	2
	Total	18	

Semester 6		Credit Hrs	
Code	Subject Name	Th	Pract
CE-321	Reinforced & Concrete Design-II	3	1
CE-322	Environmental Engineering- I	2	1
CE-323	Structural Analysis-II	3	0
CE-324	Engineering Hydrology	3	0
CE-325	Highway & Traffic Engineering	2	0
BS-326	Civics & Community Engagement	2	0
GSQ-002	Understanding of Holy Quran -II	0	1
CE-328	Internship (6-8 weeks) Mandatory & Qualifying	***NC	
		16	2
	Total	18	

Semester 8		Credit Hrs	
Code	Subject Name	Th	Pract
CE-421	Irrigation Engineering	3	0
CE-422	Geoinformatics	1	1
CE-423	Steel Structures	2	0
CE-424	Architecture & Town Planning	2	0
CE-425	Occupational Health & Safety	1	0
CE-426	Entrepreneurship	2	0
CE-427	Final Year Project (Part-II)	0	3
		11	4
	Total	15	

PROGRAM LEARNING OUTCOMES (PLOS)

Engineering Knowledge (PLO-1)

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

Problem Analysis (PLO-2)

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.

Design / Development of Solutions (PLO-3)

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.

Investigation (PLO-4)

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.

Tool Usage (PLO-5)

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.

The Engineer and the World (PLO-6)

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.

Ethics (PLO-7)

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

Individual and Collaborative Teamwork (PLO-8)

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

Communication (PLO-9)

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.

Project Management & Finance (PLO-10)

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.

Lifelong Learning (PLO-11)

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

SURVEY

Pre-requisites:

All the students are required to have secured a "PASS" grade in the following courses

- Engineering Surveying
- Advanced Engineering Surveying

Duration:

The duration for the completion of survey camp is 3 weeks, including 2 weeks of field work and one week plotting work.

Marks Distribution:

All the students are to be graded in the following manner

- Group Instructor =60% marks
- In-Charge Survey camp =40% marks

Number of Students Per Group:

A maximum of 6 students shall be allowed in a single group subject to the approval by In-Charge Survey camp.

Grading:

- Survey camp is pre-requisite for the award of degree and a certificate will be issued to student passing survey camp by chairman of department.
- A viva will be conducted at the end of survey camp by In-charge survey camp and group instructor from each group and grades will be awarded to each student.
- Students not appeared in survey camp OR have secured "FAIL" grade in survey camp will not be allowed for the award of degree until he/she appears in the next term and secure a "PASS" grade.



MS PROGRAMS

OBJECTIVE

Higher education (Postgraduate Degree) in Civil Engineering is paramount to opening doors that are not otherwise accessible. These opportunities include research positions at corporation's levels. A career at this level enables to achieve satisfaction through exploration of one's own ideas and skills. Postgraduate degree in civil engineering allows civil engineers to expand their knowledge towards problem solving, accepting new challenges and playing due role in the development of humanity.

Realizing the importance of postgraduate studies, coping up with new challenges of modern construction trends and the need for continuing education in the current environment, Iqra National University launched MS Program in civil engineering (Construction Engineering & Management, Structures and Transportation Engineering) capitalizing upon the already established state of the art infrastructure for undergraduates studies at its existing campus.

ELIGIBILITY

In line with the minimum requirement criteria by HEC for the admission in MS program, students are required to fulfill the following criteria:

- 16 years of schooling or 4 years education after HSSC / A'level in relevant discipline with minimum CGPA of 2.0 out of 4.0.
- Valid GAT (General) conducted by NTS with at least 50% accumulative test score.
- Valid GAT (General) conducted by INU with at least 60% accumulative test score.
- B.Sc in civil engineering

DURATION

The minimum duration required to earn an MS degree in Civil Engineering is 2-years. The maximum duration of the MS program is 4-years or as per HEC policy.

POSTGRADUATE PROGRAM

Following area of specialization are offered in MS Civil Engineering Degree Program

1. Construction Engineering & Management
2. Structural Engineering
3. Transportation Engineering
4. Water Resource Engineering
5. Geotechnical Engineering

SCHEME OF STUDIES (MS IN CIVIL ENGINEERING)

Construction Engineering & Management

Code	Subject Name	Cr. Hours
CE-501	Construction Project Administration	3
CE-502	Construction Law and Practice	3
CE-503	Safety Management in Construction	3
CE-504	Environmental Health & Safety	3
CE-505	Transportation Planning & Management	3
CE-506	Building Construction & Design	3
CE-507	Civil Engineering Design & Management	3
CE-508	Building Services & Engineering Systems	3
CE-509	Human Resources Management in Construction	3
CE-510	Operation Management	3
CE-601	Construction Project Engineering (planning & control)	3
CE-602	Construction Financial Management	3
CE-603	Automated Construction Management	3
CE-604	Disaster & Risk Management In Construction	3
CE-605	Advanced Construction Cost Estimating & Control	3
CE-606	Advanced Construction Management	3
CE-607	Total Quality Management	3
CE-608	Principles Of Design & Construction	3
CE-609	Highway Construction Management	3
CE-610	Energy Resource Planning & Management	3
CE-611	Construction Materials Management	3

Environmental Engineering

Code	Subject Name	Cr. Hours
CE-516	Air Pollution & Control	3
CE-517	Environmental Pollution Control	3
CE-518	Agricultural Pollution & Control	3
CE-519	Environmental Impact Assessment	3
CE-520	Environmental Health & Safety	3
CE-616	Solid Waste Management	3
CE-617	Principles of Water & Waste Water Treatment Process	3
CE-618	Chemistry & Biology Of Water & Sewage	3
CE-619	Industrial Waste Water Pollution & Management	3
CE-620	Marine Pollution Control	3
CE-621	Water Supply Engineering	3
CE-622	Waste Water Engineering	3

Geo-Technical Engineering

Code	Subject Name	Cr. Hours
CE-531	Geotechnical Site Investigation & Instrumentation	3
CE-532	Earth Retaining Structures	3
CE-533	Foundation Of Engineering Geology	3
CE-631	Advanced Geotechnical Engineering	3
CE-632	Advanced Foundation Engineering	3
CE-633	Advanced Rock Mechanics & slop Stability	3
CE-634	Advanced Soil Mechanics	3
CE-635	Ground Improvement Techniques	3
CE-636	Soil Dynamics	3
CE-637	Design & Construction Of Earthen Dams	3

Structural Engineering

Code	Subject Name	Cr. Hours
CE-546	Advanced Structural Analysis	3
CE-547	Advanced Mechanics Of Materials	3
CE-548	Timber Based Building System	3
CE-549	Advanced Concrete Technology	3
CE-550	Advanced Design of Reinforced Concrete Structures	3
CE-646	Advanced Structural Dynamics	3
CE-648	Design Of Pre-Stressed Concrete Structures	3
CE-649	Advanced Steel structures	3
CE-650	Introduction To Bridge Engineering	3
CE-651	Design Of Masonry Structures	3

Water Resource Engineering

Code	Subject Name	Cr. Hours
CE-561	Environmental Fluid Mechanics	3
CE-562	Water Demand Supply & Distribution	3
CE-563	Geo - hydrology & Geo - engineering	3
CE-564	Integrated River Management & Engineering	3
CE-565	Urban Drainage & Design Of Waste Water	3
CE-566	Irrigation Engineering & Practices	3
CE-568	Introduction to GIS	3
CE-569	Ground Water & Resource Management	3
CE-661	Design Of Hydraulic Structures	3
CE-662	Open Channel Hydraulics	3
CE-663	Sanitary Engineering	3
CE-664	Contaminated Site Remediation & Investigation Technology	3
CE-665	Sediment Transport	3
CE-666	Water & Power Supply	3
CE-667	Water Resources Engineering	3

Transportation Engineering

Code	Subject Name	Cr. Hours
CE-576	Traffic Engineering & Management	3
CE-577	Pavement Material Engineering	3
CE-578	Railway Engineering	3
CE-579	Regional development	3
CE-580	Transportation Geotechnics	3
CE-581	Regional & Urban Planning	3
CE-676	Pavement Design & Analysis	3
CE-677	Pavement Rehabilitation & Management	3
CE-678	Urban Transportation System Evaluation	3
CE-679	Geomatic Design Of Highways/Freeways	3
CE-680	Transportation Planning & Management	3
CE-681	Intelligent Transportation System	3
CE-682	Airport Engineering	3

Elective Subject

Code	Subject Name	Cr. Hours
RES-501	Applied Research Methods For Civil Engineers	3
STAT-502	Probability & Statistics	3
RES-503	Advanced Computer Applications	3
RES-504	Mathematical Modeling & Numerical Simulations	3
GIS-505	GIS & Remote Sensing (RS) Application For Civil Engineers	3
CE-567	Regional & Urban Planning	3
CE-647	Finite Element Methods	3
CE-697	Special Topics In Civil Engineering	3
RES-506	Understanding of Holy Quran -I	1
RES-507	Understanding of Holy Quran -II	1

Thesis

Code	Subject Name	Cr. Hours
CE-699	Thesis	6
CE-698	Mini Project	3

PH.D CIVIL ENGINEERING

ADMISSION CRITERIA

In line with the maximum requirement criteria set by HEC for the admission in Ph.D program. Student is require to fulfill the following criteria:

1) For admission in Ph.D minimum CGPA 3.0 (out of 4.0 in the semester system) Or First Division (in the annual system) in M.Phil./M.S/Equivalent degree in relevant field is required.

2) A subject test conducted by the national Testing service (NTS) or ETS, USA in the area of specialization by the national testing Service prior to admission for the PhD program.

- a. In the case of GAT subject test a minimum of 60% marks is required to pass the test.

*will be offered after concurrence with HEC.

PERFORMANCE REQUIREMENTS

A total of 54 credit hours comprised of 18 credit hours course work and 36 credit hours of research work must be completed as Ph.D requirements.

Course work is required to be completed preferably in the first year followed by a comprehensive examination for granting candidacy as Ph.D researcher.

The final Ph.D dissertation must be evaluated by at least two Ph.D experts form technologically/ academically advanced foreign countries in addition to local committee members.

An open public defense of dissertation is essential part of Ph.D program after successful evaluation.

Acceptance/Publication of at least one research paper based on Ph.D research work in an HEC approved "X" category journal is a requirement for the award of Ph.D degree.

The plagiarism test must be conducted on the dissertation before its submission to the two foreign experts, as per university and HEC policy.

A copy of Ph.D dissertation (Both hard and soft) must be submitted to HEC for record in Ph.D country directory and for attestation of Ph.D degree by the HEC in future.

PROGRAM DURATION

The program duration will be as per HEC criteria.

Note: The Department of Civil Engineering will offer admissions in Ph.D subject to the approval of HEC.

LIST OF COURSES

Major/Core Subjects

Code	Subject Name	Cr. Hours
CE-760	Advanced Micro-structure Of Concrete	3
CE-764	Advanced Structural Analysis	3
CE-766	Advanced Mechanics Of Materials	3
CE-864	Advanced Design Of Reinforced Concrete Structures	3
CE-861	Advanced Design Of Pre-stressed Concrete Structures	3
CE-780	Advanced Environmental Fluid Mechanics	3
CE-781	Advanced Geohydrological Modelling	3
CE-782	Basics Of Atmospheric Sciences	3
CE-880	Stochastic Modelling And Geostatistics	3
CE-881	Advanced Design Of Hydraulic Structures	3

Elective Subjects

Code	Subject Name	Cr. Hours
RES-701	Research and Analysis Methods For Engineers	3
RES-702	Advanced Mathematical and Numerical Modeling	3
RES-882	Numerical Methods of Differential Equations	3
CE-765	Advanced Steel Structures	3
CE-768	Advanced Structural Dynamics	3
CE-862	Finite Element Methods	3
CE-784	Applied GIS	3
CE-882	Multiphase Modelling in Pourus Media	3
CE-783	Forecast And Forecast Verification	3
CES-767	Civil Engineering Design	3

Thesis

Code	Subject Name	Cr. Hours
CE-879	Thesis	36

