Alumni Say

Overall, my time at FOE, Lahore Leads University so far has been incredible. I truly have enjoyed every minute of it, and I feel really grief leaving it. If anyone is considering FOE, Lahore Leads University, and specifically to study Civil Engineering, I will definitely prefer them, with no hesitation, because it's an incredible course with some incredible people to support you. **Engr. Ahtisham Akhtar**

It was a great experience for me to present myself as a professional engineer in the field.

My university provide me platform to enhance the technical and managerial skills as well.

Engr. Hussnain Ali Maan

I have thoroughly enjoyed my time studying at Leads University and believe it was the best choice for me. It has provided me with so many opportunities which have been great for my Business and personal growth.

Engr. Rana Muhammad Mudassar Akram

I took admission in 2012 in Civil Engineering Deptt. University is recognized by HEC and PEC. There are 7 PhD Doctors in Civil Engineering Deptt. University provided us opportunities to internship so that I never felt any problem to get job. Those students who want to pursue their education in engineering. I will suggest only this institute. **Engr. Nasir Bhatti**

I loved the time I spent at FoE Lahore Leads University. It was an absolute blast and a thrill! the people are warm and friendly not to mention the teacher who are just spot on helpful and will go out of their way to make you understand something you may not have.

Engr. M. Tabeen ul Barkaat

LAHORE
LEADS UNIVERSITY
Faculty of Engineering

Admission Forms & Prospectus Available at Engineering Campus:

University Boulevard, West Wood Colony, Thokar Niaz Baig, Lahore.

0331-4913131, 0337-7510907, 0300-4001301
0312-9699884, 0344-4445602, 0341-4483911

042-37510907-09, 38103333, 38103334

For online application & other details please visit:

www.FoE.leads.edu.pk /UCEST.Official admissions@ucest.edu.pk

www.advoice.pk 0322-4122775

LAHORE
LEADS UNIVERSITY
Faculty of Engineering

FoE Guide
2021-22

Engineering Programs are approved by HEC & accredited by PEC at Level II

Vice Chancellor's Message

Dr. Muhammad Shahid Soroya
Vice Chancellor
Lahore Leads University

Welcome to Lahore Leads University, an institution committed to shaping your destinies. LLU believes in playing a vital role in providing solutions to the socio-economic and technological problems faced by the nation, through providing quality education to the youth. This requires replacing rigid principles and outdated approaches in education with focused vision and modern pedagogical methods of bringing about a positive change. We aim at providing quality education by keeping the faculty and students abreast with advances in knowledge and research. We train our students to observe, analyze and assess things with reason and judgment from a liberal point of view. We encourage them to probe newer avenues of knowledge and adopt innovative trends in their respective fields of interest and groom themselves to utilize their intellectual energies and skills to produce results applicable in industry and trade. We offer a range of carefully designed programs in disciplines of computer science, information technology, management sciences, engineering, basic and sports sciences, and humanities that best suit the region for its economic growth. Our students work in an atmosphere that combines rigorous academic studies with the excitement of discovery and pleasure of innovation. LLU enjoys a respectable place among its competitors and is playing a catalytic role in contributing its share to socio economic uplift of Pakistan. I urge my students to put their hearts and souls in their studies and strive for making a significant contribution for the development of their motherland.

Principal's Message

Engr. Haider Ali Khan
BSc Civil Engineering (UET)
MBA, Member ASCE (USA)
Member Governing Body,
Pakistan Engineering Council

Principal,
Faculty of Engineering,
Lahore Leads University.

Lahore Leads University, West Wood Campus warmly welcomes you on the doorstep of the city of colleges, Lahore. Being the part of fast growing Lahore Leads University, we are committed to educate our dynamic youth in the fields of engineering and technology. This institution offers the latest curriculum aligned with HEC's recommendations and adheres to the guidelines of Pakistan Engineering Council (PEC). Our BSc Civil Engineering and BSc Electrical Engineering programs are accredited by PEC at level II under the accreditation criteria set by the Washington Accord for which Pakistan is a signatory.

Our highly qualified teaching faculties, with both local and international qualifications, are dedicated professionals, who are always ready to go extra mile to ensure that the students are offered the opportunity to fulfill their potential, both in and outside the classroom. At Faculty of Engineering, education means much more than just good grades. We are justifiably proud of our performance and enjoy the luxury of trust of our students and the regulators. We consistently inculcate good human traits in the character of our students and prepare them to master every type of challenge in serving the profession and society. We are acutely aware of our obligation to train our youth to take up their responsibilities in the real life as honest, economical, environment friendly, caring and responsible professionals.

At our 3 acre purpose built campus, we have provided standard facilities to nourish healthy minds and physique of students. For that purpose, gym, badminton, table tennis courts and athletics facilities are provided in the campus as well besides lush green lawns and play grounds. Good institutions are built on the effort of good people, and I am honored to admit that our teachers and students are among the very best in Pakistan. Why not, spare some of your precious time by visiting our teaching and learning facilities, we would be delighted to welcome you.

Vision and Mission

VISION :

To emerge as a seat of higher learning producing empowered and responsible leadership through holistic development of individuals in all domains of erudition, nation building, corporate realms, and public service.

MISSION :

Creation of a serene environment conducive to learning, skill building, research, and innovation, thus preparing individuals capable of meeting contemporary and future challenges in a highly dynamic mode.

Commitment

We are living in an era, where the information is multiplying every moment. We can only keep up our pace with these rapid changes by using best practices in the fields of engineering and technology.
Imagine what would happen in the future where information may be doubling with sky rocketing speed and we will be the part of that fast community, not as an ordinary person but a future competent engineer to clutch the fast moving hands of time.

Here at Lahore Leads University you are invited to be part of this alma-mater and accept the challenge to be a part of the future Hi-Tech community.

Department of Civil Engineering

Introduction

The department of Civil Engineering enjoys the association of highly competent academic professionals dedicated to develop well trained individuals who will have dexterity to handle the problems in the field with professional confidence. The faculty dedicated to excellence in undergraduate teaching and is well known in the engineering community.

The BSc Civil Engineering program is designed to meet the criteria adopted by the Higher Education Commission (HEC) of Pakistan in line with the guideline of Pakistan Engineering Council (PEC), while considering the local industry needs and international practices. The Board of Studies of Civil Engineering Department periodically updates and reviews the curriculum in order to keep it in line with the future needs.

The BSc Civil Engineering program is accredited by Pakistan Engineering Council (PEC) and our graduates are serving the society in their respective fields.

In past years, focus of civil engineers was on design and construction of facilities such as buildings, bridges and highways, water treatment plants, environmental facilities and tunnels. Today's civil engineers not only design new facilities but also analyze the effects of deterioration on infrastructure elements, consider system interdependencies and evaluate the life-cycle impacts while considering environmental and economic sustainability within the context of ever changing society. Civil engineers must be trained and are professionals who are equipped with in-depth knowledge of fundamental principles and new technologies to address the complex and interdisciplinary problems. The undergraduate program of Civil Engineering, Lahore Leads University provides necessary engineering background to serve the society.

PROGRAM MISSION & PEOs

Program Mission

Provide intellectually challenging educational environment to produce Civil Engineers with strong foundation in fundamentals and prepare them to develop solution for the needs of the relevant industry and society.

Program Educational Objectives (PEOs)

After the graduation, the students with bachelors in civil engineering will be able to:

PEO-1: Provide solutions to civil engineering problems by applying acquired knowledge of scientific and engineering principles.

PEO-2: Contribute to the sustainable development in the country by practicing engineering within ethical standards with due considerations for health, safety and environment.

PEO-3: Demonstrate effective communication, teamwork and management skills.

PEO-4: Seek further education and professional growth.

Key Facts:

Degree Title:	BSc Civil Engineering
Duration:	4 years (8 semesters)
Total Credit Hours:	136

The program is accredited by Pakistan Engineering Council at level II under the accreditation criteria set by Washington Accord.

Eligibility: The applicant must have minimum 60% marks in F.Sc. / A' Level / DAE or equivalent.

Entry test as per guidelines of PEC.

Program Learning Outcome (PLOs) of BSc Civil Engineering Program

Following is the list of Program Learning Outcomes (PLOs) of BSc Civil Engineering Programs:

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

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

PLO - 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.

PLO - 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 the information to derive valid conclusions.

PLO - 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.

PLO - 6: The Engineer and Society
An ability to apply to reason informed by the 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.

PLO - 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.

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

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

PLO - 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.

PLO - 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.

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

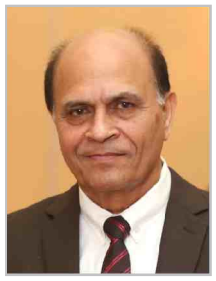
Teaching Faculty in Civil Engineering Department

Department of Civil Engineering has a faculty who is dedicated to excellence in teaching and are well known in the Engineering Community.

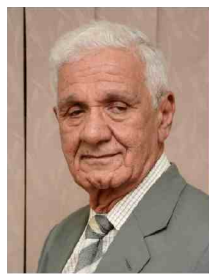
Faculty Members

Prof. Dr. Muhammad Ilyas
Department Chair

Dr. Nazir Ahmad Hawary
Professor



Dr. Riaz Akhtar
Professor



Prof. Engr. Zia Ud Din Mian
Professor

Dr. Rana Nisar Ahmad
Associate Professor

Engr. Sardar Babar Khan
Associate Professor

Fazal Ahmad
Lecturer

Engr. Jabbar ul Haq
Lecturer

Engr. Faisal Amin
Lecturer

Engr. Sahar Iftikhar
Lecturer

Engr. Usman Ali
Lecturer

Engr. Muhammad Zain
Junior Lecturer

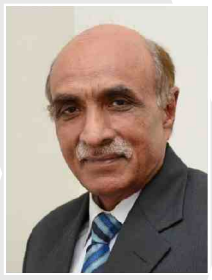
Engr. M. Umair Afzal
Lab Engineer

Engr. M. Umer Afzal
Lab Engineer

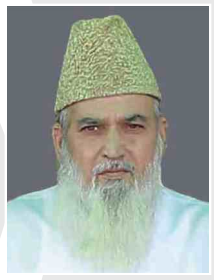
Engr. Faran Adil
Lab Engineer

Engr. Muhammad Waleed
Lab Engineer

Allied Faculty



Dr. Nazir Ahmad Ch
Professor



Prof. Hafiz Muhammad Ayub
Professor

Mr. Muhammad Adnan
Lecturer

Civil Engineering Labs:

At Department of Civil Engineering, excellent laboratory facilities are available which are equipped with latest instruments and paraphernalia. The students conduct experiments and gain valuable hands on experience in the labs. The following labs are available in the Civil Engineering Department:

- ✓ Computer Lab
- ✓ Engineering Drawing Lab
- ✓ Engineering Materials Lab
- ✓ Engineering Mechanics Lab
- ✓ Environmental Engineering Lab
- ✓ Fluid Mechanics & Hydraulics Lab
- ✓ Material and Concrete Lab
- ✓ Soil Mechanics Lab
- ✓ Strength of Materials Lab
- ✓ Surveying Lab
- ✓ Transportation Lab

BSc Civil Engineering - Scheme of Studies

Semester-I		Cr. Hrs	
Code	Course Title	Th	L
CE 103	Civil Engineering Materials	2	1
EM 102	Basic Electro-Mechanical Engr.	2	1
CE 105	Engineering Drawing	1	2
HU 103	English Language Skills	2	0
MA 104	Applied Calculus (Math-I)	3	0
HU 104	Islamiat & Pakistan Studies	3	0
	Total	**17**	

Semester-II		Cr. Hrs	
Code	Course Title	Th	L
CE 101	Surveying-I	2	2
CE 106	Computer Fundamentals & Prog.	1	2
CE 108	Engineering Geology	3	0
CE 102	Engineering Mechanics	3	1
MA 105	Differential Equations (Math-II)	3	0
	Total	**17**	

Semester-III		Cr. Hrs	
Code	Course Title	Th	L
CE 205	Civil Engr. Drawing & Graphics	1	2
CE 201	Surveying-II	2	1
CE 212	Mechanics of Solids-I	2	1
MA 201	Probability & Statistics (Math-III)	3	0
HU 204	Business Communication	2	0
HU 206	Engineering Economics	2	0
	Total	**16**	

Semester-IV		Cr. Hrs	
Code	Course Title	Th	L
CE 215	Construction Engineering	2	0
CE 213	Structural Analysis-I	3	0
CE 221	Soil Mechanics	3	1
CE 202	Geo-informatics	1	1
MA 202	Numerical Analysis (Math-IV)	3	0
CE 231	Fluid Mechanics-I	3	1
	Total	**18**	

Semester-V		Cr. Hrs	
Code	Course Title	Th	L
CE 331	Fluid Mechanics-II	3	1
HU 307	Entrepreneurship & Innovation	2	0
CE 311	Structural Analysis-II	3	0
CE 306	Quantity Survey & Estimation	2	1
CE 321	Geotechnical & Foundation Engr.	3	1
HU 308	Professional Ethics	2	0
	Total	**18**	

Semester-VI		Cr. Hrs	
Code	Course Title	Th	L
CE 312	Mechanics of Solids-II	2	1
CE 314	Plain & Reinforced Concrete-I	3	1
CE 341	Environmental Engineering-I	3	1
CE 351	Transportation Planning & Engr.	3	0
CE 332	Hydrology & Water Res. Mgmt.	2	1
HU 305	Tech. Report Writing & Presentation	0	1
	Total	**18**	

Semester-VII		Cr. Hrs	
Code	Course Title	Th	L
CE 411	Plain & Reinforced Concrete-II	3	1
CE 441	Environmental Engineering-II	3	1
CE 412	Steel Structures	3	0
CE 431	Hydraulics Engineering	2	1
CE 499	Civil Engineering Project	0	3
	Total	**17**	

Semester-VIII		Cr. Hrs	
Code	Course Title	Th	L
CE 414	Design of Structures	2	1
CE 451	Highway & Traffic Engineering	3	1
CE 432	Irrigation Engineering	2	0
CE 413	Construction Management	2	1
CE 499	Civil Engineering Project	0	3
	Total	**15**	

Total Credit Hours : 136

1 Cr. Hr. of theory (Th) = 1 contact Hour per week
1 Cr. Hr. of lab (L) = 3 contact Hours per week

Department of Electrical Engineering

Introduction

Electrical Engineering is the profession that applies various kinds of sound scientific knowledge and problem solving skills to the design, implementation, operation and maintenance of electrical and electronic devices, equipment, services and information systems. Electrical engineers find innovative ways to use electricity, information, computers and electronics to make people's lives better. This program offers a unique combination of independent students' studies, exposure to various small projects, developments in the field and challenging course work both within and beyond engineering. This combination is designed to prepare our students to excel both in engineering innovation and in life-long learning.

The goal of the curriculum of the electrical engineering undergraduate program is to prepare the engineers to avail broad range of opportunities in educational fields, industrial, commercial and governmental organizations. This goal can be achieved through a curriculum designed in the light of recommendations of HEC/PEC by the board of studies to fulfill the following objective:

PROGRAM MISSION & PEOs

Program Mission

Provide intellectually challenging educational environment to produce Electrical Engineers with strong foundation in fundamentals and prepare them to develop solution for the needs of the relevant industry and society.

Program Educational Objectives (PEOs)

After the graduation, the students with bachelors in Electrical Engineering will be able to:

PEO-1: Provide solutions to Electrical Engineering problems by applying acquired knowledge of scientific and engineering principles.

PEO-2: Contribute to the sustainable development in the country by practicing engineering within ethical standards with due considerations for health, safety and environment.

PEO-3: Demonstrate effective communication, teamwork and management skills.

PEO-4: Seek further education and professional growth.

Key Facts:

Degree Title:	BSc Electrical Engineering
Duration:	4 years (8 semesters)
Total Credit Hours:	136

The program is accredited by Pakistan Engineering Council at level II under the accreditation criteria set by Washington Accord.

Eligibility: The applicant must have minimum 60% marks in F.Sc. / A' Level / DAE or equivalent.

Entry test as per guidelines of PEC.

Program Learning Outcome (PLOs) of BSc Electrical Engineering Program

Following is the list of Program Learning Outcomes (PLOs) of BSc Electrical Engineering Programs:

PLO - 1: Engineering Knowledge

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

PLO - 2: Problem Analysis

An ability to identify, formulate, research literature and analyses complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PLO - 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.

PLO - 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 the information to derive valid conclusions.

PLO - 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.

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PLO - 7: Environment and Sustainability

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PLO - 8: Ethics

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

PLO - 9: Individual and Teamwork

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

PLO - 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.

PLO - 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.

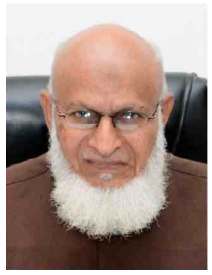
PLO - 12: Lifelong Learning

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

Teaching Faculty in Electrical Engineering Department

The department of Electrical Engineering enjoys the association of highly competent academic professionals who are dedicated team members to develop well trained individuals who have dexterity to handle the problems in the field with professional confidence. We have a faculty who is dedicated to excellence in teaching and provide guidance and support that student's need from them.

Faculty Members



Prof. Dr Monir Ahmad
Department Chair-Professor

Dr. M. Saeed Khan
Associate Professor

Engr. Saba Zia
Assistant Professor

Engr. Muhammad Saleem
Assistant Professor

Engr. Ahsan Zafar
Assistant Professor

Engr. Komal Nadeem
Assistant Professor

Engr. M. J. Ahmad Khalid
Lecturer

Engr. Jahanzaib Khan
Lecturer

Engr. Anum Aslam
Lecturer

Engr. Razi Haider Khan
Lecturer

Engr. Aniqa Ahmad
Junior Lecturer

Engr. M. Rayyan Khalid
Junior Lecturer

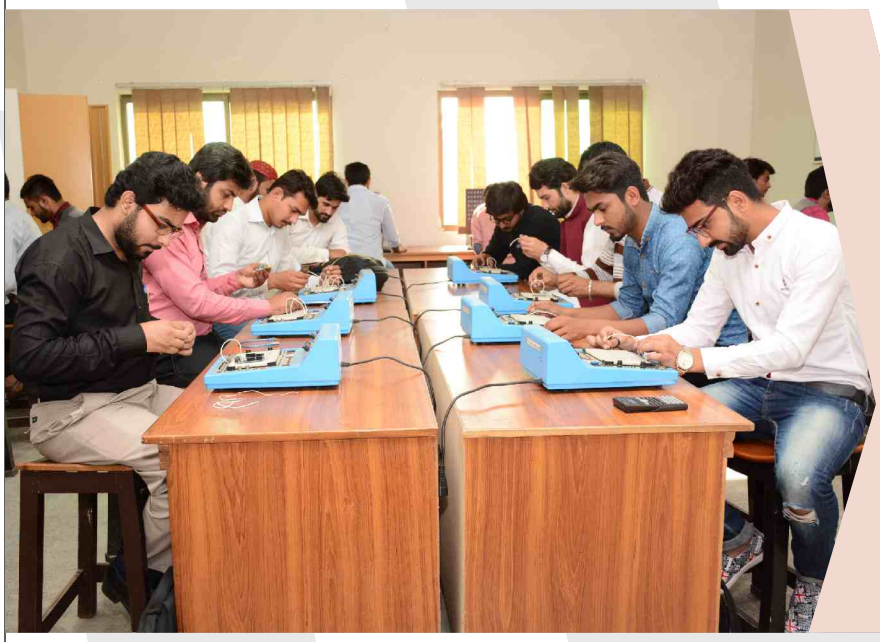
Engr. Umair Liaqat
Junior Lecturer

Engr. Faizan Ali Khan
Lab Engineer

Engr. Hasnat Tariq
Lab Engineer

Electrical Engineering Labs

At Department of Electrical Engineering, excellent laboratory facilities are available which are equipped with latest instruments and paraphernalia. The students conduct lots of experiments and gain valuable hands on experience in the labs. The labs provided in the Electrical Engineering Department are listed below:



- ✓ Automation and Control Lab
- ✓ Communication Systems Lab
- ✓ Computer Lab
- ✓ Digital Logic Design Lab
- ✓ Electric Circuits Lab
- ✓ Electrical Machines Lab
- ✓ Electrical Workshop & Physics Lab
- ✓ Electronics Lab
- ✓ Embedded Systems Lab
- ✓ Power Electronics Lab
- ✓ Power Engineering Lab
- ✓ Undergraduate Research Lab

BSc Electrical Engineering - Scheme of Studies

Semester-I		Cr. Hrs	
Code	Course Title	Th	L
HU100	Functional English	2	0
MA100	Calculus and Analytical Geometry	3	0
EE102	Linear Circuit Analysis	3	1
EE100	Workshop Practice	0	1
CS140	Introduction to Computing	3	1
EE101	Engineering Drawing	0	1
NS100	Applied Physics	2	1
	Total	18	

Semester-II		Cr. Hrs	
Code	Course Title	Th	L
HU101	Communication Skills	2	0
MA101	Differential Equations	3	0
CS141	Programming Fundamentals	3	1
EE111	Electronic Devices and Circuits	3	1
HU104	Islamic Studies	2	0
ME201	Basic Mechanical Engineering	3	0
	Total	18	

Semester-III		Cr. Hrs	
Code	Course Title	Th	L
CS242	Data Structures and Algorithms	3	1
MA202	Linear Algebra	3	0
EE203	Electrical Network Analysis	3	1
EE250	Digital Logic Design	3	1
ME200	Applied Thermodynamics	3	0
	Total	18	

Semester-IV		Cr. Hrs	
Code	Course Title	Th	L
MA203	Multivariable Calculus	3	0
EE220	Signals and Systems	3	1
EE251	Introduction to Embedded Systems	3	1
EE260	Electrical Machines	3	1
HU105	Pakistan Studies	2	0
	Total	17	

Semester-V		Cr. Hrs	
Code	Course Title	Th	L
EE361	Instrumentation and Measurements	3	1
EE304	Probability Methods in Engineering	3	0
EE370	Linear Control Systems	3	1
MA304	Numerical Analysis	3	0
SS303	Organizational Behavior	3	0
	Total	17	

Semester-VI		Cr. Hrs	
Code	Course Title	Th	L
EE321	Communication Systems	3	1
EE362	Electrical Power Distribution & Util.	3	1
HU302	Technical Report Writing	3	0
EE330	Electromagnetic Field Theory	3	0
MG301	Engineering Economics	3	0
	Total	17	

Semester-VII		Cr. Hrs	
Code	Course Title	Th	L
EE464	Power System Analysis	3	1
EE413	Power Electronics	3	1
EE469	Power Generation	3	0
SS402	Entrepreneurship	3	0
EE490	Senior Design Project Phase-I	0	3
	Total	17	

Semester-VIII		Cr. Hrs	
Code	Course Title	Th	L
EE467	Power System Protection	3	1
EE481	Power Transmission	3	1
MG402	Engineering Project Management	3	0
EE490	Senior Design Project Phase-II	0	3
	Total	14	

Total Credit Hours : 136

1 Cr. Hr. of theory (Th) = 1 contact Hour per week
1 Cr. Hr. of lab (L) = 3 contact Hours per week

Department of Mechanical Engineering

Introduction

Mechanical Engineering is the discipline of Engineering that applies the principles of physics and materials science for analysis, design, manufacturing and maintenance of mechanical systems. It includes the usage and production of heat and mechanical power for design, production and operation of machines and tools.

Mechanical Engineering requires an understanding of core concepts including mechanics, kinematics, thermodynamics, structural analysis and theory of automation. Mechanical Engineers use all these core principles along with tools like computer aided engineering and production management to design and analyze manufacturing plants, industrial equipment and machinery, heating and cooling systems, transport systems, aircrafts, robotics and others.

The course designed for mechanical engineering is based on practical work, problem solving activity and work assignments. Through internship students are trained in industries which develop their practical confidence that is the demand of so many employers.

The Mechanical Engineering program is designed to meet the criteria adopted by the Higher Education Commission (HEC) and Pakistan Engineering Council (PEC). Subject Curriculum remains in review by the Departmental Board of Studies.

PROGRAM MISSION & PEOs

Program Mission

To provide intellectually challenging educational and research environment to produce Mechanical engineers with a strong foundation in fundamentals and prepare them to develop a solution for future needs of the relevant industry and society

Program Educational Objectives (PEOs)

With extensive five years of professional experience, the alumni of BSc Mechanical Engineering will be able to:

PEO-1: Provide solutions to Mechanical engineering problems by applying acquired knowledge of scientific and engineering principles.
PEO-2: Contribute to the sustainable development in the country by practicing engineering within ethical standards with due considerations for health, safety, and environment.
PEO-3: Demonstrate effective communication, teamwork and management skills
PEO-4: Seek further education and professional growth

Key Facts:

Degree Title:	BSc Mechanical Engineering
Duration:	4 years (8 semesters)
Total Credit Hours:	136

The program is accredited by Pakistan Engineering Council.

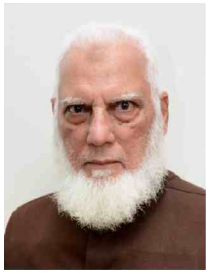
Eligibility: The applicant must have minimum 60% marks in F.Sc. / A' Level / DAE or equivalent

Admission will be followed by entry test of Lahore Leads University or NTS or UET entry test.

Teaching Faculty in Mechanical Engineering Department

The department of Mechanical Engineering enjoys the association of highly competent academic professionals who are dedicated team members to develop well trained individuals who have dexterity to handle the problems in the field with professional confidence. In Department of Mechanical Engineering, we have a faculty who are dedicated to excellence in undergraduate teaching and provide guidance and support that student's need from them.

Faculty Members



Prof. Dr. Saleem Iqbal Alvi
Dean - Professor

Prof. Dr. Amjad Pervaz
Department Chair-Professor

Engr. Khalid Mahmood
Assistant Professor

Engr. Yasser M. Siddiqi
Assistant Professor

Engr. Samia Sadaf
Lecturer

Engr. Sidra Tul Muntaha
Lecturer

Engr. Arsalan Fazil
Lecturer

Engr. M. Mubashir Farid
Junior Lecturer

Mechanical Engineering Labs

At Department of Mechanical Engineering, excellent laboratory facilities are available which are equipped with latest instruments and paraphernalia. The students conduct lots of experiments and gain valuable hands on experience in the labs. Some modern and state of the art labs provided in the Mechanical Engineering Department are listed below:

- ✓ CNC Lab (CAD/CAM)
- ✓ Computer Lab
- ✓ Engineering Mechanics Lab
- ✓ Fluid Mechanics Lab
- ✓ Heat & Mass Transfer Lab
- ✓ I.C. Engine Lab
- ✓ Mechanical Vibration Lab
- ✓ Mechanical Workshop
- ✓ Mechanics of Machines Lab
- ✓ Mechanics of Materials Lab
- ✓ Power Plant Lab
- ✓ Precision Engineering & Metrology Lab
- ✓ Thermodynamics Lab

BSc Mechanical Engineering - Scheme of Studies

Semester-I		Cr. Hrs	
Code	Course Title	Th	L
GS 101	Mathematics-I	3	0
GS 102	Applied Physics	2	1
CS 101	Computer Systems & Programming	2	1
ME 113	Engineering Drawing & Graphics	1	1
HS 121	Functional English	2	0
GS 103	Applied Chemistry	2	0
	Total	**15**	

Semester-II		Cr. Hrs	
Code	Course Title	Th	L
ME 104	Computer Aided Drawing	0	1
EE 101	Electrical Engineering	2	1
GS 102	Mathematics-2	3	0
ME 111	Workshop Practice	0	2
ME 112	Engineering Mechanics-I (Statics)	3	0
HS 101	Communication Skills	1	1
ME 113	Engineering Materials	3	0
	Total	**17**	

Semester-III		Cr. Hrs	
Code	Course Title	Th	L
ME 211	Engr. Mechanics-II (Dynamics)	3	1
IS 201	Pak Studies	2	0
ME 212	Mechanics of Material-I	3	0
ME 221	Thermodynamics-I	3	0
GS 203	Mathematics-3	3	0
HS 211	Tech. Report Writing & Pres. Skills	1	1
	Total	**17**	

Semester-IV		Cr. Hrs	
Code	Course Title	Th	L
EE 201	Electronics Engineering	2	1
ME 221	Thermodynamics-II	3	1
ME 211	Machine Design-I	3	0
ME 215	Mechanics of Materials-II	3	1
ME 222	Fluid Mechanics-I	3	0
SS 211	Operations Management	2	0
	Total	**19**	

Semester-V		Cr. Hrs	
Code	Course Title	Th	L
ME 314	Fluid Mechanis-II	3	1
GS 314	Mathematics-4	2	1
ME 311	Machine Design-II	2	0
ME 312	Instrumentation & Measurement	2	1
ME 321	Heat & Mass Transfer	3	0
ME 313	Manufacturing Processes	3	1
	Total	**19**	

Semester-VI		Cr. Hrs	
Code	Course Title	Th	L
GS 302	Engineering Statistics	3	0
ME 324	Renewable Energy Technology	2	0
EE 315	Control Engineering	3	1
ME 316	Mechanics of Machines	3	0
ME 322	Heating,Ventilation & AC+HMT Lab	3	1
ME 323	Health, Safety & Environment	1	0
	Total	**17**	

Semester-VII		Cr. Hrs	
Code	Course Title	Th	L
ME 411	Mechanical Vibrations	3	1
ME 422	Engineering Economics	2	0
ME 421	Internal Combustion Engines	3	0
MA 423	Intro. to Finite Element Analysis	2	1
ME 414	Introduction to Mechatronics	2	0
ME 425	Senior Design Project-I	0	3
	Total	**17**	

Semester-VIII		Cr. Hrs	
Code	Course Title	Th	L
IS 401	Islamic Studies/Ethics	2	0
ME 422	Maintenance Engineering	2	0
ME 424	Power Plant	3	1
ME 412	Project Management	2	0
ME 410	Entrepreneurship	2	0
ME 425	Senior Design Project-II	0	3
	Total	**15**	

Total Credit Hours : 136

1 Cr. Hr. of theory (Th) = 1 contact Hour per week
1 Cr. Hr. of lab (L) = 3 contact Hours per week

Technical Elective Courses

1. Renewable Energy Technology
2. Gas Dynamics
3. Aerodynamics
4. Computational Fluid Dynamics (CFD)
5. Maintenance Engineering
6. Introduction to Mechatronics
7. Automation and Robotics
8. Tribology
9. Nuclear Engineering
10. Mechanical Engineering Design

Management Elective Courses

1. Operations Management
2. Total Quality Management
3. Project Management
4. Operations Research
5. Engineering Law
6. Entrepreneurship

Department of Technologies

Technological development and learning play a significant role in the economic development of a nation. We, at Lahore Leads University, aim to provide students an opportunity to grow in an educational environment that exceeds their expectations and help them reach their unique potential. We offer BS Engineering Technologies in the fields of Civil, Electrical and Mechanical. Our degree programs are accompanied with industrial trainings and internships which provide an opportunity for students to learn thorough practical examples and gain hands-on-experience.

The Faculty of Engineering, Lahore Leads University is currently offering three BS Engineering Technology programs in technologies at its campus

BS Engineering Technology Civil
BS Engineering Technology Electrical
BS Engineering Technology Mechanical

BS Engineering Technology Civil - Scheme of Studies

Semester-I		C.H.
Code	Course Title	
CH-112	Islamic Studies / Professional Ethics	2
CS-113	Applied Mathematics-I	3
CS-123	Intro. to Computer Fundamentals	1
CS-123	Intro. to Computer Fundamentals (Lab)	2
CT-113	Civil Engineering Drawing	1
CT-113	Civil Engineering Drawing (Lab)	2
CT-124	Surveying	2
CT-124	Surveying (Lab)	2
CM-112	Occupational Health & safety Mgmt.	2
	Total	**17**

Semester-II		C.H.
Code	Course Title	
CT-134	Concrete Technology	2
CT-134	Concrete Technology (Lab)	2
CH-123	Communication Skills	3
CT-144	Applied Mechanics	2
CT-144	Applied Mechanics (Lab)	2
CT-154	Materials and Methods of Construction	2
CT-154	Materials and Methods of Construction (Lab)	2
CS-133	Applied Mathematics - II	3
	Total	**18**

Semester-III		C.H.
Code	Course Title	
CT-212	Introduction to Architecture and Town Planning	2
CH-212	Pakistan Studies	2
CT-223	Quantity Surveying & Contract Docs	1
CT-223	Quantity Surveying & Contract Documents (Lab)	2
CT-233	Soil Mechanics	2
CT-233	Soil Mechanics (Lab)	1
CT-243	Fluid Mechanics	2
CT-243	Fluid Mechanics (Lab)	1
CT-254	Mechanics of Solids	2
CT-254	Mechanics of Solids (Lab)	2
	Total	**17**

Semester-IV		C.H.
Code	Course Title	
CT-264	Transportation Engineering	2
CT-264	Transportation Engineering (Lab)	2
CT-274	Water Supply & Waste Water Management	2
CT-274	Water Supply & Waste Water Management (Lab)	2
CM-213	Environmental Management	2
CM-213	Environmental Management (Lab)	1
CT-283	Theory of Structures	2
CT-283	Theory of Structures (Lab)	1
CH-223	Technical Report Writing	3
	Total	**17**

Semester-V		C.H.
Code	Course Title	
CT-313	Hydrology	2
CT-313	Hydrology (Lab)	1
CT-323	Reinforced Concrete Structures	2
CT-323	Reinforced Concrete Structures (Lab)	1
CT-333	Construction and Hydraulic Machinery	2
CT-333	Construction and Hydraulic Machinery (Lab)	1
CT-343	Computer Aided Building Modeling and Design	1
CT-343	Computer Aided Building Modeling & Design (Lab)	2
CT-353	Foundations Engineering	2
CT-353	Foundations Engineering (Lab)	1
CM-313	Project Management	3
	Total	**18**

Semester-VI		C.H.
Code	Course Title	
CT-363	Pre-stressed & Precast concrete	2
CT-363	Pre-stressed & Precast concrete (Lab)	1
CT-373	Geology & Earthquake Engineering	2
CT-373	Geology & Earthquake Engineering (Lab)	1
CT-383	Irrigation and Hydraulic Structures	2
CT-383	Irrigation and Hydraulic Structures (Lab)	1
CT-393	Steel Structures	2
CT-393	Steel Structures (Lab)	1
CT-3103	Project (Lab)	3
CT-3113	Project (Continue) (Lab)	3
	Total	**18**

Semester-VII		C.H.
Code	Course Title	
CT-4116	16 Weeks Supervised Industrial / Field Training (8x5=40 hrs. / Week)	16
	Total	**16**

Semester-VIII		C.H.
Code	Course Title	
CT-4216	16 Weeks Supervised Industrial / Field Training (8x5=40 hrs. / Week)	16
	Total	**16**

BS Engineering Technology Electrical-Scheme of Studies

Semester-I		C.H.
Code	Course Title	
ES-113	Applied Mathematics-I	3
ET-114	Linear Circuit Analysis	2
ET-114	Linear Circuit Analysis (Lab)	1
ET-133	Introduction to Computer Fundamentals	1
ET-133	Intro. to Computer Fundamentals (Lab)	2
ES-123	Applied Physics	2
ES-123	Applied Physics (Lab)	1
ET-123	Engineering Drawing	1
ET-123	Engineering Drawing (Lab)	2
EH-112	Islamic Studies/Ethics	2
	Total	**17**

Semester-II		C.H.
Code	Course Title	
EH-123	Communication Skills	3
EH-132	Pak-Studies	2
ET-134	Electronics	2
ET-134	Electronics (Lab)	2
ET-143	Basic Mechanical Technology	2
ET-143	Basic Mechanical Technology (Lab)	1
ES-143	Applied Mathematics- II	3
ET-153	Electrical Machine-I	2
ET-153	Electrical Machine-I (Lab)	1
	Total	**18**

Semester-III		C.H.
Code	Course Title	
ET-212	Power Generation Systems	2
EH-213	Technical Report Writing	3
ET-224	Electrical Instruments & Measurements	2
ET-224	Electrical Instruments and Measurements (Lab)	2
ET-234	Electrical Machine- II	2
ET-234	Electrical Machine- II (Lab)	2
ET-244	Digital Electronics	2
ET-244	Digital Electronics (Lab)	2
	Total	**17**

Semester-IV		C.H.
Code	Course Title	
ET-254	AC Circuit Analysis	2
ET-254	AC Circuit Analysis(Lab)	2
ET-262	Electro-Magnetic Fields	2
ET-273	Electrical Power Transmission	2
ET-273	Electrical Power Transmission (Lab)	1
ET-283	Electrical Power Distribution & Utilization	2
ET-283	Electrical Power Distribution and Utilization (Lab)	1
ET-294	Power Electronics	2
ET-294	Power Electronics (Lab)	2
	Total	**16**

Semester-V		C.H.
Code	Course Title	
ET-313	Micro-Processor Theory and Interfacing	2
ET-313	Micro-Processor Theory & Interfacing (Lab)	1
ET-323	Switch Gear & Protective Devices	2
ET-323	Switch Gear & Protective Devices (Lab)	1
ET-334	Communication Technology	2
ET-334	Communication Technology (Lab)	2
ET-343	Control Technology	2
ET-343	Control Technology (Lab)	1
EM-312	Total Quality Management	2
ET-353	High Voltage Technology	2
ET-353	High Voltage Technology(Lab)	1
	Total	**18**

Semester-VI		C.H.
Code	Course Title	
ET-362	Power System Analysis	2
ET-374	Data & Computer Communication	2
ET-374	Data & Computer Communication (Lab)	2
ET-384	Industrial Drives and PLC	2
ET-384	Industrial Drives and PLC (Lab)	2
EM-323	Project Management	3
ET-393	Project	3(P)
	Total	**16**

Semester-VI Summer Project Work		C.H.
Code	Course Title	
ET- 3103	Project (Continue)	3(P)
	Total	**3**

Semester-VII		C.H.
Code	Course Title	
ET-4116	16 weeks Supervised Ind. Training	16(P)
	Total	**16**

Semester-VI Summer Project Work		C.H.
Code	Course Title	
ET- 4216	16 weeks Supervised Industrial Training	16(P)
	Total	**16**

BS Engineering Technology Mechanical-Scheme of Studies

Semester-I		C.H.
Code	Course Title	
MH-112	Islamic Studies/ Professional Ethics	2
MS-113	Applied Physics	2
MS-113	Applied Physics (Lab)	1
MS-123	Applied Mathematics	3
MS-133	Applied Chemistry	2
MS-133	Applied Chemistry (Lab)	1
MS-143	Introduction to Computer Fundamentals	1
MS-143	Introduction to Computer Fundamentals (Lab)	2
MT-113	Workshop Technology	1
MT-113	Workshop Technology (Lab)	2
	Total	**17**

Semester-II		C.H.
Code	Course Title	
MS-153	Mathematics-II	3
MH-122	Pakistan Studies	2
MT-124	Technical Drawing & CAD-I	2
MT-124	Technical Drawing & CAD-I (Lab)	2
MT-134	Applied Thermodynamics-I	2
MT-134	Applied Thermodynamics-I (Lab)	2
MT-144	Basic Electrical & Electronics	2
MT-144	Basic Electrical & Electronics (Lab)	2
	Total	**17**

Semester-III		C.H.
Code	Course Title	
MH-213	Communication Skills	3
MT-213	CAD-II	0
MT-213	CAD-II (lab)	3
MT-223	Industrial Materials	2
MT-223	Industrial Materials (Lab)	1
MT-233	Mechanics Of Material	2
MT-233	Mechanics Of Material (Lab)	1
MT-243	Applied Thermodynamics-II	2
MT-243	Applied Thermodynamics-II (Lab)	1
	Total	**15**

Semester-IV		C.H.
Code	Course Title	
MT-253	Machine Design	3
MT-264	Fluid Mechanics	2
MT-264	Fluid Mechanics (Lab)	2
MT-273	Engineering Statics	2
MT-273	Engineering Statics (Lab)	1
MS-213	Probability and Statistics	3
MS-213	Probability and Statistics (Lab)	0
MM-212	Total Quality Management	2
MH-223	Technical Report Writing	3
	Total	**18**

Semester-V		C.H.
Code	Course Title	
MT-313	Heat Transfer	2
MT-313	Heat Transfer (Lab)	1
MT-324	I.C Engines	2
MT-324	I.C Engines (Lab)	2
MT-333	Dynamics	2
MT-333	Dynamics (Lab)	1
MT-343	Manufacturing Process	2
ET-318	Manufacturing Process (Lab)	1
MM-313	Project Management	3
MH-312	Economics	2
	Total	**18**

Semester-VI		C.H.
Code	Course Title	
MT-353	Instrumentation & Control	2
MT-353	Instrumentation & Control (Lab)	1
MT-363	Mechanical Vibration	2
MT-363	Mechanical Vibration (Lab)	1
MT-373	Refrigeration & Air Conditioning	2
MT-373	Refrigeration & Air Conditioning (Lab)	1
MT-384	Material Handling & Safety	3
MT-384	Material Handling & Safety (Lab)	1
MT-393	Project	3
MT-3103	Project (Continue) (Lab)	3
	Total	**19**

Semester-VII		C.H.
Code	Course Title	
MT-4116	Supervised Industrial Training (Phase -1)	16
	Total	**16**

Semester-VIII		C.H.
Code	Course Title	
MT-4216	Supervised Industrial Training (Phase - II)	16
	Total	**16**

MS/M.Phil. Civil Engineering

MS In Civil Engineering (Specializations Offered):

University has got NOC from HEC to launch the program. Following are the various Specializations offered under the Faculty of Engineering Department of Civil Engineering:-

a. Structural Engineering
b. Geotechnical Engineering
c. Hydraulics & Irrigation Engineering
d. Construction Management
e. Project Management
f. Infrastructure Development

Entry/Admissions Requirements:

a) Bachelor of Science in Civil Engineering or equivalent from HEC/PEC recognized institution (16 Years of education) for all specializations offered in Civil Engineering.
b) 2.0 CGPA in Semester system or 2nd Division in Annual System from an HEC recognized University / Degree awarding institution and PEC recognized program. Graduates from other relevant engineering disciplines may also apply for this program and their case may be considered with assigning some deficiency courses as determined by the department at the time of admission for entry into this program.
c) Pass GAT pattern Entry Test conducted by the Lahore Leads University OR the NTS / GAT General with minimum 50% passing marks and accompanied by interview of the candidate.

Duration of the Program:

Minimum duration of the program is 1.5 to two Years. Maximum Period for completion of the program shall be Four years.

Scheme of Studies & Students Work Load:

A student is expected to undertake course work of 6-12 credit hours in each semester. The Department of Civil Engineering under Faculty of Engineering at Lahore Leads University offers the program, MS Civil Engineering with the following options/tracks according to HEC rules and regulations:

1. Non-Thesis Option Program
2. With Thesis Option Program

The students may choose any of the above option after completing their 2nd semester. The degree requirements for both options/tracks are given below:

Sr.No	Option	Requirement
1	Non-Thesis Option	30 Cr Hr. Course Work only
2	With Thesis Option	24 Cr Hr.* Course Work +6 Cr. Hr. Thesis

*: The term "Credit Hour (Cr. Hr.)" refers to a unit of academic credit during a semester. Each credit hour is related to a one “Contact hours per week”.

MS / MPhil Programs in Electrical Engineering

MS Electrical Engineering is an HEC approved program. Following are the various Specializations offered under the Faculty of Engineering Department of Electrical Engineering:-

a. Power
b. Control Systems
c. Electronics
d. Telecommunications

Introduction

The program is based on a core knowledge related to technical electives in the areas of power engineering, control systems, electronics systems and telecommunication engineering.

This program has been designed for working professionals who wish to enhance their technical skills for career advancement. Students will gain ability to analyze engineering problems, acquire understanding and appreciation of concepts related to quality, information management and the ability to synthesize knowledge. This program enhances the strength of the students in the area of their choice and makes them prepared better to compete in higher intellectual and academic pursuits such as PhD programs and in industry.

Pakistan is gravely lacking the highly educated professionals in the fields of engineering especially in the field of power sector, which is poorly developed in our country and highly skilled professionals are in great demand in this sector.

2. Scope regarding market and employment perspective of Program

A higher degree in Electrical Engineering will equip students to pursue diverse and challenging careers in the power and other related sectors. Career options include; many government jobs, Power sector jobs, industrials jobs, power and other sector equipment manufacturing, power house management, development of transmission, and distribution networks, developing the renewable energy resources etc.

Program Objectives

The MS Electrical Engineering program aims to produce post-graduate students with the disciplinary preparation that meets the following objectives:

1. To develop capability to formulate and solve engineering problems in the field of Electrical Engineering.
2. To introduce the recent advancement in their chosen field of study
3. To prepare postgraduate engineers to be competitive in both national and international market equipped with the necessary engineering and managerial skills.
4. To acquire a strong technical knowledge in their field so that they can lead and direct engineering and scientific industry teams in their chosen field of study.
5. To gain and generate new knowledge and expertise in their chosen field of study.
6. To Identify and address electrical engineering problems related to energy sources, generation, conversion, transmission, utilization, efficiency, protection, electronics systems, telecommunication system analysis and design and control systems.
7. Introduction of multi-disciplinary approaches to conceive, plan, design, manage and implement solutions to electrical engineering problems.

Program Structure

Minimum Duration: 1.5 to 2 Years
Semester Duration will be of 16-18 Weeks

Eligibility Criteria:

1. Bachelor of Science in Electrical Engineering or related disciplines such as: Electrical Power Engineering / Electronics Engineering /Communication /Telecommunication Engineering / Computer Engineering / equivalent from HEC/PEC recognized institution (16 Years of education) are eligible for admission.
2. Candidate must be registered with Pakistan Engineering Council (PEC) bearing valid Registration No.
3. For adopting any particular stream of specialization offered in electrical engineering, the candidate may be assigned any deficiency courses by the department at the time of admission.
4. A CGPA of 2.00 out of 4.00 in Semester system or 2nd Division in Annual System from an HEC recognized university / Degree awarding institution & qualifying engineering program is being recognized by PEC
5. Pass the GAT pattern Entry Test conducted by the Lahore Leads University OR NTS / GAT General with minimum 50% passing marks and accompanied by interview of the candidate.

MS Program is available both for Non Thesis & Thesis Option

The Department of Electrical Engineering Under Faculty of Engineering at UCEST, Lahore Leads University Lahore, offers the program, MS Electrical Engineering with the following options/tracks.

1. Non-Thesis Program
2. Program with Thesis Option

The students may choose any of the above option after completing their 2nd semester. The degree requirements for both options/tracks are given below:

Sr.No	Option	Requirement
1	Non-Thesis Program	30 CH Course Work only
2	Thesis Option	24 CH* Course Work +6 CH Thesis