Programs in Engineering

Dean's Message

Dr Mukhtar Ullah
Professor and Dean (Engineering)
PhD (CS), University of Rostock, Germany (2009)
PhD Approved Supervisor
MS (Controls), UMIST, UK (2002)
BS (EE), UET, Peshawar (1999)

National University of Computer and Emerging Sciences stands among the top tier prestigious universities in Pakistan. As the Dean of Engineering, I am proud to say that our electrical engineering program is offered at all five of our campuses, while the civil engineering program is exclusively available at our Lahore campus. Our engineering programs cater to students spanning Bachelor of Science (BS), Master of Science (MS), and Doctorate (PhD) degrees.Our engineering programs are renowned for their excellence, thanks to our highly qualified faculty members who are dedicated to providing students with the knowledge and skills they need to succeed in their careers. Our faculty members are experts in their fields and have extensive experience working in industry and academia. They bring this wealth of knowledge and experience to the classroom, providing students with a comprehensive education that is relevant to the needs of industry.

At National University of Computer and Emerging Sciences, we also place a strong emphasis on research. Our well-established labs and facilities provide our students with the opportunity to engage in cutting-edge research and contribute to the advancement of their respective fields. We have a strong culture of collaboration with universities and industries around the world, which allows our students and faculty members to exchange ideas, share knowledge and work on projects of mutual interest.

Our engineering programs have been accredited by the Pakistan Engineering Council (PEC) and have achieved Level-II accreditation under the Washington Accord. This recognition is a testament to the quality of our programs and the rigorous standards that we uphold. Our graduates are well-prepared to enter the workforce and make significant contributions to their respective fields. As a result, our alumni are placed around the globe in reputed organizations such as Amazon, Vodafone, STC, Huawie, Taradata, IBM, Emumba, MansAI, Teradata, PLC, Schlumberger, MOL, Volvo, Samsung, Nokia and many others.

We are committed to providing our students with a world-class education that will prepare them for successful careers and help them make a positive impact on society.

BS Admission Test, Eligibility and Selection Criteria

Degrees	**Computing** Bachelor of Science (Computer Engineering) Bachelor of Science (Civil Engineering) Bachelor of Science (Electrical Engineering)

Admission Test	Applicant must select **only one** out of the three admission test options	FAST-NUCES SAT NTS NAT-IE *(NTS test from specific universities will not be acceptable)*

Eligibility	1	SSC (Matric) or an equivalent examination	60% minimum marks
	2	HSSC (FSc) or an equivalent examination	60% minimum marks
	3	Courses studies at HSSC or an equivalent level	Pre-Engg (Chemistry, Mathematics, Physics) **OR** ICS (Computer Science, Mathematics, Physics)

Selection Criteria	1	Weightage of Admission Test marks	33%
	2	Weightage of HSSC/equivalent	50%[1]
	3	Weightage of SSC/equivalent	17%

Engineering Domain

Pre-medical students who have passed additional maths or they are waiting for results are eligible to apply for admission in engineering programs.

[1]Weightage of HSSC marks shall be calculated based on (whichever is applicable) at the time of compilation of merit list.

[1]Weightage of HSSC marks shall be calculated based on (whichever is applicable) at the time of compilation of merit list.

a. Marks obtained in HSSC part I and II OR
b. Marks obtained in HSSC part I, if result of HSSC part II not available OR
c. Marks/Percentage given in IBCC equivalence certificate of A-level OR
d. Marks/Percentage given in IBCC equivalence certificate of O-level

Merit cut-off marks to be determined by the University

NOTE: All documents/transcripts will be checked at the time of admission. Any incorrect/false information submitted by the applicant or any attempt to hide information will lead to disqualification of the candidate for admission.

Bachelor of Science (Computer Engineering)

Program Mission

The mission of the Department of Computer Engineering is:

To prepare competent Computer Engineering graduates conscious of professional ethical and social responsibilities for productive engineering careers in industry academia and research both locally and abroad.

Program Educational Objectives

The following Program Educational Objectives (PEOs) describe what the graduates of the computer engineering program are expected to achieve within a few years after graduation:

- PEO1 Creativity: Apply cutting-edge engineering practices to develop sustainable solutions for complex engineering problems, considering the constraints of limited resources.
- PEO2 Conduct: Uphold a responsible, professional, and ethical conduct with interpersonal skills.
- PEO3 Leadership: Emerge as team leaders in their domain of expertise and in activities that support service and economic development, nationally and throughout the world.
- PEO4 Versatility: Practice computer engineering in a broad range of industries in a multicultural environment and adapt to embrace new technologies.

Career Opportunities

This versatile degree opens careers in different areas of Electrical Engineering. You could pursue a career in telecom industry, electronics, and power sector or in embedded system design and software programming.

Award of Degree

For the award of Bachelor of Science (Computer Engineering) degree, a student must have

- Passed courses totaling at least 140 credit hours, including all those courses which have been specified as Core courses.
- Obtained a CGPA of at least 2.00

Tentative Study Plan- Bachelor of Science (Computer Engineering)

Code	Title	Cr.Hrs		Prereq
Semester-I				
CS1009	Applications of ICT	2	1	
MT1001	Applied Calculus	3	0	
NS1007	Applied Physics	2	1	
SS1005	English Language Skills	3	0	
SS1007	Islamic Studies/Ethics	2	0	
MG1008	Occupational Health and Safety	1	0	
SS1003	Pakistan Studies	2	0	
SS1019	Understanding of Sirat-un-Nabi	NC		
	Total	**15**	**2**	
Semester-II				
SS2043	Civics and Community Engagement	2	0	
MT1006	Differential Equations	3	0	MT1001
EL1006	Engineering Workshop	0	1	
SS1013	Ideology and Constitution of Pakistan	2	0	
EE1001	Linear Circuit Analysis	3	1	
CS1002	Programming Fundamentals	3	1	CS1009
SS1021	Understanding of Holy Quran – I	1	0	
	Total	**14**	**3**	
Semester-III				
CS1004	Object Oriented Programming	3	1	CS1002
EE1004	Electronic Devices and Circuits	3	1	EE1001
CS1005	Discrete Structures	3	0	MT1006
MT1004	Linear Algebra	3	0	MT1001
MT2003	Complex Variables and Transforms	3	0	MT1006
SS1022	Understanding of Holy Quran – II	1	0	
	Total	**16**	**2**	
Semester-IV				
CS2002	Data Structures and Algorithms	3	1	CS1002
EE2008	Signals and Systems	3	1	MT2003
EE1005	Digital Logic Design	3	1	
MT2005	Probability and Statistics	3	0	
EExxxx	Multi-Disciplinary Engineering Elective-I	3	0	
	Total	**15**	**3**	

Tentative Study Plan- Bachelor of Science (Computer Engineering)

Code	Title	Cr.Hrs		Prereq
	Semester-V			
EE3002	Microprocessor Interfacing and Programming	3	1	CS1004+ EE1005
EE3031	Digital Signal Processing	3	1	EE2008
EE2007	Data Communication and Networks	3	1	
CS3009	Software Engineering	3	0	
CS2008	Numerical Computing	3	0	
	Total	**15**	**3**	
	Semester-VI			
EE2003	Computer Organization and Architecture	3	1	EE1002
CS2005	Database Systems	3	1	CS2001
CS2006	Operating Systems	3	1	CS2002
MG2002	Engineering Economics	2	0	
EExxxx	Multi-Disciplinary Engineering Elective-II	3	0	
	Total	**14**	**3**	
	Semester-VII			
EE4091	Final Year Project - I	3	0	
EE3033	Digital Design	3	1	
SS2001	Technical Communication Skills	2	0	SS1005
MG3036	Engineering Management	2	0	
EExxxx	Computer Engineering Elective-I	3	1	
EExxxx	Computer Engineering Elective-II	3	1	
	Total	**16**	**3**	
	Semester-VIII			
EE4092	Final Year Project - II	3	0	EE4091
SS2013	Entrepreneurship	2	0	
SS2007	Technical and Business Writing	3	0	SS1005
EExxxx	Computer Engineering Elective-III	3	1	
EExxxx	Computer Engineering Elective-IV	3	1	
	Total	**14**	**2**	

Eligibility for FYP-I: 97 CH

Domain	Cr. Hrs
Computing	18
Computer Engineering	63
Other Engineering	16
Management Sciences	7
Natural Sciences	18
Humanities	18
Total	**140**

Computer Engineering Depth Electives (CEDE)

Cloud and Distributed Computing
Introduction to IOT
Embedded System Design
Artificial intelligence and Machine Learning
Image Processing and Analysis
Network Security and Blockchain
System Programming
High Performance Computing
Control Engineering
Algorithm Design and Analysis
Hardware design for DSP and ML

Multi-Disciplinary Engineering Electives (MDEE)

Human Computer Interaction (UI/UX)
Block Chain Technologies and Applications
Neural Networks and Fuzzy Logic
Robotics and Automation
Mobile Application/Game Development
Virtual Reality
Software Quality Assurance
Instrumentation and Controls
VLSI System Design
Data warehousing and Big Data
GIS and Remote Sensing

Bachelor of Science (Civil Engineering)

Program Vision

To achieve national and international recognition through innovation in Civil Engineering education, research and community services.

Program Mission

To develop highly competent graduates with sound engineering knowledge, social responsibility and lifelong learning skills enabling them to have successful careers in Civil Engineering professions. We achieve this mission through both undergraduate and graduate programs by:

- Providing vibrant teaching and learning environment to deliver high quality engineering education.
- Maintaining state-of-the-art curriculum that emphasizes practical applications and provides opportunities for hands-on experience.
- Developing attitude for lifelong learning and instilling ethical and social values in our graduates that helps them acquire professional leadership.
- Identifying contemporary issues in Civil Engineering profession and developing innovative solutions through research.

Program Educational Objectives (PEOs)

The objectives of the Civil Engineering program are to produce graduates who will:

- Successfully engage in contemporary Civil Engineering practice to solve real-world problems.
- Pursue professional growth through continuous learning and experience.
- Maintain high ethical standards in the conduct of professional practice.
- Attain increasing level of responsibility with interpersonal and communication skills.

Career Opportunities

A Civil Engineering degree will prepare you for work in the construction industry as well as in relevant business, management, and finance sectors. With a solid grasp of science, Mathematics, and Engineering knowledge, you will be able to design, create and build sustainable Civil infrastructures to serve society.

Award of Degree

For the award of Bachelor of Science (Civil Engineering) degree, a student must have

- Earned at least 140 credits through respective core and elective courses offered in study plan, AND
- Obtained a CGPA of at least 2.00

Tentative Study Plan of Bachelor of Science (Civil Engineering)

Code	Title	Cr.Hrs		Prereq
Semester-I				
CV1001	Civil Engineering Materials	2	1	
CV1002	Engineering Drawing	1	2	
	Applied Physics and Electro Mechanical Fundamentals	2	1	
	Quantitative Reasoning	3	0	
	Functional English	2	0	
	Ideology and Constitution of Pakistan	2	0	
	Application of ICT	0	1	
SS1021	Understanding of Holy Quran – I	1	0	
	Total	**13**	**5**	
Semester-II				
CV1003	Engineering Surveying	2	1	
	Advanced Calculus	3	0	
	Engineering Mechanics	3	1	
	Geology for Engineers	2	0	
SS1007	Islamic Studies/ Ethics	2	0	
	Expository Writing	2	0	
	Pakistan Studies	2	0	
SS1022	Understanding of Holy Quran – II	1	0	
SS1019	Understanding of Sirat-un-Nabi	NC		
	Total	**17**	**2**	
Semester-III				
CV2001	Advanced Engineering Surveying	2	1	CV1003
	Fluid Mechanics	2	1	
CV2005	Mechanics of Solids-I	2	1	NS1004
	Occupational Health and Safety	1	0	
	Entrepreneurship	2	0	
CS1003	Computer Programming	1	2	
	Applied Mathematics	3	0	Advanced Calculus
	Total	**13**	**5**	

Tentative Study Plan of Bachelor of Science (Civil Engineering)

Code	Title	Cr.Hrs		Prereq
Semester-IV				
CV2006	Structural Analysis-I	3	0	NS1004
CV2009	Civil Engineering Graphics and Construction	1	2	CV1002
CV2010	Quantity and Cost Estimation	1	1	
MT2007	Numerical Analysis	3	0	
SS2009	Technical Report Writing and Presentation	0	1	
	Social Science Elective**	2	0	
CV2003	Soil Mechanics	3	1	Geology for Engineers
	Total	**13**	**5**	
Semester-V				
CV3001	Advanced Fluid Mechanics	3	1	CV2002
CV4002	Architecture and Town Planning	2	0	
CV3002	Reinforced Concrete Design-I	3	1	CV2005
	Introduction to Machine Learning	-	1	Application of ICT
	Geo Informatics – Lab	-	1	
	Highway and Traffic Engineering	2	1	CV2001
	Geotechnical Engineering	2	1	CV2003
	Total	**12**	**6**	
Semester-VI				
CV4005	Steel Structures	3	0	CV2005
CV3008	Structural Analysis-II	3	0	CV2006
CV3006	Environmental Engg. – I	2	0	CV2002
CV3007	Mechanics of Solids-II	2	1	CV2001
	Foundation Engineering	2	0	CV2003
	Hydrology and Water Management	2	1	CV2002
	Civics and Community Engagement	2	0	
	Community Service	-	0	
	Internship (6-8 weeks) mandatory and qualifying	-	0	
	Total	**16**	**2**	
Semester-VII				
CV4003	Reinforced Concrete Design-II	3	1	CV3002
CV4001	Environmental Engg – II	2	1	CV3006
CV4008	Fundamentals of Dynamics and its Applications	2	-	CV2006
	Arts and Humanities Elective - I*	1	-	
CV4009	Hydraulic Engineering	2	1	CV2002
MG3007	Construction Engineering and Management	1	1	
CV4091	Final Year Design Project – I	0	3	
	Total	**11**	**7**	
Semester-VIII				
CV4010	Design of Structures	1	1	CV4005, CV3002
CV4011	Irrigation and Drainage Engineering	2	1	CV3009
	Arts and Humanities Elective - II*	1	-	
	Building Information Modeling Lab	-	1	
CV4004	Transportation Planning and Engineering	3	-	CV2001
CV4092	Final Year Design Project – II	-	3	CV4091
	Total	**7**	**6**	

***Arts and Humanities Electives**

German Language
Elementary Chinese Language
Engineering Ethics
Philosophy

****Social Science Electives**

Sociology
Engineering Economics
Engineering Law

Eligibility for FYP-I: 100 CH

Domain	Cr. Hrs
Engineering	96
Natural Science	15
Humanities, Management Sciences	19
Computer and information sciences	10
	Total 140

Bachelor of Science (Electrical Engineering)

Program Mission

The mission of School of Electrical Engineering is to

- Develop nurturing environment for delivering quality Engineering Education through discovery and innovation.
- Show commitment and dedication to teaching by developing state of the art curriculum, ground in scientific, mathematical and technical knowledge that emphasizes practical application and provides opportunities for hands-on experience.
- Inculcate lifelong learning and instill ethical and social values in our graduates that helps them acquire professional leadership.
- Act as centre of excellence to identify the problems of national industry and to develop innovative solutions.

Program Educational Objectives

- PEO-1 Creativity: Apply cutting-edge engineering practices to develop sustainable solutions for complex engineering problems under limited resources
- PEO-2 Conduct: Uphold responsible, professional, and ethical conduct with interpersonal skills
- PEO-3 Leadership: Emerge as team leaders in their domain of expertise and in activities that support service and economic development, nationally and throughout the world
- PEO-4 Versatility: Practice electrical engineering in a broad range of industries in a multicultural environment and adapt to embrace new technologies

Career Opportunities

This versatile degree opens careers in different areas of Electrical Engineering. You could pursue a career in telecom industry, electronics, and power sector or in embedded system design and software programming.

Award of Degree

For the award of Bachelor of Science (Electrical Engineering) degree, a student must have

- Passed courses totaling at least 140 credit hours, including all those courses which have been specified as Core courses.
- Obtained a CGPA of at least 2.00

Tentative Study Plan-Bachelor of Science (Electrical Engineering)

Code	Title	Cr.Hrs		Prereq
Semester-I				
CS1009	Applications of ICT	2	1	
MT1001	Applied Calculus	3	0	
NS1007	Applied Physics	2	1	
ME1001	Engineering Drawing	0	1	
SS1005	English Language Skills	3	0	
SS1007	Islamic Studies/Ethics	2	0	
MG1008	Occupational Health and Safety	1	0	
SS1003	Pakistan Studies	2	0	
SS1019	Understanding of Sirat-un-Nabi	NC		
	Total	**15**	**3**	
Semester-II				
SS2043	Civics and Community Engagement	2	0	
MT1006	Differential Equations	3	0	MT1001
EL1006	Engineering Workshop	0	1	
SS1013	Ideology and Constitution of Pakistan	2	0	
MT1004	Linear Algebra	3	0	MT1001
EE1001	Linear Circuit Analysis	3	1	
CS1011	Programming for Engineers	3	1	CS1009
	Total	**16**	**3**	
Semester-III				
MT2003	Complex Variables and Transforms	3	0	MT1006
EE2004	Electrical Network Analysis	3	1	EE1001
EE1004	Electronic Devices and Circuits	3	1	EE1001
MT2008	Multivariable Calculus	3	0	MT1006
CS2021	Object Oriented Data Structures	3	1	CS1011
SS1021	Understanding of Holy Quran - I	1	0	
	Total	**16**	**3**	

Tentative Study Plan-Bachelor of Science (Electrical Engineering)

Code	Title	Cr.Hrs		Prereq
Semester-IV				
EE2008	Signals and Systems	3	1	MT2003
EE1005	Digital Logic Design	3	1	
MT2005	Probability and Statistics	3	0	
EE2010	Electro-Mechanical Systems	3	1	NS1002, EE2004
SS1022	Understanding of Quran – II	1	0	
EExxxx	Multi-Disciplinary Engineering Elective	3	0	
	Total	**16**	**3**	
Semester-V				
EE3003	Analogue and Digital Communication	3	1	EE2011, EE2008
EE3005	Electromagnetic Theory	3	0	MT2008
EE3002	Microprocessor Interfacing and Programming	3	1	CS1004, EE1005
SS2001	Technical Communication Skills	2	0	SS1005
EExxxx	Depth Core I	3	1	
	Total	**14**	**3**	
Semester-VI				
MG2002	Engineering Economics	2	0	
EE3004	Feedback Control Systems	3	1	EE2008
EE2038	Power Distribution and Utilization	3	1	
EExxxx	Depth Core II	3	1	
EExxxx	Depth Elective III	3	0	
	Total	**14**	**3**	
Semester-VII				
EE4091	Final Year Project – I	3	0	
SS2007	Technical and Business Writing	3	0	SS1005
MG3036	Engineering Management	2	0	
EExxxx	Depth Elective IV	3	1	
EExxxx	Flexible Elective I	3	1	
	Total	**14**	**2**	
Semester-VIII				
EE4092	Final Year Project – II	3	0	EE4091
SS2013	Entrepreneurship	2	0	
EExxxx	Depth Elective V	3	1	
EExxxx	Flexible Elective II	3	0	
EExxxx	Flexible Elective III	3	0	
	Total	**14**	**1**	

Eligibility for FYP-I: 101 CH

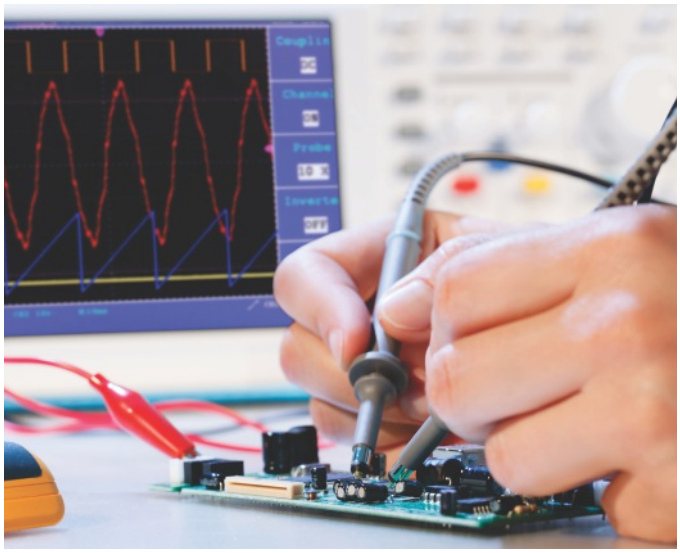
Domain	Cr. Hrs
Computing	11
Electrical Engineering	82
Other Engineering	5
Management Sciences	6
Natural Sciences	18
Humanities	18
Total	**140**

Specialization Streams Offered

Bachelor of Science (Electrical Engineering)

	Computer Engineering		Electronics	
Breadth Core-I	EE 3017 Data Communication and Networks	3+1	EE 2024 Electronic Circuit Design	3+1
Breadth Core-II	CS 2020 Operating Systems	3+1	EE 3024 Power Electronics	3+1
Depth Electives	CS 2013 Fundamentals of Database	3+1	EE 2020 Instrumentation and Measurement	3+1
	EE 3009 VLSI Design	3+1	EE 3031 Digital Signal Processing	3+1
	EE 3033 Digital Design	3+1	EE 3009 VLSI Design	3+1
	IO 3031 Introduction to IOT	3+0	EE 3031 Introduction to IOT	3+0
	EE 3006 Embedded System	3+0	EE 4026 Industrial Process Control	3+1
	EE 2012 Computer Organization and Architecture	3+1	EE 4028 Digital Control System	3+0
	EE 4024 Introduction to Robotics	3+1	EE 4090 Industrial Automation	3+1
	EE 4049 Network Security and Blockchain	3+1		
	EE 4037 Applied Machine Learning	3+0		

	Electric Vehicles	
Breadth Core-I	EE 4030 Power Distribution and Utilization	3+1
Breadth Core-II	EE 4031 Power System Analysis	3+1
Depth Electives	EE 3024 Power Electronics	3+1
	EE 3027 Introduction to IOT	3+0
	EE 4033 Power Generation	3+0
	EE 4034 Power System Protection	3+1
	EE 4035 Renewable Energy Systems	3+1
	EE 4089 Electric Power Transmission	3+1
	EE 4036 Power System Operation and Control	3+1
	EE XXXX Advanced Electrical Machines	3+1



MS Admission Test, Eligibility and Selection Criteria

Degree		**Engineering** Master of Science (Civil Engineering)
Admission Test	Applicant must select **only one** out of the three admission test options	FAST-NUCES GRE General NTS GAT-A General *(NTS test from specific universities will not be acceptable)*
Eligibility	1	Bachelor of Science (Civil Engineering) or equivalent degree from a recognized University after 16 years of education Minimum 60% marks or CGPA of at least 2.00 on a scale of 4.00
Selection Criteria	1	Weightage of Admission Test marks 50%
	2	Weightage of past academic record (Bachelor) 50%

Degree		Master of Science (Electrical Engineering)
Admission Test	Applicant must select **only one** out of the three admission test options	FAST-NUCES GRE General NTS GAT-A General *(NTS test from specific universities will not be acceptable)*
Eligibility	1	Bachelor of Science (Electrical, Telecommunications, or Computer Engineering, etc.) or equivalent degree from a recognized University after 16 years of education Minimum 60% marks or CGPA of at least 2.00 on a scale of 4.00
Selection Criteria	1	Weightage of Admission Test marks 50%
	2	Weightage of past academic record (Bachelor) 50%

NOTE: All documents/transcripts will be checked at the time of admission. Any incorrect/false information submitted by the applicant or any attempt to hide information will lead to disqualification of the candidate for admission.

Master of Science (Civil Engineering)

Program Mission

To develop highly competent graduates with advanced engineering knowledge and research skills required for professional excellence and socio-economic development.

Program Objectives (PEOs)

- To enable the graduates to successfully engage in multidisciplinary civil engineering practice to contribute to socio-economic development.
- To develop the ability to lead a team as well as being a successful team member for life-long learning and carrier development.
- To enable graduates to contribute to civil engineering through research and innovations

Areas of Specialization

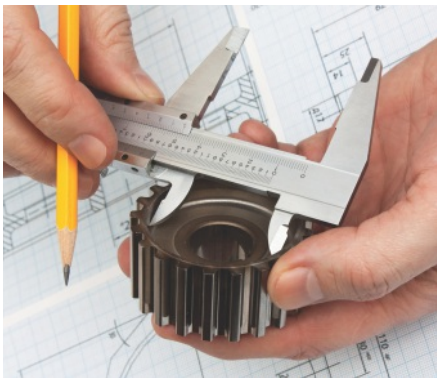
Master of Science (Civil Engineering) Program offers courses and research work in the following areas of specializations.

- Structural Engineering
- Hydraulics and Water Recourses Engineering
- Geotechnical Engineering
- Transportation Engineering
- Construction Management

Award of Degree

For the award of Master of Science (Civil Engineering) degree, a student shall have

- Completed 30 credit hours as per study plan AND
- Obtained a CGPA of at least 2.50



Tentative Study Plan-Master of Science (Civil Engineering)

MS Civil Engineering	Research-Based		Coursework/Project-Based**	
	Courses	Cr. Hrs.	Courses	Cr. Hrs.
Core Courses	3	9	4	12
Elective (Specialization) Courses	4	12	5	15
Elective Course	1	3	1	3
CV5091 MS Thesis-I*	1	3	NA	-
CV5092 MS Thesis- II	1	3	NA	-
Total Cr. Hrs.:	-	30	-	30

* MS Thesis – I registration requires completion of 15 credit hours (including Research Methodology) **AND** a minimum CGPA of 2.50.

** Subjected to the approval of Departmental Graduate Studies Committee (DGSC).

Core Courses

CV 5000	Advanced Structural Analysis	CV 5094	Advanced Soil Machine
CV 5001	Probability and Statistical Methods	CV 5099	Optimization Techniques
CV 5003	Foundation Engineering	CV 5012	Forensic Engineering
CV 5011	Finite Element Analysis	CV 5014	Principles and techniques of Ground Improvement
CV 5014	Transportation Planning	CV 5016	Geotechnical Engineering of Embankment Dams
CV 5015	Hydraulic Structures	CV 5105	Innovative Civil Engineering Material
CV 5017	Pavement Analysis and Design	CV 5109	Earthquake Engineering
CV 5021	Advanced Open Channel Hydraulics	CV 6008	Advanced Engineering Mathematics
CV 5022	Trans- Boundary Water Issues and Water Diplomacy Framework	CV xxx	Repair and Rehabilitation of Structures
CV5032	Research Methodology*		

*Research Methodology is mandatory for MS with thesis.

Master of Science (Electrical Engineering)

Program Mission

The purpose of the Master of Science Program in Electrical Engineering is to attain theoretical and practical depth in one of the areas of interest. The Master of Science (EE) program is structured in such a way as to enhance the student's critical thinking and intuitive abilities using a combination of highly specialized courses and expert supervision. The program aims to produce graduates who will have the abilities and skills to be employed as practicing Engineers in fields such as design, research development, testing, and manufacturing, as well as assuming positions of leadership and responsibility within organizations.

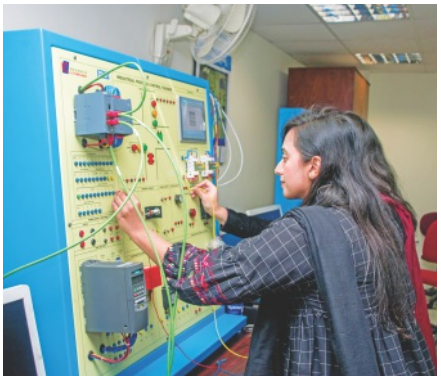
Program Educational Objectives (PEOs)

- Provide students with advanced learning and application in a discipline or sub-discipline of Electrical Engineering. (Application to be added)
- Teaching tools and techniques required for advanced learning, research and application in any discipline or sub-discipline of Electrical Engineering.
- Enhance skills such areas as problem – Solving, mathematical modelling, writing and oral presentation, leadership interrelation of business with technology and ethics applied to Electrical Engineering.

Award of Degree

For the award of Master of Science (Electrical Engineering) degree, a student must have

- Passed courses totaling at least 30 credit hours, including Three core courses
- Obtained a CGPA of at least 2.50



Tentative Study Plan-Master of Science (Electrical Engineering)

MS Civil Engineering	Research-Based		Coursework/Project-Based**	
	Courses	Cr. Hrs.	Courses	Cr. Hrs.
Core Courses	3	9	4	12
Elective (Specialization) Courses	4	12	5	15
Elective Course	1	3	1	3
CV5091 MS Thesis-I*	1	3	NA	-
CV5092 MS Thesis- II	1	3	NA	-
Total Cr. Hrs.:	-	30	-	30

* MS Thesis – I registration requires completion of 15 credit hours (including Research Methodology) **AND** a minimum CGPA of 2.50.

** Subjected to the approval of Departmental Graduate Studies Committee (DGSC).

Core/Elective Courses

Core Courses		Elective Courses	
EE 5035	Engineering Optimization	AI 5003	Advanced Machine Learning
EE 5049	Computational Statistics	DS 5006	Deep Learning
EE 5043	Adv. Embedded Systems and Networks	CS 5042	Advanced Network Security
IO 5031	Internet of Things	CS 5024	Advanced Computer Networks
		EE5041	Advanced Control Systems
		XX-xxxx	Any other elective from CS / EE
		EE5011	Research Methodology*

*Research Methodology is mandatory for MS with thesis.