Programs in Engineering

Dean's Message

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. Starting from Fall 2024, we are also launching Bachelor of Science (Computer Engineering) which has been approved by the Pakistan Engineering Council (PEC). 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 the 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 cuttingedge 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.

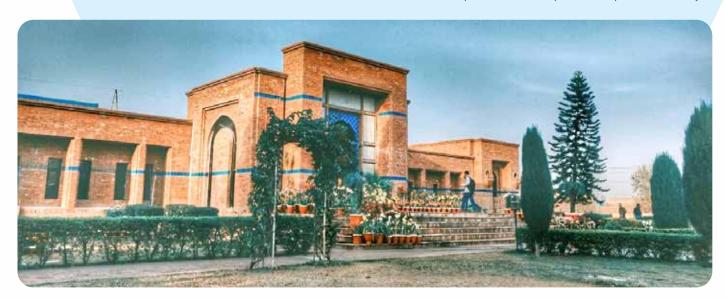


Dr Mukhtar Ullah

Professor, HOD (CE) and Dean (Engineering) PhD Approved Supervisor PhD (CS), University of Rostock, Germany (2009) MS (Controls), UMIST, UK (2002) BSs (EE), UET, Peshawar (1999)

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, Schlumberger, MOL, Volvo, Samsung, Nokia and many others.

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



BS Admission Test, Eligibility and Selection Criteria

			Computing
Degrees	2		Bachelor of Science (Civil Engineering) Bachelor of Science (Electrical Engineering) Bachelor of Science (Computer Engineering)
Admission Test Applicant must select only or admission test options		plicant must select only one out of the three nission test options	FAST-NUCES SAT (minimum score of 1200 or more) NTS NAT-IE (minimum percentile score of 90%
Eligibility	1	SSC (Matric) or an equivalent examination	60% minimum marks
	2	HSSC (FSc) or an equivalent examination	50% minimum marks
	3	Courses studies at HSSC or an equivalent level	Pre-Engg (Chemistry, Mathematics, Physics) OR ICS (Computer Science, Mathematics, Physics)
	1	Weightage of Admission Test marks	33%
Selection Criteria	2	Weightage of HSSC/equivalent	50% ¹
Cinceria	3	Weightage of SSC/equivalent	17%

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

- a. HSSC part I and II OR
- b. HSSC part I if HSSC part II not available OR
- c. IBCC equivalence of A-level OR
- d. IBCC equivalence 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.



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 Educat-ional 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 135 credit hours, including all those courses which have been specified as Core courses.
- Obtained a CGPA of at least 2.00



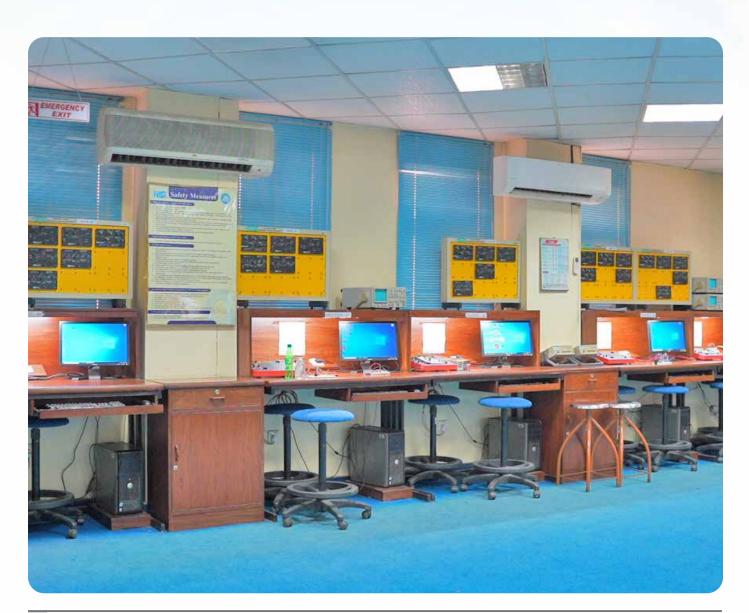
Tentative Study Plan- Bachelor of Science (Computer Engineering)

Code	Title	Cr.	Jre	Brorog	
Code		CI.I	115	Prereq	
001000	Semester-I	2	1	1	
CS1009	Applications of ICT	2	1		
MT1001	Applied Calculus	3	0		
NS1007	Applied Physics	2	1		
ME1001	Engineering Drawing	0	1		
SS1007	Islamic Studies/Ethics	2	0		
SS1005	English Language Skills	3	0		
MG1008	Occupational Health and Safety	1	0		
1000	Total	13	3		
	Semester-II	13	3		
EE1001	Linear Circuit Analysis	2	1	1	
	,	3			
CS1002	Programming Fundamentals	3	1		
EL1006	Engineering Workshop	0	1		
SS1013	Ideology and Constitution of Pakistan	2	0		
MT1009	Linear Algebra and Differential	4	0	MT1001	
	Equation				
SS3002	Civics and Community Engagement	2	0		
	Total	14	3		
	Semester-III		1.2		
00100 1		2	-	001000	
CS1004	Object Oriented Programming	3	1	CS1002	
EE1004	Electronic Devices and Circuits	3	1	EE1001	
EE2004	Electrical Network Analysis	3	1	EE1001	
CS1005	Discrete Structures	3	0	MT1006	
MT2003	Complex Variables and Transforms	3	0	MT1006	
	Total	15	3		
	Semester-IV				
000000		2		001000	
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		
1112003			-		
	Multi-Disciplinary Engineering	3	10	1	
	Multi-Disciplinary Engineering Elective-I	3	0		
		3 15	0 3		
	Elective-I Total				
xxxxxx	Elective-I Total Semester-V	15	3	EE1005	
xxxxxx	Elective-I Total Semester-V Computer Organization & Assembly			EE1005	
EE2003	Elective-I Total Semester-V Computer Organization & Assembly Language	15 3	3		
EE2003	Elective-I Total Total Computer Organization & Assembly Language Digital Signal Processing	15 3 3	3 1 0	EE1005 EE2008	
EE2003 EE3031 EE2007	Elective-I Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks	15 3 3 3	3 3 1 0 1		
EE2003 EE3031 EE2007	Elective-I Total Total Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering	15 3 3	3 1 0		
EE2003 EE3031 EE2007 CS3009	Elective-I Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks	15 3 3 3	3 3 1 0 1		
EE2003 EE3031 EE2007 CS3009	Elective-I Total Total Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering	15 3 3 3 3	3 3 1 0 1 0		
EE2003 EE2003 EE2007 CS3009 CS2008	Elective-I Total Total Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing	15 3 3 3 3 3 3	3 3 0 1 0 0 0 0		
EE2003 EE3031 EE2007 CS3009 CS2008	Elective-I Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI	15 3 3 3 3 3 3 15	3 3 1 0 1 0 0 2	EE2008	
EE2003 EE3031 EE2007 CS3009	Elective-I Total Total Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and	15 3 3 3 3 3 3	3 3 0 1 0 0 0 0	EE2008	
EE2003 EE3031 EE2007 CS3009 CS2008	Elective-I Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI	15 3 3 3 3 3 3 15	3 3 1 0 1 0 0 2	EE2008	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming	15 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	3 3 1 0 1 0 0 2 1	EE2008 CS1004+ EE1005	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 CS2005	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems	15 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	3 3 1 0 1 0 0 2 2	EE2008 CS1004+ EE1005 CS2001	
xxxxxx EE2003 EE3031 EE2007 CS3009 CS2008 EE3002 CS2005 CS2005 CS2006	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems	15 3 3 3 3 3 3 15 3 3 3 3 3 3 3 3	3 3 1 0 0 2 2 1 1 1	EE2008	
EE2003 EE3031 EE2007 CS3009 CS2008	Elective-I Total Total Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics	15 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	3 3 1 0 1 0 0 2 2	EE2008 CS1004+ EE1005 CS2001	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 CS2005 CS2005 CS2006 MG2002	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems	15 3 3 3 3 3 3 15 3 3 3 3 3 3 3 3	3 3 1 0 0 2 2 1 1 1	EE2008 CS1004+ EE1005 CS2001	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 CS2005 CS2005 CS2006 MG2002	Elective-I Total Total Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics	15 3 3 3 3 3 3 15 3 3 3 3 3 3 2	3 3 1 0 1 0 2 2 1 1 1 1 0 0 2	EE2008 CS1004+ EE1005 CS2001	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 CS2005 CS2005 CS2006 MG2002	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-	15 3 3 3 3 3 3 15 3 3 3 3 3 3 2	3 3 1 0 1 0 2 2 1 1 1 1 0 0 2	EE2008 CS1004+ EE1005 CS2001	
xxxxxx EE2003 EE3031 EE2007 CS3009 CS2008 EE3002 CS2005 CS2005 CS2006	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II	15 3 3 3 3 3 3 3 3 3 3 3 3 3 3 2 3 3	3 3 1 0 2 2 1 1 1 1 1 0 0 0 2	EE2008 CS1004+ EE1005 CS2001	
XXXXXX EE2003 EE2007 CS3009 CS2008 EE3002 CS2005 CS2005 CS2006 MG2002 XXXXXX	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Total Semester-VII	15 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 2 3 3 2 3 3 14	3 3 1 0 1 0 2 2 1 1 1 1 0 0 2 3 3	EE2008 CS1004+ EE1005 CS2001	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 CS2005 CS2005 CS2006 MG2002 xxxxxx EE4091	Elective-I Total Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Total Semester-VII Final Year Project - I	15 3 3 3 3 3 3 3 3 3 3 3 3 3 3 2 3 3 2 3 3 14 14	3 3 1 0 1 2 2 1 1 1 1 0 0 2 3 3 3	EE2008 CS1004+ EE1005 CS2001	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 EE3002 CS2005 CS2006 MG2002 xxxxxx EE4091 EE3033	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Final Year Project - I Digital Design	15 3 3 3 3 3 3 3 3 3 3 3 3 2 2 3 3 14 14 3 3 3	3 3 1 0 2 2 1 1 1 0 2 2 1 1 1 0 0 2 3 3 3	EE2008 CS1004+ EE1005 CS2001 CS2002	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 EE3002 CS2005 CS2006 MG2002 xxxxxx EE4091 EE3033 SS2001	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Final Year Project - I Digital Design Technical Communication Skills	15 3 3 3 3 3 3 3 3 3 3 3 3 2 2 3 14 14 3 3 2 2	3 3 1 0 2 2 1 1 1 0 2 2 3 3 3 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 2 1 1 0 0 2 1 1 0 0 2 1 1 0 0 1 1 0 0 2 1 1 0 0 1 1 0 0 0 2 1 1 0 0 0 1 1 0 0 0 2 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 0 1 1 0	EE2008 CS1004+ EE1005 CS2001	
xxxxxx EE2003 EE2007 CS2008 CS2008 EE3002 CS2005 CS2006 MG2002 xxxxxx EE4091 EE3033 SS2001 MG3036	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Total Semester-VII Final Year Project - I Digital Design Technical Communication Skills Engineering Management	15 3 3 3 3 3 3 3 3 3 3 3 3 2 2 3 3 14 14 3 3 2 2 2	3 3 1 0 2 2 1 1 1 1 1 0 0 0 3 3 0 1 1 0 0 0	EE2008 CS1004+ EE1005 CS2001 CS2002	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 EE3002 CS2005 CS2006 MG2002 xxxxxx EE4091 EE3033 SS2001 MG3036	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Final Year Project - I Digital Design Technical Communication Skills	15 3 3 3 3 3 3 3 3 3 3 3 3 2 2 3 14 14 3 3 2 2	3 3 1 0 2 2 1 1 1 0 2 2 3 3 3 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 2 1 1 0 0 2 1 1 0 0 2 1 1 0 0 1 1 0 0 2 1 1 0 0 1 1 0 0 0 2 1 1 0 0 0 1 1 0 0 0 2 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 0 1 1 0	EE2008 CS1004+ EE1005 CS2001 CS2002	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 EE3002 CS2005 CS2006 MG2002 xxxxxx EE4091 EE4091 EE3033 SS2001	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Total Semester-VII Final Year Project - I Digital Design Technical Communication Skills Engineering Management	15 3 3 3 3 3 3 3 3 3 3 3 3 2 2 3 3 14 14 3 3 2 2 2	3 3 1 0 2 2 1 1 1 1 1 0 0 0 3 3 0 1 1 0 0 0	EE2008 CS1004+ EE1005 CS2001 CS2002	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 EE3002 CS2005 CS2006 MG2002 xxxxxx EE4091 EE3033 SS2001 MG3036 CS4001	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Total Semester-VII Final Year Project - I Digital Design Technical Communication Skills Engineering Management Professional Issues in IT	15 3 3 3 3 3 3 3 3 3 3 3 3 3 3 2 2 3 3 14 14 3 3 2 2 2 3 3	3 3 0 1 0 2 2 7 1 1 1 1 1 0 0 0 3 3 0 1 0 0 0 1 0 0 0 0	EE2008 CS1004+ EE1005 CS2001 CS2002	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 EE3002 CS2005 CS2006 MG2002 xxxxxx EE4091 EE3033 SS2001 MG3036 CS4001	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Final Year Project - I Digital Design Technical Communication Skills Engineering Management Professional Issues in IT Computer Engineering Elective-I	15 3 3 3 3 3 3 3 3 3 3 3 3 2 2 3 3 14 3 3 2 2 2 3 3 3 2 2 2 3 3 3	3 0 1 0 2 2 1 1 1 0 0 2 1 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	EE2008 CS1004+ EE1005 CS2001 CS2002	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 EE3002 CS2005 CS2006 MG2002 xxxxxx EE4091 EE3033 SS2001 MG3036 CS4001 EExxxx	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Final Year Project - I Digital Design Technical Communication Skills Engineering Management Professional Issues in IT Computer Engineering Elective-I Total Semester-VII	15 3 3 3 3 3 3 3 3 3 3 3 3 3	3 0 1 0 2 1 1 1 1 1 1 1 1 0 0 2 1 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	EE2008 CS1004+ EE1005 CS2001 CS2002 CS2002 SS1005 SS1005	
xxxxxx EE2003 EE2007 CS3009 CS2008 EE3002 EE3002 CS2005 CS2006 MG2002 xxxxxx EE4091 EE3033 SS2001 MG3036 CS4001 EExxxx	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Final Year Project - I Digital Design Technical Communication Skills Engineering Management Professional Issues in IT Computer Engineering Elective-I Final Year Project - II Total Semester-VII Final Year Project - II Final Year Project - II	15 3 3 3 3 3 3 3 3 3 3 3 3 3 2 2 3 3 14 14 3 3 2 2 3 3 3 2 2 3 3 15	3 0 1 0 2 1 1 1 1 1 1 1 0 0 2 1 1 0 0 3 3 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	EE2008 CS1004+ EE1005 CS2001 CS2002	
xxxxxx EE2003 EE2007 CS2008 CS2008 EE3002 EE3002 CS2005 CS2005 CS2006 MG2002 xxxxxx EE4091 EE3033 SS2001 MG3036 CS4001 EExxxx EE4092 SS2013	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Final Year Project - I Digital Design Technical Communication Skills Engineering Management Professional Issues in IT Computer Engineering Elective-I Computer Engineering Elective-I Final Year Project - II Entrepreneurship	15 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 2 2 3 3 14 4 3 3 2 2 3 3 3 16 3 3 2 2	3 0 1 0 2 1 1 1 1 1 1 1 1 0 0 3 3 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	EE2008 CS1004+ EE1005 CS2001 CS2002 CS2002 SS1005 SS1005 EE4091	
XXXXXX EE2003 EE3031 EE2007 CS3009 CS2008 EE3002 EE3002 CS2005 CS2006 MG2002 XXXXX EE4091 EE3033 SS2001 EEXXXX EE4092 SS2013 SS2007	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Final Year Project - I Digital Design Technical Communication Skills Engineering Management Professional Issues in IT Computer Engineering Elective-I Total Semester-VIII Final Year Project - II Final Year Project - II Final Year Project - II Computer Engineering Elective-I Total	15 3 3 3 3 3 3 3 3 3 3 3 3 3	3 0 1 0 2 2 1 1 1 1 1 1 1 0 0 2 1 1 0 0 0 1 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	EE2008 CS1004+ EE1005 CS2001 CS2002 CS2002 SS1005 SS1005	
XXXXXX EE2003 EE2007 CS3009 CS2008 EE3002 EE3002 CS2005 CS2006 MG2002 XXXXX EE4091 EE3033 EE3033 SS2001 EE3033 SS2001 EE3033 EE4092 SS2013	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Digital Design Technical Communication Skills Engineering Management Professional Issues in IT Computer Engineering Elective-I Entrepreneurship Technical and Business Writing Computer Engineering Elective-II	15 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 2 2 3 3 14 4 3 3 2 2 3 3 3 16 3 3 2 2	3 0 1 0 2 1 1 1 1 1 1 1 1 0 0 3 3 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	EE2008 EE2008 CS1004+ EE1005 CS2001 CS2002 SS1005 SS1005 EE4091 EE4091	
XXXXXX EE2003 EE3031 EE2007 CS3009 CS2008 EE3002 EE3002 CS2005 CS2006 MG2002 XXXXX EE4091 EE3033 SS2001 EEXXXX EE4092 SS2013 SS2007	Elective-I Total Total Semester-V Computer Organization & Assembly Language Digital Signal Processing Data Communication & Networks Software Engineering Numerical Computing Total Semester-VI Microprocessor Interfacing and Programming Database Systems Operating Systems Engineering Economics Multi-Disciplinary Engineering Elective-II Final Year Project - I Digital Design Technical Communication Skills Engineering Management Professional Issues in IT Computer Engineering Elective-I Total Semester-VIII Final Year Project - II Final Year Project - II Final Year Project - II Computer Engineering Elective-I Total	15 3 3 3 3 3 3 3 3 3 3 3 3 3	3 0 1 0 2 2 1 1 1 1 1 1 1 0 0 2 1 1 0 0 0 1 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	EE2008 EE2008 CS1004+ EE1005 CS2001 CS2002 SS1005 SS1005 EE4091 EE4091	

Eligibility for F	FYP-I: 95 CH
-------------------	--------------

Cr. Hrs
18
60
20
7
16
14
135

Computer Engineering Depth Electives (CEDE)	Multi-Disciplinary Engineering Electives (MDEE)
Cloud and Distributed Computing	Human Computer Interaction (UI/UX)
Internet of Things	Block Chain Technologies and Applications
Embedded System Design	Neural Networks and Fuzzy Logic
Artificial intelligence and Machine Learning	Robotics and Automation
Image Processing and Analysis	Mobile Application/Game Development
System and Network Security	Virtual Reality
System Programming	Software Quality Assurance
High Performance Computing	Instrumentation and Controls
Control Engineering	VLSI System Design
Algorithm Design and Analysis	Data warehousing and Big Data
Hardware design for DSP and ML	GIS and Remote Sensing



Program Vision

To achieve national and inter-national 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 for 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 instil 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 138 credits through respective core and elective courses offered in study plan, AND
- Obtained a CGPA of at least 2.00

Eligibility for FYP-I: 130 CH

Domain	Cr. Hrs
Civil Engineering Core	91
Natural Science	8
Social Sciences	13
Other Engineering	4
Mathematics	11
Management Sciences	7
Computer Programming	4
Total	138

Tentative Study Plan of Bachelor of Science (Civil Engineering)

	(Civil Engineering)				
Code				Prereq	
0) (10	Semester-I	-		1	
CV1002	Engineering Drawing	1	2		
CV1001	Civil Engineering Materials	2	1		
EE1002	Basic Electro-Mechanical	3	1		
	Engineering				
MT1001	Applied Calculus	3	0		
SS1010	English Language Skills	2	Ō		
			-		
SS1009	Pakistan Studies	1	0		
	Total	12	4		
	Semester-II				
CV1003	Engineering Surveying	2	1		
MT1006	Differential Equations	3	0	MT1001	
NS1004	Engineering Mechanics	3	1		
NS1003	Engineering Geology	2	0	1	
SS1007	Islamic Studies / Ethics	2	0	1	
CS1003	Computer Programming	1	2	1	
031003	Total	13	4		
		13	4		
	Semester-III			<u> </u>	
CV2002	Fluid Mechanics	3	1		
CV2001	Advanced Engineering Surveying	2	1	CV1003	
CV2005	Mechanics of Solids - I	2	1	NS1004	
MG2006	Construction Health, Safety and	1	0		
	Environment		Ĭ		
SS2011	Technical Communication Skills	2	0	+	
			-	-	
SSxxxx	Social Sciences - I	2	0		
MGxxxx	Management Sciences Elective	1	0		
	Total	13	3		
	Semester-IV				
CV2006	Structural Analysis – I	3	0	NS1004	
CVxxxx	Civil Engineering Graphics and	1	2	CV1002	
01/0000	č	•	-	011002	
MTOOOC	Construction	~			
MT2006	Probability and Statistics	2	0		
CVxxxx	Quantity Surveying and Estimation	1	1		
MT2007	Numerical Analysis	3	0	MT1006	
SS2009	Technical Report Writing and	0	1		
	Presentation				
MG2002	Engineering Economics	2	0	1	
SSxxxx	Social Sciences - II	2	0		
334444	Total	14	4		
	· · · · · · · · · · · · · · · · · · ·	14		1	
0) (2001	Semester-V	2	1		
CV3001	Advanced Fluid Mechanics	3	1	CV2002	
CV3009	Hydrology and Water Management	3	1	CV2002	
CV4002	Architecture and Town Planning	2	0		
CV3002	Plain and Reinforced Concrete - I	3	1	CV2005	
CV2003	Soil Mechanics	3	1		
0.2000	Total		4		
	Semester-VI	14		1	
C)/4005		2			
CV4005	Steel Structures	3	0	CV2005	
CV3008	Structural Analysis - II	3	0	CV2006	
CV3006	Environmental Engg I	2	0	CV2002	
CV3004	Transportation Planning and	3	0	CV2001	
	Engineering		1		
CV3007	Mechanics of Solids - II	2	1	CV2005	
CV4007	Geotechnical and Foundation Engg.	3	1	CV2003	
31-007	Total	16	2	10,2000	
		10	1 4	1	
01/40000	Semester-VII	2	-		
CV4003	Plain and Reinforced Concrete – II	3	1	CV3002	
CV4004	Highway and Traffic Engineering	3	1	0.45.5.5	
CV4001	Environmental Engineering - II	2	1	CV3006	
CV4008	Fundamentals of Dynamics and its	2	0	CV2006	
	Applications				
NL4001	Geo Informatics - Lab	0	1		
VL4013		0	1	+	
	Introduction to Machine Learning				
CV4091	Final Year Design Project - I	0	3		
	Total	10	8		
	Semester-VIII				
MG3007	Construction Engineering and	2	1		
	Management				
			1 .	CV3002	
CV4010		2	1 1		
CV4010	Design of Structures	2	1		
	Design of Structures			CV4005	
CV4009	Design of Structures Hydraulic Engineering	2	1	CV4005 CV2002	
CV4009 CV4011	Design of Structures Hydraulic Engineering Irrigation and Drainage Engineering	2	1	CV4005 CV2002 CV3009	
CV4009 CV4011 SS2004	Design of Structures Hydraulic Engineering Irrigation and Drainage Engineering Engineering Ethics	2 2 1	1	CV4005 CV2002	
CV4009 CV4011	Design of Structures Hydraulic Engineering Irrigation and Drainage Engineering	2	1	CV4005 CV2002	
CV4009 CV4011 SS2004	Design of Structures Hydraulic Engineering Irrigation and Drainage Engineering Engineering Ethics	2 2 1	1 1 0	CV4005 CV2002	

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 instil 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-resource constraints
- PEO-2 Conduct: Uphold a 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 135 credit hours, including all those courses which have been specified as Core courses.
- Obtained a CGPA of at least 2.00

Domain	Cr. Hrs
Computing	11
Electrical Engineering	83
Other Engineering	5
Management Sciences	6
Natural Sciences	16
Humanities	14
Total	135

Tentative Study Plan-Bachelor of Science (Electrical Engineering)

Code	Code Title		Hrs	Prereq	
oue	Semester-I			riered	
CS1009	Applications of ICT	2	1		
MT1001	Applied Calculus	3	0		
NS1007	Applied Physics	2	1		
ME1001	Engineering Drawing	0	1		
SS1007	Islamic Studies/Ethics	2	0		
SS1005	English Language Skills	3	0		
SS2043	Civics and Community Engagement	2	0		
	Total	14	3		
	Semester-II	-	-	1	
EE1001	Linear Circuit Analysis	3	1		
CS1002	Programming Fundamentals	3	1		
EL1006	Engineering Workshop	0	1		
MT1009	Linear Algebra and Differential	4	0	MT1001	
	Equation				
SS1013	Ideology and Constitution of Pakistan	2	0		
MG1008	Occupational Health and Safety	1	0		
	Total	13	3		
	Semester-III				
CS2002	Data Structure and Algorithms	3	1	CS1002	
EE1004	Electronic Devices and Circuits	3	1	EE1001	
EE2004	Electrical Network Analysis	3	1	EE1001	
MT2008	Multivariable Calculus	3	0	MT1006	
MT2003	Complex Vars. & Transforms	3	0	MT1006	
	Total	15	3		
	Semester-IV				
EE2008	Signals and Systems	3	1	MT2003	
EE1005	Digital Logic Design	3	1		
EE2011	Probability and Random Process	3	0		
xxxxxx	Multi-Disciplinary Engineering Elective	3	0		
100000		-		NS1002	
			1	1131002	
EE2010	Electro-Mechanical Systems	3	1	EE2004	
EE2010	Electro-Mechanical Systems Total	3 15	3	EE2004	
EE2010	Total	-		EE2004	
	Total Semester-V	15	3		
EE2010 EE3002	Total Semester-V Microprocessor Interfacing and	-			
EE3002	Total Semester-V Microprocessor Interfacing and Programming	15 3	3	CS1004	
	Total Semester-V Microprocessor Interfacing and	15	3	CS1004 EE1005	
EE3002	Total Semester-V Microprocessor Interfacing and Programming	15 3	3	CS1004 EE1005 EE2011 EE2008	
EE3002 EE3003 EE3005	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication	15 3 3	3 1 1	CS1004 EE1005 EE2011 EE2008	
EE3002 EE3003 EE3005	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills	15 3 3 3	3 1 1 0	CS1004 EE1005 EE2011 EE2008 MT2008	
EE3002 EE3003 EE3005 SS2001	Total Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory	15 3 3 3 2	3 1 1 0 0	CS1004 EE1005 EE2011 EE2008 MT2008	
EE3002 EE3003 EE3005 SS2001	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Total	15 3 3 3 2 3	3 1 1 0 0 1	CS1004 EE1005 EE2011 EE2008 MT2008	
EE3002 EE3003 EE3005 SS2001	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I	15 3 3 3 2 3	3 1 1 0 0 1	CS1004 EE1005 EE2011 EE2008 MT2008	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Total Semester-VI Power Distribution and Utilization	15 3 3 3 2 3 14 3 3	3 1 1 0 0 1 3 3	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Total Semester-VI Power Distribution and Utilization Feedback Control Systems	15 3 3 3 2 3 2 3 14 3 3 3	3 1 1 0 0 1 3 3 1 1 1	CS1004 EE1005 EE2011 EE2008 MT2008	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Total Semester-VI Power Distribution and Utilization Feedback Control Systems Engineering Economics	15 3 3 3 2 3 14 3 3 3 2 2	3 1 1 0 0 1 3 3 1 1 1 0 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Total Semester-VI Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II	15 3 3 3 2 3 3 14 3 3 3 2 3 3	3 1 1 0 0 1 3 3 1 1 0 1 1 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Total Semester-VI Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III	15 3 3 3 3 2 3 3 14 3 3 3 2 2 3 3 3	3 1 1 0 0 1 3 3 1 1 1 0 0 1 0 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Total Semester-VI Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Total	15 3 3 3 2 3 3 14 3 3 3 2 3 3	3 1 1 0 0 1 3 3 1 1 0 1 1 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EExxxx	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Depth Core I Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Total Semester-VII	15 3 3 3 2 3 3 4 4 3 3 3 3 3 14 14	3 1 1 0 0 1 3 3 1 1 1 0 0 1 0 3 3	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EExxxx EExxxx EExxxx	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Depth Core I Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Depth Elective III Total Semester-VII Final Year Project - I	15 3 3 3 3 3 3 3 3 3 3 3 2 2 3 3 3 3 14 14 3 3	3 1 1 0 0 1 3 3 1 1 1 0 0 1 0 3 3 0 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EExxxx EExxxx EE4091 EEXXXX	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Depth Core I Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Total Semester-VII Final Year Project - I Depth Elective IV	15 3 3 3 3 3 3 3 3 3 3 3 2 2 3 3 3 3 14 14 3 3 3 3 3	3 1 1 0 0 1 3 3 1 1 1 0 0 1 1 0 3 3 3 1 1	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EExxxx EExxxx EE4091 EEXXXX EEXXXX	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Depth Core I Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Final Year Project - I Depth Elective IV Flexible Elective I	15 3 3 3 2 3 3 2 3 3 3 3 3 3 3 3 3 3 3 3	3 1 1 0 0 1 3 3 1 1 1 0 1 0 1 1 0 3 3 0 1 1 1	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EExxxx EE4091 EEXXXX EEXXXX EEXXXX MG3036	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Depth Core I Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Final Year Project - I Depth Elective IV Flexible Elective I Engineering Management	15 3 3 3 2 3 3 2 3 3 3 3 3 3 3 3 3 3 3 3	3 1 1 0 0 1 3 1 1 1 0 1 0 1 0 3 0 1 1 0 1 0 1 1 0 0 1 1 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 0 1 1 0 0 0 0 0 1 1 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005 EE2008 EE2008	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EExxxx EE4091 EEXXXX EEXXXX EEXXXX MG3036	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Depth Core I Total Semester-VI Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Final Year Project - I Depth Elective IV Flexible Elective I Engineering Management Technical and Business Writing	15 3 3 3 2 3 3 2 3 3 3 3 2 3 3 3 3 3 3 3	3 1 1 0 0 1 3 1 1 0 1 1 0 3 0 1 1 0 3 0 1 1 0 0 1 1 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EExxxx EE4091 EEXXXX EEXXXX EEXXXX MG3036	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Depth Core I Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Final Year Project - I Depth Elective IV Flexible Elective I Engineering Management Technical and Business Writing	15 3 3 3 2 3 3 2 3 3 3 3 3 3 3 3 3 3 3 3	3 1 1 0 0 1 3 1 1 1 0 1 0 1 0 3 0 1 1 0 1 0 1 1 0 0 1 1 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 0 1 1 0 0 0 0 0 1 1 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005 EE2008 EE2008	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EExxxx EExxxx EEXXXX EEXXXX MG3036 SS2007	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Depth Core I Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Final Year Project - I Depth Elective IV Flexible Elective I Engineering Management Technical and Business Writing I Semester-VIII	15 3 3 3 2 3 3 2 3 3 3 3 2 3 3 3 3 3 3 3	3 1 1 0 0 1 3 1 1 0 1 1 0 3 0 1 1 0 3 0 1 1 0 0 1 1 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005 EE2008 EE2008	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EExxxx EExxxx EEXXXX EEXXXX MG3036 SS2007	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Depth Core I Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Final Year Project - I Depth Elective IV Flexible Elective I Engineering Management Technical and Business Writing	15 3 3 3 2 3 3 2 3 3 3 3 2 3 3 3 3 3 3 3	3 1 1 0 0 1 3 1 1 0 1 1 0 3 0 1 1 0 3 0 1 1 0 0 1 1 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 1 1 1 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005 EE2008 EE2008	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EExxxx EEXXXX EEXXXX EEXXXX MG3036 SS2007	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Depth Core I Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Final Year Project - I Depth Elective IV Flexible Elective I Engineering Management Technical and Business Writing I Semester-VIII	15 3 3 2 3 2 3 3 2 3 3 3 3 3 3 3 3 3 3 3	3 1 1 0 0 1 3 1 1 1 0 1 1 0 3 3 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005 EE2008 EE2008 C EE2008 SS1005 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EEXXX EEXXX EEXXX EEXXXX MG3036 SS2007 EE4092 SS2013	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Depth Core I Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Final Year Project - I Depth Elective I Engineering Management Technical and Business Writing Final Year Project - II	15 3 3 2 3 2 3 3 2 3 3 3 2 3 3 3 3 3 3 3	3 1 1 0 0 1 3 1 1 1 0 1 1 0 1 1 0 3 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 0 1 1 1 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005 EE2008 EE2008 C EE2008 SS1005 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EExxxx EExxxx EE4091 EEXXXX EEXXXX	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Depth Core I Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Final Year Project - I Depth Elective I Engineering Management Technical and Business Writing Final Year Project - II Entrepreneurship	15 3 3 2 3 3 2 3 3 3 3 3 2 3 3 3 3 3 3 3	3 1 1 0 0 1 3 1 1 1 0 1 1 0 1 1 0 3 1 1 0 1 1 0 1 1 0 1 1 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 0 0 0 0 1 1 1 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005 EE2008 EE2008 C EE2008 SS1005 SS1005	
EE3002 EE3003 EE3005 SS2001 EExxxx EE2038 EE3004 MG2002 EExxxx EEXXX EEXXX EEXXX EEXXXX MG3036 SS2007 EE4092 SS2013 EEXXX	Total Semester-V Microprocessor Interfacing and Programming Analogue and Digital Communication Electromagnetic Theory Technical Communication Skills Depth Core I Power Distribution and Utilization Feedback Control Systems Engineering Economics Depth Core II Depth Elective III Final Year Project - I Depth Elective I Engineering Management Technical and Business Writing Final Year Project - II Entrepreneurship Depth Elective V	15 3 3 2 3 3 2 3 3 3 3 2 3 3 3 3 3 3 3 3	3 1 1 0 0 1 3 1 1 1 0 1 1 0 1 1 0 3 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 0 1 1 1 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 0 1 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	CS1004 EE1005 EE2011 EE2008 MT2008 SS1005 EE2008 EE2008 EE2008 SS1005 SS1005	

Computer Engineering			Electronics		
Breadth Core-I	EE 3017 Data Communication and Networks		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 3002 Digital Signal Processing	3+1	
	EE3020 Digital Design	3+1	EE 3009 VLSI Design	3+1	
	EE 3027 Introduction to IOT	3+1	EE 3027 Introduction to IOT	3+1	
	EE 4019 Embedded System	3+0	EE 4026 Industrial Process Control	3+1	
	EE 4021 Computer Architecture	3+1	EE 4028 Digital Control System	3+0	
	EE 4024 Introduction to Robotics	3+1	EE 4090 Industrial Automation	3+1	
	EE 4032 Network Programming				
	EE 4037 Applied Machine Learning				

Specialization Streams Offered

Power Systems			Telecommunication		
Breadth Core-I	EE 4030 Power Distribution and Utilization	3+1	EE 2024 Electronic Circuit Design	3+1	
Breadth Core-II	EE 4031 Power System Analysis	3+1	EE 3017 Data Communication and Networks	3+1	
Depth Electives	EE 3024 Power Electronics	3+1	EE 3008 Microwave Engineering	3+1	
	EE 3027 Introduction to IOT	3+1	EE 3027 Introduction to IOT	3+1	
	EE 4033 Power Generation	3+0	EE 4003 Wireless and Mobile Communication	3+1	
	EE 4034 Power System Protection	3+1	EE 4006 Fiber Optic Communication	3+0	
	EE 4035 Renewable Energy Systems	3+1	EE 4007 Wave Propagation and Antenna Design	3+1	
	EE 4089 Electric Power Transmission	3+1	EE 4016 Telecom Transmission and Switching System	3+1	
	EE 4036 Power System Operation and Control	3+1	EE 4023 Next Generation Networks	3+1	
	EE XXXX Advanced Electrical Machines	3+1	EE 4084 Radio Electronics	3+1	

The department may not offer a specialization stream if the number of students are low.



MS Admission Test, Eligibility and Selection Criteria

			Engineering	
Degrees	1	A	Master of Science (Civil Engineering)	
Admission Test		plicant must select only one out the three admission test options	FAST-NUCES GRE General NTS GAT-A General	
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%	
			Engineering	
Dogroos			Master of Science (Electrical Engineering)	

			Engineering	
Degrees			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	
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 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.

- To enrich Civil Engineers with advanced knowledge and skills required to identify and solve diverse range of complex problems in Civil Engineering and related fields.
- To conduct applied research for rapidly evolving challenges in infrastructure development.
- To pursue life-long learning and continue professional and intellectual development.

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

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)

	Research-B	ased	Coursework-Based**		
MS Civil Engineering	Courses	Cr. Hrs.	Courses	Cr. Hrs.	
Core Courses	3	9	4	12	
Elective Courses	4	12	5	15	
CV5032 Research Methodology (Take in semester-I or II)	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

Advanced Structural Analysis	CV 5094	Advanced Soil Machine
Probability and Statistical Methods	CV 5099	Optimization Techniques
Foundation Engineering	CV 5012	Forensic Engineering
Finite Element Analysis	CV 5014	Principles and techniques of Ground Improvement
Transportation Planning	CV 5016	Geotechnical Engineering of Embankment Dams
Hydraulic Structures	CV 5105	Innovative Civil Engineering Material
Pavement Analysis and Design	CV 5109	Earthquake Engineering
Advanced Open Channel Hydraulics	CV 6008	Advanced Engineering Mathematics
Trans- Boundary Water Issues & Water Diplomacy Framework	CV xxx	Repair and Rehabilitation of Structures
	Probability and Statistical Methods Foundation Engineering Finite Element Analysis Transportation Planning Hydraulic Structures Pavement Analysis and Design Advanced Open Channel Hydraulics Trans- Boundary Water Issues &	Probability and Statistical MethodsCV 5099Foundation EngineeringCV 5012Finite Element AnalysisCV 5014Transportation PlanningCV 5016Hydraulic StructuresCV 5105Pavement Analysis and DesignCV 5109Advanced Open ChannelCV 6008HydraulicsCV 5xxx



PROSPECTUS 2024

The purpose of the Master of Science (Electrical Engineering) is to attain theoretical and practical depth in one of the areas of interest. The Master of Science (Electrical Engineering) 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 subdiscipline of Electrical Engineering. (Application to be added)
- Teach 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)

Code	Title		Cr.Hrs	
Semester-I				
EExxxx	Core Course-I		3	0
EExxxx	Core Course-II		3	0
EE5011	Research Methodology		3	0
		Total	9	0
Semester-II				
EExxxx	Core Course-III		3	0
EExxxx	Elective-I		3	0
EExxxx	Elective-II		3	0
		Total	9	0
Semester-III				
EExxxx	Elective-III		3	0
EExxxx	MS Thesis-I/Elective-IV		3	0
		Total	6	0
Semester-IV				
EExxxx	Elective-V		3	0
EE5092	MS Thesis-II/MS Project/Elective-VI		3	0
		Total	6	0
		G. Total	30	

Registration in 'MS Thesis-I' shall be allowed provided the student has

- a. Earned at least 15 CH
- b. Passed the 'Research Methodology course' AND
- c. CGPA is equal to or more than 2.50

Core Courses

(Any THREE of the Following Courses must be passed)

CS 5024	Advanced Computer Networks	EE 5028	Linear System
EE 5106	Advanced Digital Signal Processing	EE 5029	Advanced Power system Modelling and Analysis
EE 5022	Advanced Embedded System	EE 5045	Adv. Probability Theory
EE 5023	Analog and Discrete Electronics	EE 5012	Applied Electromagnetics

