

FAST-NUCES ENGINEERING PROGRAMS

SECTION 1: DEAN'S MESSAGE AND OVERVIEW

Dean's Message

The National University of Computer and Emerging Sciences stands among the top-tier prestigious universities in Pakistan. The engineering programs are accredited by the Pakistan Engineering Council (PEC) and have achieved Level-II accreditation under the Washington Accord. Graduates are placed globally in reputable organizations such as Amazon, Vodafone, Huawei, IBM, and Samsung.

Program Availability

- Electrical Engineering: Offered at all five campuses.
- Civil Engineering: Exclusively available at the Lahore campus.
- Levels: Bachelor of Science (BS), Master of Science (MS), and Doctorate (PhD).

SECTION 2: BS PROGRAMS IN ENGINEERING ADMISSION DETAILS

Admission Test Options

Applicants must select only one of the following:

- FAST-NUCES Admission Test
- SAT
- NTS NAT-IE (NTS tests from specific universities are not acceptable)

Eligibility Criteria

- SSC (Matric) or equivalent: 60% minimum marks.
- HSSC (FSC) or equivalent: 60% minimum marks.
- Subject Requirement: Pre-Engineering (Chemistry, Mathematics, Physics) OR ICS (Computer Science, Mathematics, Physics).
- Pre-Medical Students: Eligible if they have passed additional math or are waiting for results.

Selection Criteria Weightage

- Admission Test Marks: 33%
- HSSC/Equivalent Marks: 50%
- SSC/Equivalent Marks: 17%

SECTION 3: BACHELOR OF SCIENCE (COMPUTER ENGINEERING)

Program Mission

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 (PEOs)

- Creativity: Apply cutting-edge engineering practices to develop sustainable solutions for complex problems under limited resources.
- Conduct: Uphold responsible, professional, and ethical conduct with interpersonal skills.
- Leadership: Emerge as team leaders in their domain and support economic development.
- Versatility: Practice in a broad range of industries and adapt to new technologies.

Award of Degree

- Passed courses totaling at least 140 credit hours.
- Obtained a CGPA of at least 2.00.

Career Opportunities

Graduates can pursue careers in the telecom industry, electronics, power sector, embedded

system design, and software programming.

Curriculum Highlights

- Core Computing: Programming, Data Structures, Operating Systems, Databases, Software Engineering.
- Core Engineering: Circuit Analysis, Digital Logic Design, Signals and Systems, Microprocessor Interfacing, Digital Signal Processing.
- Depth Electives: IoT, Embedded System Design, AI and Machine Learning, Network Security, Blockchain, Robotics.
- Multi-Disciplinary Electives: Mobile App Development, Virtual Reality, Software Quality Assurance.

SECTION 4: BACHELOR OF SCIENCE (CIVIL ENGINEERING)

Program Mission

To develop highly competent graduates with sound engineering knowledge, social responsibility, and lifelong learning skills.

Program Educational Objectives (PEOs)

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

Award of Degree

- Earned at least 140 credit hours through core and elective courses.
- Obtained a CGPA of at least 2.00.

Career Opportunities

Work in the construction industry as well as relevant business, management, and finance sectors to design and build sustainable civil infrastructures.

Curriculum Highlights

- Core Courses: Engineering Materials, Surveying, Mechanics of Solids, Fluid Mechanics, Soil Mechanics, Structural Analysis, Reinforced Concrete Design, Environmental Engineering, Transportation Planning.
- Electives: Architecture and Town Planning, Hydraulic Engineering, Irrigation and Drainage, Construction Management.
- Humanities/Social Sciences: Sociology, Engineering Economics, Engineering Law, Foreign Languages.

SECTION 5: BACHELOR OF SCIENCE (ELECTRICAL ENGINEERING)

Program Mission

To develop a nurturing environment for quality engineering education through discovery and innovation, emphasizing practical application and hands-on experience.

Program Educational Objectives (PEOs)

- Creativity: Apply engineering practices to develop sustainable solutions.
- Conduct: Uphold professional and ethical conduct.
- Leadership: Emerge as team leaders supporting service and economic development.
- Versatility: Practice in diverse industries and embrace new technologies.

Award of Degree

- Passed courses totaling at least 140 credit hours.
- Obtained a CGPA of at least 2.00.

Specialization Streams

- Computer Engineering: Data Communication, Operating Systems, VLSI Design, IoT, Embedded Systems.
- Electronics: Electronic Circuit Design, Power Electronics, Instrumentation, Digital Signal Processing, Industrial Automation.
- Electric Vehicles: Power Distribution, Power System Analysis, Power Generation, Renewable Energy Systems, Electric Power Transmission.

SECTION 6: MS PROGRAMS IN ENGINEERING ADMISSION DETAILS

Admission Test Options

Applicants must select only one:

- FAST-NUCES Admission Test
- GRE General
- NTS GAT-A General

Eligibility Criteria

- Education: Bachelor of Science in relevant field or equivalent (16 years of education) from a recognized university.
- Performance: Minimum 60% marks or CGPA of at least 2.00 on a scale of 4.00.

Selection Criteria Weightage

- Admission Test Marks: 50%
- Past Academic Record (Bachelor): 50%

SECTION 7: MASTER OF SCIENCE (CIVIL ENGINEERING)

Program Mission

To develop highly competent graduates with advanced engineering knowledge and research skills for professional excellence.

Specialization Areas

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

Award of Degree

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

Study Plan Structure

- Research-Based: Core Courses (9 CH), Electives (12 CH), Thesis (6 CH), Elective (3 CH).
- Coursework-Based: Core Courses (12 CH), Electives (15 CH), Elective (3 CH).

SECTION 8: MASTER OF SCIENCE (ELECTRICAL ENGINEERING)

Program Mission

To attain theoretical and practical depth in a specific area of interest and enhance critical thinking and intuitive abilities.

Program Educational Objectives (PEOs)

- Provide advanced learning in a discipline of Electrical Engineering.
- Enhance skills in problem-solving, mathematical modeling, and leadership.

Award of Degree

- Passed courses totaling at least 30 credit hours (including three core courses).
- Obtained a CGPA of at least 2.50.

Study Plan Structure

- Research-Based: Core Courses (9 CH), Electives (12 CH), Thesis (6 CH), Elective (3 CH).
- Coursework-Based: Core Courses (12 CH), Electives (15 CH), Elective (3 CH).

Core and Elective Topics

- Topics include Engineering Optimization, Computational Statistics, Internet of Things, Advanced Machine Learning, Deep Learning, Advanced Computer Networks, and Advanced Control Systems.