

This document outlines the professional profile, experience, education, and research contributions of Dr. Syed Hassan Farooq, a structural engineer and professor.

**Professional Summary** Dr. Syed Hassan Farooq is a dedicated structural engineer and professor with extensive experience in academia and industry. He excels in teaching, curriculum development, and innovative research, particularly in structural design and analysis. His expertise includes the use of advanced software for structural analysis and design, as well as a focus on marine structures, tunnels, and retrofitting techniques.

### Work Experience

- **Professor at NUST (2024-2025):** Developed course materials, conducted research, published papers, and supervised student projects while collaborating with industry and government.
- **Part-Time Structural Designer at H&A Consultants (2010-2025):** Conducted structural analysis and design for various projects, produced detailed drawings, and provided solutions for structural issues.
- **Director of Design at Consultancy Directorate (2021-2024):** Led design teams for classified projects, ensured compliance with standards, conducted audits, and mentored a multidisciplinary team.
- **Construction Project Manager at Corps of Engineers, Pakistan Army (1993-2021):** Supervised military and civil engineering projects, applied engineering solutions in diverse conditions, and coordinated with multiple agencies.
- **Head of Department Roles:** Held leadership positions at Military College of Engineering and National University of Technology, focusing on strategic planning, faculty mentorship, and curriculum development.

### Education

- **Ph.D. in Civil Engineering:** Focused on seismic retrofitting at the University of Engineering & Technology, Lahore (2010).
- **MS in Structural Engineering:** Specialized in seismic performance (2006).
- **BE in Civil Engineering:** Concentrated on structural, transportation, and geotechnical engineering (1993).
- **Post-Doctorate in Disaster Risk Management:** Completed at the Asian Institute of Technology, Bangkok (2013).

**Professional Skills** Dr. Farooq possesses a wide range of skills, including:

- Higher education teaching and research.
- Accreditation and quality assurance.
- Curriculum design and assessment.
- Proficiency in structural analysis and design software (ABAQUS, SAP2000, ETABS, SAFE).
- Expertise in retrofitting and damage assessment of structures.

**Teaching Experience** Dr. Farooq has taught various undergraduate and postgraduate courses, including:

- Structural Analysis, Earthquake Engineering, and Advanced Structural Mechanics.
- He has supervised numerous undergraduate and graduate research projects, contributing to the academic growth of his students.

**Research Interests** His research interests encompass:

- 3D concrete printing, impact loading, seismic strengthening, and structural health monitoring.
- Development of innovative materials and techniques for structural applications.

**Research Profile Overview** Dr. Farooq has published over 50 journal papers, including 29 ISI-indexed articles, with a significant citation impact (H-index: 19). He serves as an academic editor for several journals and has organized international seminars on structural engineering topics.

**Funded Research Projects** Dr. Farooq has led multiple funded research projects, including:

- Disaster risk prediction technologies for power infrastructure.
- Development of seismic isolation systems using magneto-rheological elastomers.
- Feasibility studies for smart base isolation systems and sustainable 3D printing technologies.

**Academic Awards** He received the Frederick Palmer Prize in 2020 for his research on soil-structure interaction under train-induced vibrations.

**Research Projects** Dr. Farooq has conducted various research projects, including:

- Analysis of impact-resistant structures and tunnels.
- Seismic vulnerability assessments of school buildings in high seismic zones.
- Development of self-compacting cementitious systems and innovative retrofitting techniques.

**Design Experience** His design experience includes:

- Analysis and design of marine structures, tunnels, and hardened facilities.
- Retrofitting and strengthening of structurally deficient structures.
- Notable projects include the design of a 27-storey tower in Islamabad and damage assessments for critical infrastructure.

In summary, Dr. Syed Hassan Farooq is a highly accomplished structural engineer and educator with a robust portfolio of teaching, research, and practical experience in structural design and analysis, contributing significantly to both academia and industry.