

# Safety in Design: Accreditation Standards for Architecture, Engineering, and Construction Education

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The code of ethics of different professional societies places a responsibility on their members to consider the safety, health, and welfare of the public in their planning and design decisions, which is carried forward in the professional standard of care. Constructors, architects, and engineers can better meet this expectation when they are trained and educated in how to address safety in the planning and design process. For instance, construction managers should consider safety principles in pre-construction planning and in placing temporary structures. Many times the consideration of safety during the design process can lead to greater benefit, but with a few exceptions, little is required in this realm from an accreditation perspective.

The goal of this research is to study the accreditation criteria related to safety education set forth by different accreditation agencies such as the American Council for Construction Educators (ACCE), National Architectural Accrediting Board (NAAB), and Accreditation Board of Engineering and Technology (ABET). A quantitative content analysis approach was applied to this research. The authors focused on the manifest and latent content to mark the presence of safety-related requirement in the accreditation criteria. The authors took an all-inclusive view of programs, expanding beyond traditional engineering disciplines focused on the built environment such as construction management, construction engineering, architecture, architectural engineering, and civil engineering.

The authors found that about 20 percent of 64 program-types studied have an indication of accreditation criteria with Safety through Design type language. Engineering program-types all have safety at General Criteria level. Only seven program-types (25%) such as chemical engineering and construction engineering programs have Program Criteria related to safety requirements for curriculum (Program Criteria) and out of seven, three program-types (11%) have PtD language. Hence 75% of the engineering program-types have no safety requirements at the Program Criteria level. Three out of 24 Engineering Technology program-types (12.5%) have PtD requirements, and an additional three Engineering Technology program-types have safety language. The remaining 18 Engineering Technology program-types are without any safety or Safety in Design-related criteria.

Moreover, in the area of Applied and Natural Sciences four out of six (67%) programs-types have PtD requirement and in Computing one out of four (25%), program-types are required to teach prevention of hazards through design principles. Construction and architecture disciplines do not distinguish between General and Program Criteria, and they require safety to be taught, which can be interpreted as PtD education. For example, construction management programs require to “create a construction project safety plan” and “recognize basic safety hazards on a construction site and standard prevention measures,” the authors consider that these requirements can be interpreted as safety through planning and design. If the architecture, engineering, and construction (AEC) industry want constructors, architects, and engineers to be equipped with knowledge of safety, especially Safety in Design, the accreditation boards should consider making Prevention through Design a requirement in the accreditation criteria. This change will create consistency in AEC programs throughout the country and will lead to the measurement of the performance in this area.

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