

# **ANSI POSITION PAPER ON THE ROLE OF TECHNICAL STANDARDS IN THE CURRICULUM OF ACADEMIC PROGRAMS IN ENGINEERING, TECHNOLOGY AND COMPUTING**

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**Approved by the ANSI National Policy Committee, 2010**

## **Introduction**

**The American National Standards Institute (ANSI) has served in its capacity as administrator and coordinator of the United States private sector voluntary standardization system for more than 90 years. ANSI has maintained as its primary goal the enhancement of global competitiveness of U.S. business and the American quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems and promoting their integrity.**

**The Institute represents the interests of its nearly 1,000 company, organization, government agency, institutional and international members.**

1. The purpose of this document is to define the desired role of technical standards in education within engineering, technology, and computing (ETC) academic curricula in the technical areas of interest of The American National Standards Institute (ANSI).
2. Technical standards are established norms or requirements. They are usually available as formal documents that determine uniform engineering, technical, performance and interoperability criteria, methods, processes and practices. Among their uses are the setting of specifications at the onset of a design, defining constraints during the detailed design process, and serving as benchmarks during testing.

Introducing standards in the classroom will augment the learning experience by pointing students to available design tools, and to best industry practices. Student knowledge of standards would facilitate the transition from classroom to workplace by aligning educational concepts with real-world applications and market constraints.

## **General Intent**

3. Along with its activities in the area of standard development, ANSI is committed to the development and dissemination of educational materials about standards.
4. Recognizing that the role of standards in current ETC academic curricula is often unclear, and that most graduates of ETC programs receive little systematic education on standards, ANSI desires to redefine and enhance the integration of standards in academic education.

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5. Integration of standards in ETC curricula may be achieved in several forms:
  - a. By reference –indication that a material, product, system or service is covered by a technical standard and a citation of the standard
  - b. By introducing the principal technical characteristics of a standard – an indirect introduction to a technical standard by extraction of principal aspects of the standard and incorporating them in classroom instruction, homework assignments, laboratories or projects
  - c. By direct use of a published standard (or a significant excerpt of a published standard used with permission) in classroom instruction, homework assignments, laboratories or projects
  - d. By regular use and reference to technical standards in large scale projects, especially last year design or “capstone” projects [4].
  
6. ANSI’s recommendations regarding the role of technical standards in the curriculum of academic programs in engineering, technology and computing
  - 6.1 ANSI recommends that exposition to standards *by reference* (5a) be made the norm in all ETC curricula, and that this goal be assisted by increased use of textbooks that review and include references to technical standards in their narrative.
  - 6.2 ANSI recommends that during their last or next-to-last academic year, ETC undergraduate students in standard curricula be exposed multiple times to introductions to the *principal technical specifications of a standard* (5b). Such introductions can be provided through in classroom instruction, homework assignments, laboratories or projects.
  - 6.3 ANSI recommends that during their last or next-to-last academic year, ETC undergraduate students be exposed to at least one instance of *extensive direct use of a published standard* (5c).
  - 6.4 ANSI recommends that, to the extent practicable, last year design or “capstone” projects make regular use of technical standards, and that the relevance and applicability of technical standards be part of progress and final reports on such projects. Among the proposed activities is a “standards search” at the commencement of each project, paralleling the common patent and literature searches.

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