

Mandatory Continuing Education Requirements for Licensed Civil Engineers

Gouranga Banik, Ph.D., P.E., F.ASCE

Professor and Chair, Dept. of Civil and Architectural Engineering, Tennessee State Univ., Marietta, GA 30068 (corresponding author). E-mail: gbanik@bellsouth.net; gbanik777@gmail.com

Leslie Daugherty, P.E., M.ASCE

Bridge Engineer, Alaska DOT&PF.

Keven Kleweno, P.E., M.ASCE

Utility Engineering Analyst, Regulatory Commission of Alaska.

N. Catherine Bazan-Arias, Ph.D., P.E., F.ASCE

Senior Engineer at DiGioia, Gray & Associates, LLC.

Darrell Berry, P.E., F.ASCE

Senior Project Manager, Mead & Hunt, Inc.

Dennis L. Richards, P.E., D.WRE, F.ASCE

Senior Project Manager, Premier Engineering Corporation.

John A. Casazza, Aff.M.ASCE

Managing Director, ASCE Continuing Education.

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DOI: 10.1061/(ASCE)EI.1943-5541.0000214

Introduction

The civil engineering profession today in the United States does not have a standardized requirement for continuing education. In the context of this paper, continuing education refers to postdegree educational activities for licensed professional civil engineers. The terms *life-long learning* and *professional development* have a slightly different emphasis than continuing education but are included in this discussion because education is the primary objective of all three concepts. The types of activities defined as continuing education, when required, vary depending on the jurisdiction and organization overseeing the adherence to the requirements. Further, when requirements exist, they vary in scope, documentation, and duration. The purpose of this paper is to compare the existing continuing education requirements, both within the civil engineering profession and with other professions that require licensure, and to make recommendations regarding continuing education requirements for civil engineers.

Background

Civil Engineering

As of October 2013, forty (40) states currently have continuing education requirements for professional engineering registration. Twenty-nine (29) of these states require fifteen (15) continuing education hours each year, and eight (8) states require twelve (12) hours each year. Two states, Florida and Virginia, require fewer hours. Florida requires eight (8) continuing education hours each year and Virginia requires sixteen (16) hours every two years.

Seven (7) of the thirty-nine states require that at least one (1) hour every two years be in professional conduct and ethics applicable to the practice of engineering, and one (1) state requires two (2) hours every three (3) years. See Table 1 for the minimum requirement by state for continuing education hours in ethics.

Some states require continuing education hours specific to state laws or rules. Florida requires that four (4) of the eight (8) hours must relate to Florida statutes and rules of the board, and the Florida administrative code. Indiana requires that at least one (1) hour every two years be on the subject of Indiana's engineering laws and rules.

Eleven (11) states, the District of Columbia, and Puerto Rico do not require continuing education for registered professional engineers. The states that do not currently have a continuing education requirement for engineers are Arizona, California, Colorado, Connecticut, Delaware, Hawaii, Massachusetts, Michigan, Rhode Island, Vermont, and Washington.

Other Professions

The continuing education requirements by state of other comparable professions with licensure were compiled. These professions include architects, attorneys, certified public accountants, dentists, medical doctors, nurses, and surveyors. The total requirements, including any ethics component, for each profession are located in the appendices. Although the District of Columbia and the U.S. territories often have licensure boards, the numbers are not consistent among the various professions. Because of a lack of consistent data, only the licensure requirements of the 50 states were included in the comparison.

Table 1. Minimum Requirement by State for Continuing Education Hours in Professional Conduct and Ethics

State	Professional conduct and ethics requirement
Indiana	1 h every 2 years
Louisiana	1 h every 2 years
Maryland	1 h every 2 years
Mississippi	2 h every 3 years
New Jersey	2 h every 2 years
New Mexico	4 h every 2 years
Texas	1 h every year
Wisconsin	2 h every 2 years

Findings

Mandatory continuing education as a requirement for civil engineering licensure is not a new concept. The first state to adopt the practice was Iowa in 1979; yet, a second state, Alabama, did not follow suit until 1991 (Russell and Stouffer 2003). As previously discussed, the majority of the states today have some requirement(s), but these are not uniform [National Society of Professional Engineers (NSPE) 2012]. Compared with many other professions, civil engineers lag behind in professional development. However, policies and guidance exist that assists with the development of a uniform system in all jurisdictions.

Current ASCE Policies

The ASCE consistently supports general mandatory continuing education for licensed engineers through at least three means: their Code of Ethics, a policy statement, and the strategic plans of the Society and ASCE's Institutes.

ASCE's Code of Ethics specifically addresses continuing education for members. Canon 7 reads, "Engineers shall continue their professional development throughout their careers, and shall provide opportunities for the professional development of those engineers under their supervision." Part a. states, "Engineers should keep current in their specialty fields by engaging in professional practice, participating in continuing education courses, reading in the technical literature, and attending professional meetings and seminars."

ASCE Policy Statement 425 "Continuing Professional Development for Licensure" supports both professional development as a condition of licensure, including an ethics component, and uniformity of requirements among jurisdictions (ASCE 2013). Of interest is the statement's use of the term *documented continuing professional development*, which implies that voluntary or arbitrary continuing education is insufficient. Their rationale is that continuing education "maintains and enhances the competence of practicing professional engineers," which subsequently protects the public's welfare. The policy also maintains that an awareness of the Fundamental Canons of Professional Conduct of the Code of Ethics is lacking in the profession, as evidenced by complaints to licensing boards. An ethics component of professional development is advocated to further enhance public health, safety, and welfare. Another sound argument from the policy is that many engineers are licensed in multiple jurisdictions, indicating that a common approach to requirements offers practical benefits.

Comparison with Other Professions

As shown in Fig. 1, compared with doctors, nurses, attorneys, accountants, dentists, surveyors, and architects, and civil engineers have the second lowest requirement per jurisdiction for continuing education. Although nursing lags behind civil engineering with fewer states requiring continuing education hours for licensure renewal, that number does not reflect the amount of continuing education that is required by nursing employers.

Fig. 2 presents the number of hours of ethics education required for each profession. As is seen, civil engineers lag behind attorneys and accountants in ethical requirements even though the profession has a significant effect on society, as seen in recent infrastructure issues ranging from rural development to groundbreaking technology applications. However, during the past decade, ASCE's Academies have established professional development hours on ethics as part of their membership requirements (see Examples of Standardized Requirements in Civil Engineering, ASCE Civil Engineering Certification).

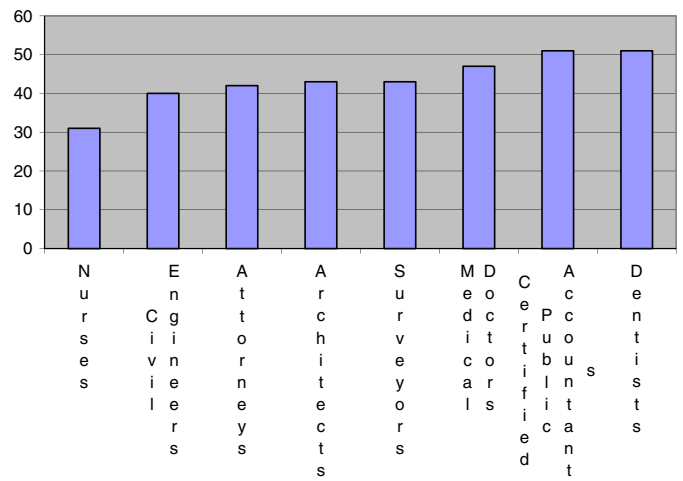


Fig. 1. Number of jurisdictions with continuing education requirement as of July 2012

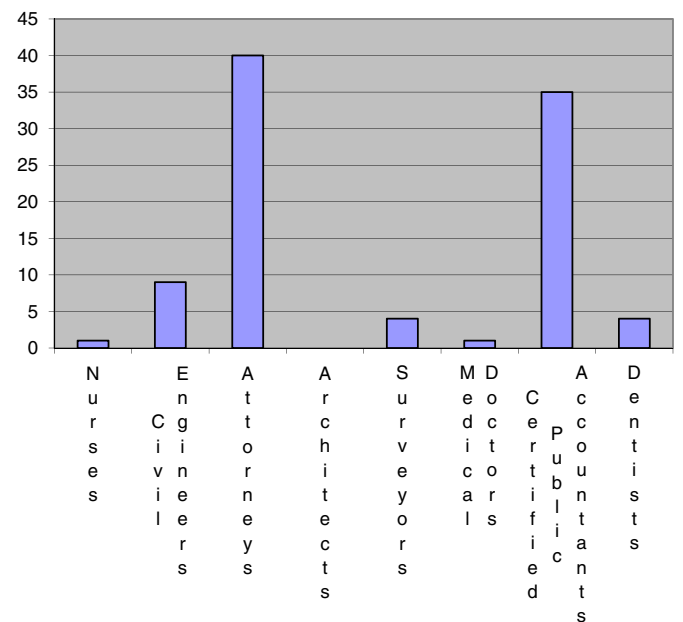


Fig. 2. Number of jurisdictions with ethics requirement as of July 2012

In addition to states and licensing bodies' requirements for continuing education, some professional societies have similar requirements for continued membership. On a national level, the American Institute of Architects [American Institute of Architects (AIA) 2012] and American Institute of accountants dictate the number of hours and content of the courses that their members must fulfill, similar to state requirements [American Institute of CPAs (AICPA) 2012].

Examples of Standardized Requirements in Civil Engineering

National Council of Examiners for Engineering and Surveying (NCEES)

In 2008, NCEES released a revision to the "Continuing Professional Competency Guidelines" document, which offers guiding

principles for jurisdictions that require or are considering continuing education as a condition of licensure renewal [National Council of Examiners for Engineering, and Surveying (NCEES) 2008].

NCEES supports a uniform policy of *continuing professional competency* (CPC), which they define as advancement of professional skills and ethics, in addition to technical knowledge. NCEES recommends 15 PDHs (professional development hours, equivalent to a contact hour of instruction) per year with a maximum of 15 hours that may be rolled over to the next renewal period. Currently, 29 of the 53 jurisdictions require 15 hours per year.

With CPC, the choices for meeting the requirements go beyond traditional classroom learning. Some examples of alternate methods of acquiring credit are as follows:

- Successful completion of short courses/tutorials and distance-education courses offered through correspondence, television, videotapes, or the Internet;
- Presenting or attending qualifying seminars, in-house courses, workshops, or professional or technical presentations made at meetings, conventions, or conferences;
- Teaching or instructing continuing education or college courses;
- Authoring published papers, articles, books, or accepted licensing examination items;
- Active participation in professional or technical societies, in which contact with peers is thought to increase the understanding of current topics, technical developments, and other educational opportunities; and
- Registering patents.

ASCE Civil Engineering Certification

In addition to state licensing boards requiring continuing education units to maintain a professional engineering license, specialty certification within the civil engineering discipline requires continuing education units for registered professional engineers to maintain certification. In 2004, the ASCE Board of Directors created Civil Engineering Certification, Inc. (CEC) to provide a mechanism for the postlicensure certification of the various specialties within civil engineering. Specialty certification is a voluntary, postlicense credential that provides recognition of advance expertise in a technical specialty, superior experience, strong ethics, and a commitment to lifelong learning and continuing professional development. To date, the following three Academies have been established within CEC: the American Academy of Water Resources Engineers (AAWRE) established in 2004, the Academy of Geo-Professionals (AGP) established in 2008, and the Academy of Coastal, Ocean, Port and Navigation Engineers (ACOPNE) established in 2010.

Individuals certified by the academies have the designation of Diplomate. Each of the three academies encourages lifelong learning and continued professional development with all Diplomates required to obtain continuing education unit hours annually. As part of the annual certification renewal process, each AAWRE Diplomate is required to earn a minimum of thirty (30) professional development hours, including two (2) professional development hours in ethics and two (2) professional development hours in sustainability, every year. Each AGP and ACOPNE Diplomate is required to earn a minimum of forty (40) professional development hours every two years, including four (4) professional development hours in ethics and two (2) professional development hours in sustainability.

Recommendations for Civil Engineering

1. All states should have continuing education requirements to reinforce the credibility of the civil engineering profession.

- a. Continuing education requirements in every U.S. jurisdiction raises the professional bar of civil engineering to higher than all other professions evaluated.
 - b. A mandatory ethics component within continuing education requirements is an integral part of enhanced credibility. Ethics training is lacking in most professions, meaning that this mandatory component would differentiate and elevate civil engineering.
 - c. If civil engineers lose credibility, trust is lost. Enhanced professional credibility prevents interference by other professionals and legislative bodies into civil engineering decision making.
2. The number of hours and content of education programs should be standardized among the various jurisdictions to enhance the consistency of the profession and to aid comity.
 - a. Determining and implementing a standard required number of hours for all jurisdictions and governing bodies will assist individuals licensed in multiple jurisdictions and specialty certifications.
 - b. Ideally, as professionals, individuals should have the freedom to determine the type and vendor of the educational program, whether within their technical specialty or by developing an understanding of a closely related specialty.
 - (1) A combination of traditional and nontraditional educational activities should be acceptable. Such requirements could follow the NCEES or ASCE CEC model.
 - (2) Additional requirements for special conditions per jurisdiction, such as dynamic and wind loading and permafrost, may be incorporated as needed to a standardized baseline.

Conclusion

Continuing education is necessary to address emerging technology, design issues, and active legislation that affect our field. The advantages of continuing education, both for the individual and the profession as a whole, considerably outweigh perceived inconveniences or disadvantages. Nationally standardized continuing education requirements further enhance the benefits to all parties. Consequently, a reasonable minimum standard should be developed and implemented for civil engineers, with the requirements being reviewed periodically and updated as needed, and with the flexibility to allow for additional requirements per jurisdiction.

Appendix. Additional Information

For a list of CE requirements by state, see [NSPE 2012](#). For ASCE Policy Statement 425, see [ASCE 2013](#).

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