

Continuing Education Requirements in Civil Engineering and Other Learned Professions
ASCE Continuing Education Committee
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Abstract: Continuing education requirements for licensed civil engineers vary among states. The varying requirements for license renewal within the civil engineering profession, such as number of hours and scope of education, are compared. Subsequently, these requirements are compared with the continuing education requirements of several other learned professions: attorneys, architects, certified public accountants, dentists, medical doctors, nurses, and surveyors. In general, civil engineering continuing education requirements lag behind those of the other learned professions. This analysis is the first step in developing uniformity between licensure jurisdictions and improving civil engineering continuing education compared to other learned professions.

I. 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 post-degree educational activities for licensed professional civil engineers. The terms “life-long learning” and “professional development” can have slightly different emphasis than “continuing education,” but are included in this discussion because education is a 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, the requirements, when they exist, 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.

II. Background

A. Civil Engineering

As of July 2012, thirty-nine (39) 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 less 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 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. The following table presents the minimum requirement by state for continuing education hours in ethics.

State	Ethics Requirement
Indiana	1 hour every 2 years
Louisiana	1 hour every 2 years
Maryland	1 hour every 2 years
Mississippi	2 hours every 3 years
New Jersey	2 hours every 2 years
New Mexico	4 hours every 2 years
Texas	1 hour every year
Wisconsin	2 hours every 2 years

Some states require continuing education hours specific to state laws or rules. Florida requires four (4) of the eight (8) hours must relate to Florida statutes and rules of the board, and Florida administrative code. Indiana requires 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.

B. Other Professions

The continuing education requirements of other comparable professions with licensure were compiled. These professions include: architects, attorneys, certified public accountants (CPAs), 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 US Territories often have licensure boards, the numbers are not consistent among the various professions. Due to a lack of consistent data, only the licensure requirements of the 50 States were included in the comparison.

III. Findings

Mandatory continuing education as a requirement for civil engineering licensure is not a new idea. The first state to adopt the practice was Iowa in 1979, but a second state, Alabama, would not follow suit until 1991.³ As previously discussed, the majority of states today have some requirement(s), but these are not uniform. Compared to many other professions, civil engineers

lag behind in professional development. However, policies and guidance exist that could help the development of a uniform system in all jurisdictions.

A. Current ASCE Policies

The American Society of Civil Engineers 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's and ASCE 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"¹ supports both professional development as a condition of licensure, including an ethics component, and uniformity of requirements among jurisdictions. Of interest is the statement's use of the term "documented continuing professional development" which implies that voluntary or arbitrary continuing education is not sufficient. 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, so a common approach to requirements offers practical benefits.

B. Comparison with Other Professions

As shown on Table 1, in comparison to doctors, nurses, attorneys, accountants, dentists, surveyors, and architects, 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 how much continuing education is required by nursing employers.

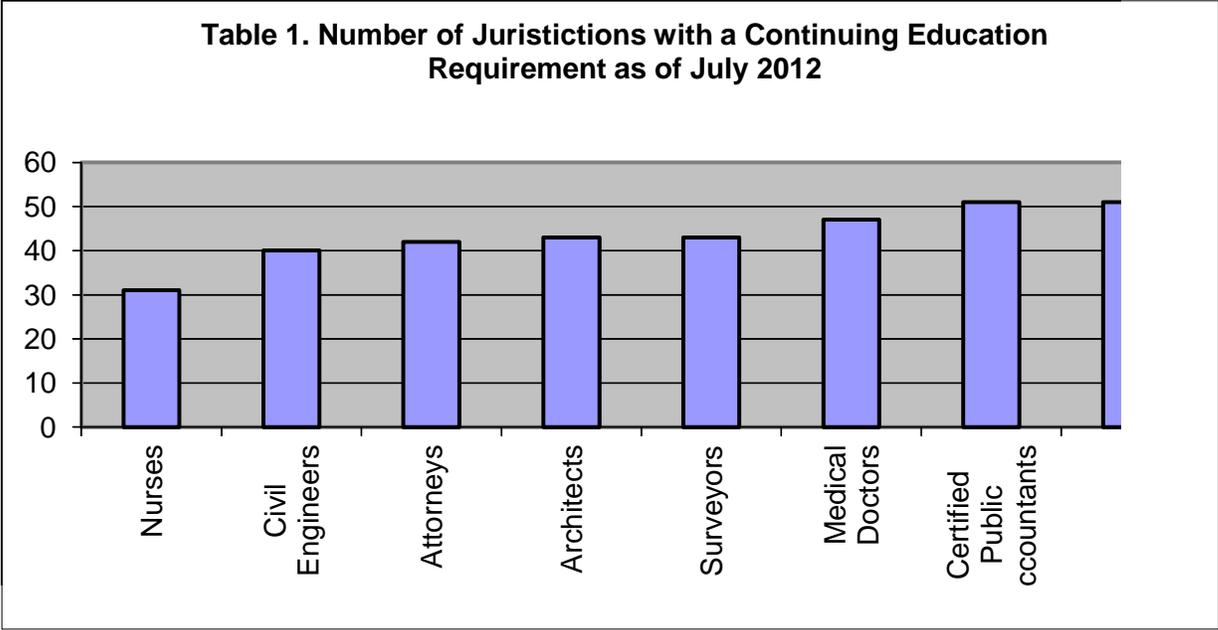
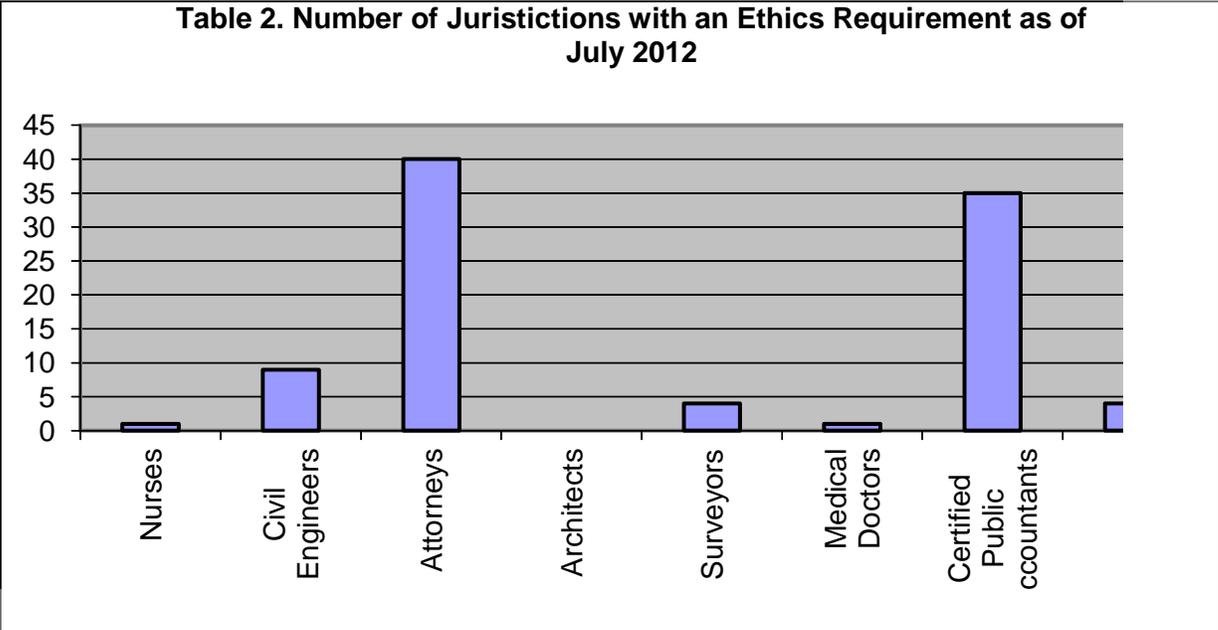


Table 2 presents the number of hours of ethics education required for each profession.



As can be seen, civil engineers lag behind in ethical requirements behind attorneys and CPAs even though our profession has a significant impact on society, as seen in recent infrastructure issues ranging from rural development to ground-breaking technology applications. In the past decade, however, ASCE’s Academies have established professional development hours on ethics as part of their membership requirements (see section II, subsection C, “2. ASCE Civil Engineering Certification”).

In addition to states and licensing bodies' requirements for continuing education, some professional societies have similar requirements for continued membership. On the national level, the American Institute of Architects (AIA)⁵ and American Institute of CPAs⁶ dictate the number of hours and content of the courses that their members must fulfill, similar to state requirements.

C. Examples of Standardized Requirements in Civil Engineering

1. National Council of Examiners for Engineering and Surveying (NCEES)

In 2008 NCEES released a revision to “Continuing Professional Competency Guidelines.” This document offers guiding principles for jurisdictions that require or are considering continuing education as a condition of licensure renewal.

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 can 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:

- 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, where contact with peers is thought to increase understanding of current topics, technical developments, and other educational opportunities
- Registering patents

2. 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 Direction created Civil Engineering Certification, Inc. (CEC) to provide a mechanism for the post-licensure certification of the various specialties within civil engineering. Specialty certification is a voluntary, post-license credential that provides recognition of advance expertise in a technical specialty, superior experience, strong ethics and a commitment to life-long learning and continuing professional development. To date, three Academies have been established within CEC. The Academies are 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 2009 (<http://www.asce.org/certification>).

Individuals certified by the academies have the designation of Diplomate. Each of the three academies encourages life-long 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.

IV. Recommendations for Civil Engineering

- A. *All states should have continuing education requirements to reinforce the credibility of the Civil Engineering profession.*
- Continuing education requirements in every US jurisdiction would raise the professional bar of civil engineering above all other professions evaluated.
 - A mandatory ethics component within continuing education requirements is an integral part of enhanced credibility. Ethics training is lacking in most professions, so this would differentiate and elevate civil engineering.
 - If Civil Engineers lose credibility, we lose trust. Enhanced professional credibility prevents interference by other professionals and legislative bodies into civil engineering decision making.
- B. *The number of hours and content of education programs should be standardized among various jurisdictions to enhance consistency of the profession and aid comity.*
- 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.
 - 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 understanding of a closely related specialty.
 - A combination of traditional and non-traditional educational activities should be acceptable. Such requirements could follow the NCEES or ASCE CEC model.
 - Additional requirements for special conditions per jurisdiction, such as dynamic and wind loading and permafrost, may be incorporated as needed to a standardized baseline.

V. 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 with ways to improve the requirements over time and allow for additional requirements per jurisdiction as needed.

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2. National Council of Examiners for Engineering and Surveying (NCEES), “Continuing Professional Competency Guidelines,” June 2008.
3. National Society of Professional Engineers (NSPE), “CE Requirements – Engineering – Updated June 2012,”
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4. American Society of Civil Engineers internal document, Jeffrey S. Russell and Brewer Stouffer, “Change Takes Time: The History of Licensure and Continuing Professional Competency,”
http://www.asce.org/uploadedFiles/Landing_Pages/Leadership_and_Management/The%20History%20of%20Licensure%20and%20Continuing%20Professional%20Competency_FINAL.pdf, July 2003.
5. AIA Mandatory Continuing Education,
<http://www.aia.org/education/ces/mcechart/AIAS074729>
6. AICPA Membership CPE Requirements Q & A
<http://www.aicpa.org/Membership/Requirements/CPE/Pages/default.aspx>
7. American Society of Civil Engineers Professional Specialty Certification
<http://www.asce.org/certification>

Appendices

1. List of CE Requirements by State
2. ASCE Policy Statement 425