

Rule #3

Baseline Requirements for Post-Licensure Certifications

Approved by the CEC Board of Direction 02 August 2021

Revisions approved by the CEC Board of Direction: 01 August 2022

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Rule applicability: Post-licensure Certifications

The baseline requirements apply to all specialty areas of civil engineering. When justified by a specialty area body of knowledge, the administrative unit (AU) responsible for that specialty area may determine that additional requirements are needed or that a requirement is not needed. If the former, that AU must develop a justification for the additional requirement specifically linked to the specialty area body of knowledge (SABOK) demonstrating how the additional requirement is the only means for an applicant to achieve the SABOK. If the latter, that AU must develop a justification for removing the requirement. The justification must be submitted to the CEC Board consideration and approval or rejection is final. The CEC Board may consult with organizations with expertise in the specialty area including, but not limited to, the appropriate ASCE Institute.

Preamble: The baseline requirements serve as the minimum levels of achievement for application to post-licensure board certification in any one of the civil engineering specialty areas for which board certification is available. Board certification in civil engineering represents attainment of the knowledge, skills, and attitudes needed for competent practice at the levels defined in the Civil Engineering Body of Knowledge (CEBOK3)¹ and further developed in the respective Specialty Area Bodies of Knowledge (SABOK).

1. Professional characteristics.
 - 1.1. Adherence to the ASCE Code of Ethics.
 - 1.2. Good communications skills.
 - 1.3. Demonstrated project management and/or leadership skills.
 - 1.4. Commitment to continuing education.
 - 1.5. Commitment to advancing the profession.
2. Education. Formal education in engineering and the specialty area supports achievement of the CE-BOK3 and specialty area body of knowledge.
 - 2.1. Applicants must have earned a baccalaureate degree in engineering or other related field from a program accredited by ABET. For candidates that have not earned a suitable baccalaureate degree, a post-graduate degree (Masters or

¹ Achievement in CEBOK3 outcomes for board certification are indicated in the attached tables F-5 and F-6.

PhD) in engineering or other relevant field from educational institutions of recognized standing can satisfy the education requirement.

- 2.2. Post-graduate education in engineering or other relevant fields from educational institutions of recognized standing is the typical pathway for demonstrating fulfillment of specific elements of the specialty area body of knowledge. Post-graduate education may include completion of a post-graduate degree (Masters or PhD), not less than 30 relevant post-graduate credit hours,² or an advanced certificate program recognized by the specialty certification board. Alternatively, this requirement may be satisfied by additional applicable work experience (see item 4.3).
3. Current PE license or approved equivalent relevant to the specialty area.^{3,4} If working - and with permanent residence - in a country without a PE license or approved equivalent, this requirement may be satisfied by additional applicable work experience (see item 4.4).
4. Work experience. Work experience may include planning, design, analysis, operations, management, governance, research, and/or teaching. The applicant must be currently actively engaged in the specialty area of civil engineering and have:
 - 4.1. A minimum of 10 years of progressively responsible post-BS work experience in civil engineering.⁵
 - 4.2. A minimum of 8 of the 10 years of progressively responsible post-BS work experience must be in the specialty area of civil engineering.
 - 4.3. If the applicant does not have post-graduate education per requirement 2.2, the applicant must have a minimum of 15 years of progressively responsible post-BS work experience within civil engineering and a minimum of 13 of the 15 years in the specialty area of civil engineering.
 - 4.4. If an applicant is working - and with permanent residence - in a country without a PE license or approved equivalent per requirement 3, the applicant must have a minimum of 15 years of progressively responsible post-BS work experience within civil engineering and a minimum of 13 of the 15 years in the specialty area of civil engineering.

² Continuing education units are not equivalent to post-graduate credit hours.

³ Practicing in a different jurisdiction after earning and maintaining a PE license or equivalent in another jurisdiction is acceptable as long as compliance with relevant laws and licensing requirements are met.

⁴ CEC will develop and maintain a list of approved equivalents. An initial list could build on work by AAWRE and include Australia (Pending), Canada, India, Korea (Pending), New Zealand (Pending), Philippines (Pending), Taiwan (Pending), United Kingdom (Pending), and the United States. The list can be in matrix form clearly showing which approved equivalents are accepted for which board certification.

⁵ Completion of an MS or PhD degree in engineering or other relevant fields from educational institutions of recognized standing counts for 1 or 3 years of work experience, respectively.

5. Validation. The applicable specialty board of trustees validates achievement of the requisite CEBOK3 and SABOK outcomes in a manner appropriate for the certification. Validation applies to all applicants and follows a uniform process for each certification developed and administered by the applicable specialty board.

The following two tables taken from the Civil Engineering BOK (version 3) represent levels of achievement in several outcomes. Those in white cells represent the levels needed for the professional practice of civil engineering (also referred to as “responsible charge”) as well as the typical pathways of achievement. The levels indicated in green cells represent the levels of achievement required for board certification. These levels would typically be obtained through experience or self-development.

Table F-5. The *Civil Engineering Body of Knowledge Cognitive Domain Typical Pathway to Achievement*.

Outcome	Cognitive Domain Level of Achievement					
	Level 1 Remember	Level 2 Comprehend	Level 3 Apply	Level 4 Analyze	Level 5 Synthesize	Level 6 Evaluate
Foundational Outcomes						
<i>Mathematics</i>	UG	UG	UG			
<i>Natural Sciences</i>	UG	UG	UG			
<i>Social Sciences</i>	UG	UG	UG			
<i>Humanities</i>	UG	UG	UG			
Engineering Fundamentals Outcomes						
<i>Materials Science</i>	UG	UG	UG			
<i>Engineering Mechanics</i>	UG	UG	UG			
<i>Experimental Methods and Data Analysis</i>	UG	UG	UG	PG	PG/E/SD	E/SD
<i>Critical Thinking and Problem Solving</i>	UG	UG	UG	ME	ME	E/SD
Technical Outcomes						
<i>Project Management</i>	UG	UG	ME	E/SD	E/SD	
<i>Engineering Economics</i>	UG	UG	ME			
<i>Risk and Uncertainty</i>	UG	UG	UG	ME	E/SD	
<i>Breadth in Civil Engineering Areas</i>	UG	UG	UG	ME		
<i>Design</i>	UG	UG	UG	ME	ME	
<i>Depth in a Civil Engineering Area</i>	UG	UG	PG	PG	ME	E/SD
<i>Sustainability</i>	UG	UG	UG	ME		

Table F-5. (Continued)

Outcome	Cognitive Domain Level of Achievement					
	Level 1 Remember	Level 2 Comprehend	Level 3 Apply	Level 4 Analyze	Level 5 Synthesize	Level 6 Evaluate
Professional Outcomes						
<i>Communication</i>	UG	UG	UG	ME	ME	
<i>Teamwork and Leadership</i>	UG	UG	UG	ME	ME	E/SD
<i>Lifelong Learning</i>	UG	UG	UG	ME	ME	E/SD
<i>Professional Attitudes</i>	UG	UG	ME	ME		
<i>Professional Responsibilities</i>	UG	UG	ME	ME	ME	
<i>Ethical Responsibilities</i>	UG	UG	ME	ME	ME	E/SD

Table F-6. The Civil Engineering Body of Knowledge Affective Domain Typical Pathway to Achievement.

Outcome	Affective Domain Level of Achievement				
	Level 1 Receive	Level 2 Respond	Level 3 Value	Level 4 Organize	Level 5 Characterize
Technical Outcome					
<i>Sustainability</i>	UG	UG	ME	SD	
Professional Outcomes					
<i>Communication</i>	UG	UG	ME	SD	
<i>Teamwork and Leadership</i>	UG	UG	ME	SD	SD
<i>Lifelong Learning</i>	UG	UG	ME	SD	SD
<i>Professional Attitudes</i>	UG	UG	ME	SD	SD
<i>Professional Responsibilities</i>	UG	UG	ME	SD	
<i>Ethical Responsibilities</i>	UG	UG	ME	ME	SD

Key: Undergraduate (UG), Post-graduate (PG), Mentored Experience (ME), Experience (E), Self-Directed (SD).