

**ASCE "Raise The Bar" Newsletter
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The ASCE Committee on Academic Prerequisites for Professional Practice (CAP³) has continued its efforts to raise the educational requirements for the future practice of civil engineering at the professional level (licensure). For more than a decade, ASCE has been presenting, discussing, and listening to many stakeholders. As a result, we have been progressively refining our proposed program to “raise the bar” in engineering education. The National Society of Professional Engineers (NSPE) and the National Academy of Engineering (NAE) have joined in this advocacy.



Below is a summary from each of our committees.

Second Edition of the Body of Knowledge (BOK) Committee

The committee continues to work hard via weekly conference calls and e-mail exchanges. The committee held its third face-to-face meeting in early August in Reston, VA. The committee initially recognized 30 different educational outcomes that people and or groups had identified as candidates for inclusion in the Second Edition of the Civil Engineering Body of Knowledge (BOK-2). In comparison, the First Edition includes 15 separate outcomes. The committee decided to divide up some of the original 15 outcomes, including the eleven outcomes from the EAC/ABET criteria (see <http://www.abet.org/forms.shtml>), in order to more thoroughly address some of the various current combinations of outcomes. For instance, Outcome #1, which is EAC/ABET Criteria 3(a), is “an ability to apply knowledge of mathematics, science and engineering.” This one statement resulted in 6 potential outcomes in the preliminary BOK-2 list. The list of 30 potential outcomes has been pared to 26 potential outcomes with the possibility of further paring and/or consolidation. For each of these potential outcomes, the committee has developed a rubric that characterizes the topic in the form of different levels of achievement according to Bloom’s Taxonomy. A subcommittee has been formed to look into how humanities and social sciences should be incorporated into the BOK. The committee remains on track to release the second edition of the BOK for broad distribution and comment in February of 2007. It is anticipated that the Second Edition of the BOK will be officially released in conjunction with Engineers’ Week on February 21, 2008, at the National Academy of Engineering (NAE). If you are interested in details about the committee, please contact Rich Anderson at Roapel@aol.com.

Licensure Committee

In 2005, the National Council of Examiners for Engineering and Surveying (NCEES) voted to incorporate the following language requiring additional engineering education into the *Model Law* and *Model Rules* no sooner than 2010:

Graduate with a Bachelor of Science degree from an engineering program of four years or more accredited by EAC/ABET, or equivalent, plus 30 additional credits from an approved course provider(s) in upper-level undergraduate or graduate-level coursework in professional practice and/or technical topic areas.

Later this month, NCEES will carefully consider incorporating the following language requiring additional engineering education into *Model Law* (Section 130.10):

Effective January 1, 2015, to be admitted to the principles & practice examination –

(1) An engineer intern with a bachelor’s degree, with an additional 30 credits of acceptable upper-level undergraduate or graduate-level coursework from approved course providers . . .

(2) An engineer intern with a master’s degree in engineering . . .

Accreditation Committee

The accreditation committee has prepared a new version of the civil engineering program criteria along with supporting commentary and advanced level general criteria. The basic level civil engineering program was unanimously passed by Engineering Accreditation Commission and consists of the following:

<p style="text-align: center;">Effective for Evaluations during the 2008-2009 Accreditation Cycle <u>PROGRAM CRITERIA FOR</u> <u>CIVIL</u> <u>AND SIMILARLY NAMED ENGINEERING PROGRAMS</u> (Passed by the Engineering Accreditation Commission of ABET [on first reading] on July 21-22, 2006)</p> <p><u>1. Curriculum</u> The program must demonstrate that graduates can apply knowledge of mathematics through differential equations, calculus-based physics, chemistry, and at least one additional area of science, consistent with the program educational objectives; can apply knowledge of four technical areas appropriate to civil engineering; can conduct civil engineering experiments and analyze and interpret the resulting data; can design a system, component, or process in more than one civil engineering context; can explain basic concepts in management, business, public policy, and leadership; and can explain the importance of professional licensure.</p> <p><u>2. Faculty</u> The program must demonstrate that faculty teaching courses that are primarily design in content are qualified to teach the subject matter by virtue of professional licensure, or by education and design experience. The program must demonstrate that it is not critically dependent on one individual.</p>
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The advanced level general criteria were also passed and include the following:

CRITERIA FOR ADVANCED LEVEL PROGRAMS

(Passed by the Engineering Accreditation Commission of ABET [on first reading] on July 21-22, 2006)

Advanced Level Programs must develop, publish, and periodically review educational objectives and program outcomes. The criteria for an advanced level program are fulfillment of the basic level general criteria, fulfillment of program criteria appropriate to the advanced level specialization area, and one academic year of study beyond the basic level. The program must demonstrate that graduates have an ability to apply advanced level knowledge in a specialized area of engineering related to the program area.

The commentary that supports the new basic level civil engineering program has been completed. It is an expanded version over the prior issue and will be a real help in implementing the new criteria. The commentary can be found on www.asce.org/raisethebar.

Curricula Committee II

Plans are being made to initiate the Curricula Committee II. The committee will likely begin with a workshop in the March to May 2007 timeframe and will work to review the second edition of the BOK.

Questions, comments, or suggestions, please contact Jeffrey S. Russell at russell@engr.wisc.edu