Society Supports Software Engineering PE Examination

The IEEE Computer Society, in conjunction with the IEEE-USA, recently announced its partnership with the National Council of Examiners for Engineering and Surveying (NCEES) in support of establishing a Principles and Practice of Engineering examination for the software engineering discipline. The new software engineering PE exam will not be part of the currently existing electrical and computer engineering PE examination and does not replace the current computer engineering module of that exam. The exact specifications of the new software engineering PE exam will be finalized in coming months.

IDENTIFYING A NEED

The NCEES is an organization comprising all engineering and surveying licensing boards in the US and several territories. NCEES develops, scores, and, for many states, administers examinations used for engineering licensure, including the current electrical and computer engineering PE examinations.

For the NCEES to consider initiating a PE examination in a new discipline, at least 10 state licensing boards must submit written requests that demonstrate a need for the examination in their jurisdictions. In addition, no new discipline may be added to the examination program unless there is an Engineering Accreditation Commission (EAC)/ABET (formerly the Accreditation Board for Engineering and Technology)-accredited program in that discipline. ABET is the accrediting agency for all engineering and technology programs in the United States, and the EAC is responsible for engineering programs in particular.

The IEEE-USA Licensure and Registration Committee reports that the amount of examination knowledge content overlap between the existing computer engineering PE examination and the new software engineering examination will be at most 20 percent, since the existing computer engineering examination contains a significant amount of content related to hardware and data communications networking.

SOFTWARE ENGINEERING LICENSURE

Software engineering licensure offers IEEE members in the US a credential that is available to virtually all other engineering disciplines, ranging from mainstream electrical, civil, mechanical, and chemical fields to smaller disciplines such as control systems, fire protection, nuclear power, and naval engineering. The majority of respondents to a 2008 survey conducted by the Computer Society indicated they were in support of licensing software engineers.

Over the past decade, there have been several efforts to establish professional practice licensure for software engineers. In the past, a primary reason that these efforts were not successful was a lack of infrastructure to support licensure in accordance with NCEES policy. Specifically, the absence of a reasonable number of EAC/ABET-accredited programs offering an undergraduate degree in software engineering posed a significant challenge. However, according to ABET, there are now 17 EAC/ABET-accredited software engineering programs in the US. Therefore, the only remaining hurdle facing software engineering licensure is the creation and administration of a software engineering PE examination.

ESTABLISHING REQUIREMENTS

The next phase of developing the exam is a process known as a Professional Activities and Knowledge Study. The PAKS process includes surveys and meetings with licensed engineers who practice software engineering and who will work to create a specification of the content for the software engineering licensure examination. A committee of software engineers will then develop exam questions under the auspices of NCEES. After NCEES receives the committee’s software engineering PE exam, each individual licensing board will decide whether or not it will license software engineers in its state or territory.

IEEE-USA will serve as the lead technical society sponsoring the examination, in cooperation with other organizations that include the IEEE Computer Society and the National Society of Professional Engineers.
MOORE ANSWERS SE LICENSING FAQS

With the advent of the licensing of software engineers in many states, a practicing software developer may wonder how his or her career will be affected. Mme’s James W. Moore, the 2009 IEEE Computer Society vice president for professional activities, answers some of those questions.

When will this happen?
Currently, it is estimated that the Principles and Practices exam for software engineering will become available in 2012.

Will my state license software engineers?
If your state is among the 10 states (Alabama, Delaware, Florida, Michigan, Missouri, New Mexico, New York, North Carolina, Texas, and Virginia) that requested the PE exam, it is likely that they will begin using it immediately for the purposes of licensing. Smaller states may fall in line quickly, while bigger states, with the resources to perform independent analysis, may delay adoption or pursue another course.

Will I be able to become licensed?
Each state has its own regulations for licensing, so no one answer is suitable for all. Many states require qualifications that include a BS in an ABET-accredited curriculum, successful completion of the Fundamentals of Engineering examination, verified experience (often four years), and the successful completion of a Principles and Practices exam. If you’ve already satisfied the first three requirements, then you may be a good candidate for licensure by sitting for the new exam.

Will all software developers need a software engineering license?
The principle behind licensing is to assure the public that those who claim expertise produce results that do not jeopardize public safety, health, and welfare. In the case of those working for sizable companies, the company’s resources absorb any liability, and the employees of that company generally do not need to be licensed. Only software engineers offering their services directly to the public would need to be licensed.

Will all software projects require licensed software engineers?
Many software projects would not require the services of licensed engineers. Only software that affects the health, safety, and welfare of the public would require oversight by a licensed engineer.

Will I be able to call myself a “software engineer” if I’m not licensed?
Many states have laws in place to protect words like “engineer” or “architect” (or “realtor” or “cosmetologist”). Typically, such laws state that you cannot offer your services to the public using such occupational titles unless you are appropriately licensed.

What if I practice outside the US?
None of this is likely to affect you unless you offer products or services to the US public.

Society Publications Seek Editors in Chief for 2011-2013 Terms

The IEEE Computer Society seeks applicants for the position of editor in chief, serving two-year terms starting 1 January 2011. Prospective candidates are asked to provide (as PDF files) a complete curriculum vitae, a brief plan for the publication’s future, and a letter of support from their institution or employer by 1 March 2010.

For more information on the search process and to submit application materials for the following titles, please contact Hilda Carman (hcarman@computer.org) or Kathleen Henry (khenry@computer.org).

IEEE Transactions on Computers
IEEE Transactions on Visualization and Computer Graphics

QUALIFICATIONS AND REQUIREMENTS
Candidates for any Computer Society editor-in-chief position should possess a good understanding of industry, academic, and government aspects of the specific publication’s...
field. In addition, candidates must demonstrate the managerial skills necessary to process manuscripts through the editorial cycle in a timely fashion. An editor in chief must be able to attract respected experts to the publication’s editorial board. Major responsibilities include

- soliciting high-quality manuscripts from potential authors and, with support from publication staff, helping these authors get their manuscripts published;
- identifying and appointing editorial board members, with the concurrence of the Publications Board;
- selecting competent manuscript reviewers, with the help of editorial board members, and managing timely reviews of manuscripts;
- directing editorial board members to seek special-issue proposals and manuscripts in specific areas;
- providing a clear, broad focus through promotion of personal vision and guidance where appropriate; and
- resolving conflicts or problems as necessary.

Applicants should possess expertise recognized by the computer science and engineering community and must demonstrate clear employer support.

**REAPPOINTMENTS**

Other IEEE Computer Society publications have editors in chief who are currently standing for reappointment to a second two-year term. The IEEE Computer Society Publications Board invites comments upon the tenures of the individual editors.

Editors in chief standing for reappointment to terms in 2011-2012 are

- Isabel Beichl, *Computing in Science & Engineering*;
- Fei-Yue Wang, *IEEE Intelligent Systems*;
- Beng Chin Ooi, *IEEE Transactions on Knowledge & Data Engineering*;
- Ramin Zabih, *IEEE Transactions on Pattern Analysis & Machine Intelligence*; and

Send comments to Hilda Carman (hcarman@computer.org) or Kathleen Henry (khenry@computer.org).

Four top computer professionals will begin terms in January as editors in chief of IEEE Computer Society publications. Kevin Skadron will assume the post of EIC of *IEEE Computer Architecture Letters*. Skadron cofounded CAL in 2001. He has served on the University of Virginia’s computer science faculty since 1999 and served as a visiting professor for Nvidia Research.

Skadron holds a PhD in computer science from Princeton University, and has authored or coauthored more than 100 peer-reviewed articles. He is an associate editor for *IEEE Micro*.

Bashar Nuseibeh takes over as the new EIC of *IEEE Transactions on Software Engineering*. Nuseibeh received a PhD in software engineering from Imperial College London and is a professor of computing at the UK’s Open University and a visiting professor at Imperial College London and the National Institute of Informatics in Japan.

Nuseibeh currently serves on the editorial boards of the *Requirements Engineering Journal* and several other international journals.

Ivan Stojmenovic, a professor of information technology and engineering at the University of Ottawa, was recently named EIC of *IEEE Transactions on Parallel and Distributed Systems*. He holds a PhD in mathematics from the University of Novi Sad and the University of Zagreb.

Stojmenovic, an IEEE Fellow, has published more than 250 papers and edited four books on wireless ad hoc and sensor networks and applied algorithms.

Ravi Sandhu is the incoming EIC of *IEEE Transactions on Dependable and Secure Computing*. Sandhu, who received a PhD in computer science from Rutgers University, is the founding executive director of the Institute for Cyber Security at the University of Texas at San Antonio.

Sandhu has written more than 180 technical papers, is the founding editor in chief of *ACM Transactions on Information and System Security*, and serves as chair of ACM Sigsac.