We are coming to the end of an era concerning the examination for licensure as a professional engineer. The Principles and Practice of Engineering (PE) Examination for Electrical Engineering will be administered in its current format for the last time in October of 2001. Currently the candidate must select four out of twelve essay problems in the morning section and four out of twelve groups of multiple-choice problems in the afternoon section of the examination. Also, the content of the examination is based on a survey of knowledge areas needed by practicing engineers over ten years ago. Some engineers today claim that the examination is not relevant for them. All of this is about to change!

In April 2002, a new PE examination will be given. It will even have a new name, “Electrical and Computer Engineering Examination.” The entire examination will have multiple-choice questions, forty in the morning and forty in the afternoon. The morning module will consist of questions covering the breadth of the field of Electrical and Computer Engineering. For the afternoon, a candidate will select one of three different depth modules: Computer Engineering Depth Module; Electronics, Control, and Communication Engineering Depth Module; and Power Engineering Depth Module. In all a candidate will answer eighty questions. The only choice that a candidate has is which afternoon module to take. The eighty questions are no longer arranged in groups of ten. Each question stands alone and is designed to be answered by a successful candidate in about six minutes.

The Computer Engineering Depth Module is entirely new. Such topics do not exist on the current examination. It is hoped that this module will appeal to computer engineers seeking licensure. Even the new name was for their benefit. “By changing the name of the exam, we are identifying to computer engineers that this is their exam for licensure,” said Aaron Collins, Ph.D., P.E., and Chair of the NCEES Electrical Subcommittee.

The following is a list of the topics to be covered in each of the four modules with the approximate percentage for each topic.

I. Breadth Module (AM)
   A. Basic Electrical Engineering 22%
      1. Professionalism and Engineering Economics
      2. Safety and Reliability
      3. Electric Circuits
      4. Electric and Magnetic Field Theory and Applications
      5. Digital Logic
   B. Electronics, Electronic Circuits and Components 10%
      1. Components
      2. Electrical and Electronic Materials
   C. Controls and Communications Systems 8%
   D. Power 10%
      1. Transmission and Distribution
      2. Rotating Machines and Electromagnetic Devices

II. Computer Engineering Module (PM)
A. General Computer Systems 5%
   1. Interpretation of Codes and Standards
   2. Microprocessor Systems

B. Hardware 22%
   1. Digital Electronics
   2. Design and Analysis
   3. Systems

C. Software 18%
   1. System Software
   2. Development/Applications

D. Networks 5%

III. Electronics, Control, and Communication Engineering Module (PM)

A. General Electrical Engineering Knowledge 5%
   1. Measurement and Instrumentation
   2. Interpretation of Codes and Standards
   3. Computer Systems

B. Electronics 18%
   1. Electric Circuit Theory
   2. Electric and Magnetic Field Theory and Applications
   3. Electronic Components and Circuits

C. Controls 12%
   1. Control System Fundamentals
   2. Control System Design/Implementation
   3. Stability

D. Communications 15%
   1. Communications and Signal Processing
   2. Noise and Interference
   3. Telecommunications

IV. Power Engineering Module (PM)

A. General Power Engineering 7%
   1. Measurement, Instrumentation and Statistics
   2. Special Applications
   3. Codes and Standards

B. Circuit Analysis 14%
   1. Analysis
   2. Devices and Power Electronic Circuits
   3. Electric and Magnetic Fields and Applications

C. Rotating Machines and Electromagnetic Devices 14%
   1. Rotating Machines
   2. Electromagnetic Devices

D. Transmission and Distribution 15%
   1. System Analysis
   2. Power System Performance
   3. Protection