ENGINEERING LICENSURE

From Point A to P.E.

Washington Board of Registration for PE & LS
George Twiss, PLS, Executive Director
Michael Villnave, PE, Deputy Exec. Director

NCEES
advancing licensure for engineers and surveyors

Into the great unknown

- Do you know what you'll do when you graduate?
- Where do you see yourself in five years?
- What about 10 years? 20? 30?

It's about showing what you can do

- What do hiring firms look for?
- Degrees, work references, technical skills
- What if there were a universal standard that is recognized throughout the profession?

$$F = pA = 706E3\left(.152\right)^2\pi = 12,696$$

$$\frac{12,696}{8} = 827E6\left(\frac{\pi d^2}{4}\right)(.2) = 1587 = 12$$

$$d = 3.5\ mm = 0.35cm \approx$$

Licensure: a universal standard

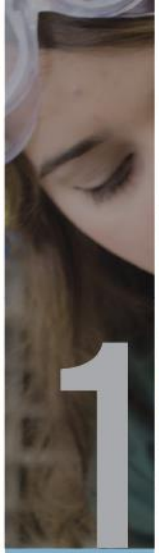
- "[Engineering] licensure is crucial for career advancement and top pay." –*U.S. News & World Report*
- Think about other professions:
  - Why do we license professionals?

The P.E. license

- A professional engineer
  - Has the education, experience, and technical knowledge to lead
  - Has the respect of the public's trust and confidence
  - Has an obligation to protect the public

3 steps

Getting from point A to P.E.



1 Education

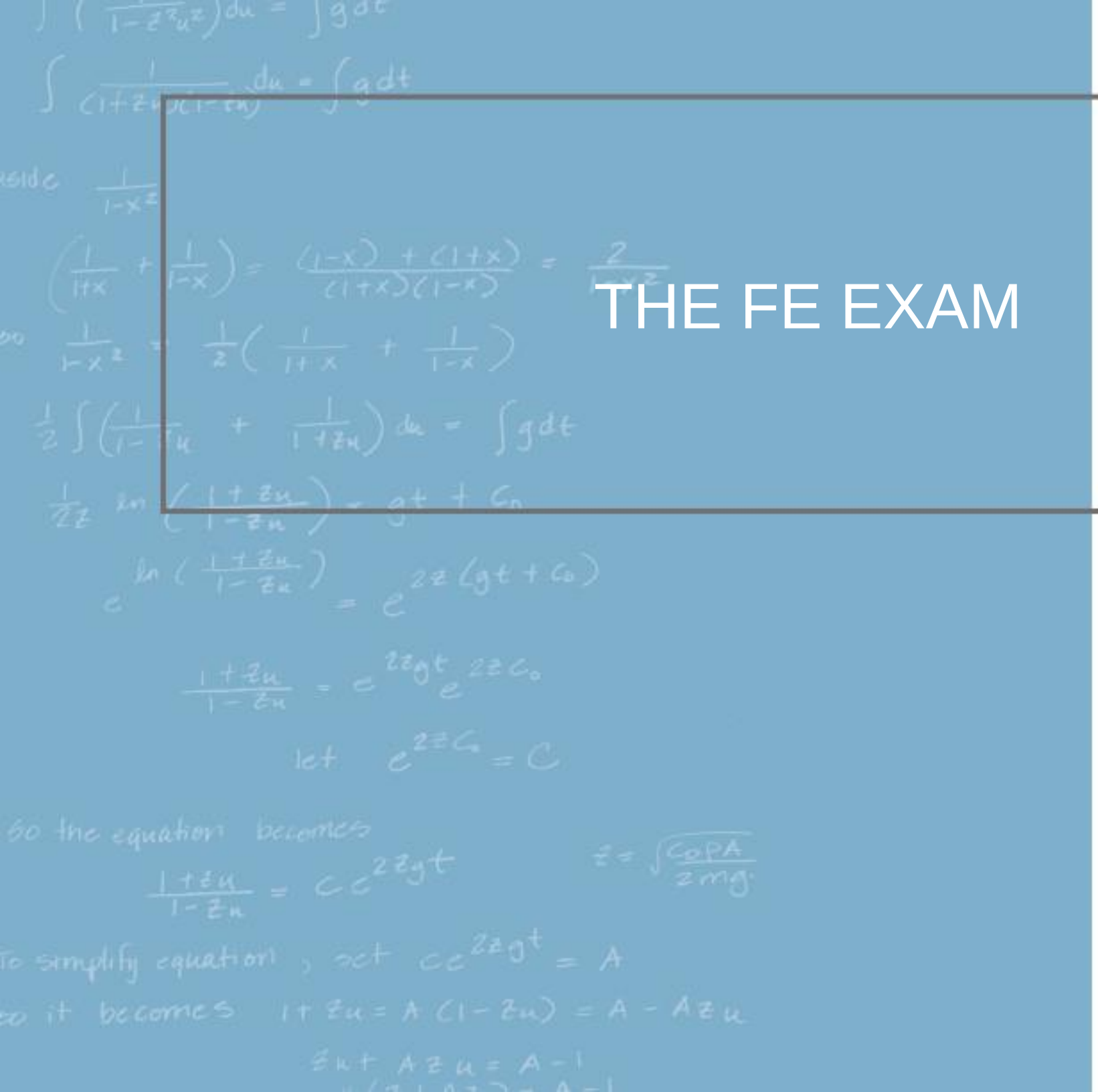
- Get an engineering degree from an accredited program.
  - – Bachelor's or master's (or both)
  - – The Engineering Accreditation Commission of ABET
    accredits college engineering programs.
- In Washington a degree is not a requirement for licensure but it is the best way.

- Work under the supervision of a P.E. is desirable but not always required.
- Four years showing progressive levels of responsibility and decision making after degree.

3 Exams

- ☐ Pass the Fundamentals of Engineering exam in your senior year of college (or shortly after graduation).
- ☐ Pass the PE exam in your engineering discipline after aquiring additional four years of experience.

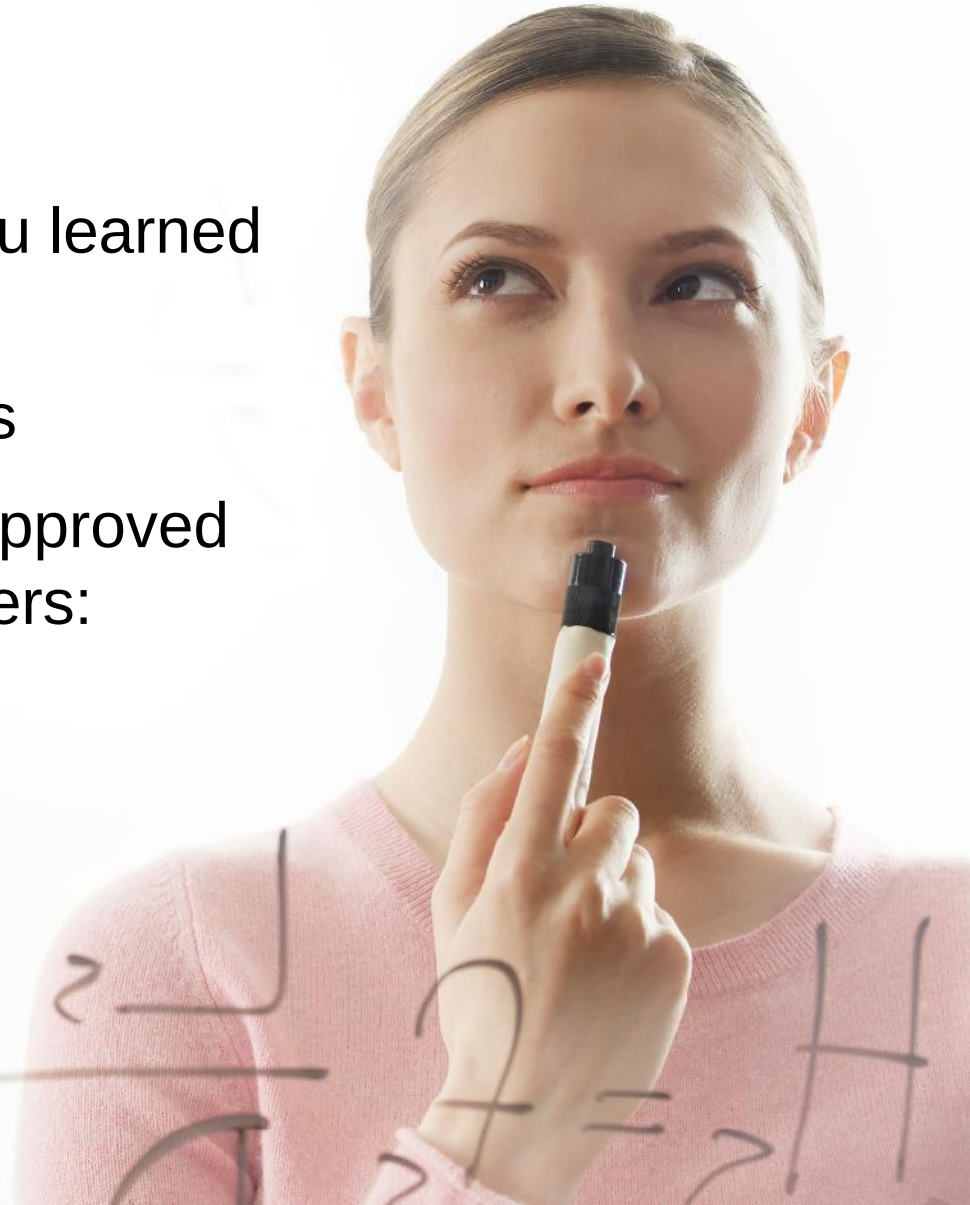
THE FE EXAM



NCEES

FE exam

- Fundamentals: what you learned in college
- Computer-based exams
- Offered year-round at approved Pearson VUE test centers:
  - Washington State:
    - Spokane
    - Seattle (2)
    - Yakima



FE exam
format and content

- 7 freestanding discipline-specific exams
  - Chemical, Civil, Computer and Electrical, Environmental, Industrial, Mechanical, Other Disciplines
- 110 multiple-choice questions
- Exam specifications (what's on the exam)
  - Available at ncees.org/exams
- *FE Reference Handbook*
- Practice exams

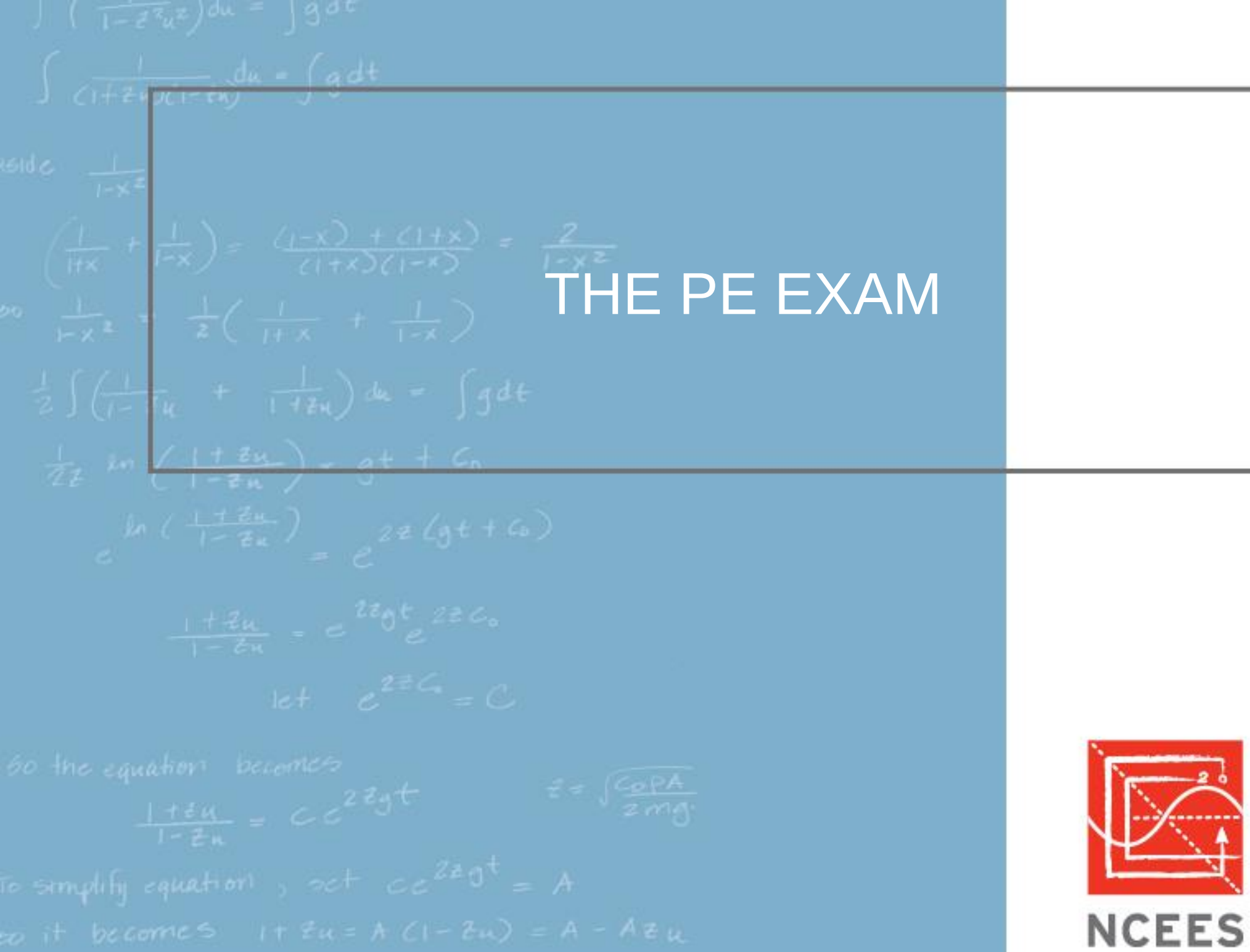
FE Electrical and Computer exam: Knowledge areas and number of questions

- Mathematics 11–17
- Probability and Statistics 4–6
- Ethics and Professional Practice 3–5
- Engineering Economics 3–5
- Properties of Electrical Materials 4–6
- Engineering Sciences 6–9
- Circuit Analysis (DC and AC Steady State) 10–15
- Linear Systems 5–8
- Signal Processing 5–8
- Electronics 7–11
- Power 8–12
- Electromagnetics 5–8
- Control Systems 6–9
- Communications 5–8
- Computer Networks 3–5
- Digital Systems 7–11
- Computer Systems 4–6
- Software Development 4–6

FE exam administration

- Approved Pearson VUE test centers
- Year-round testing windows
  - January/February, April/May, July/August, October/November
- 6-hour exam appointment, which includes
  - Nondisclosure agreement (2 minutes)
  - Tutorial (8 minutes)
  - Exam (5 hours and 20 minutes)
  - Scheduled break (25 minutes)
  - Brief survey

THE PE EXAM



NCEES

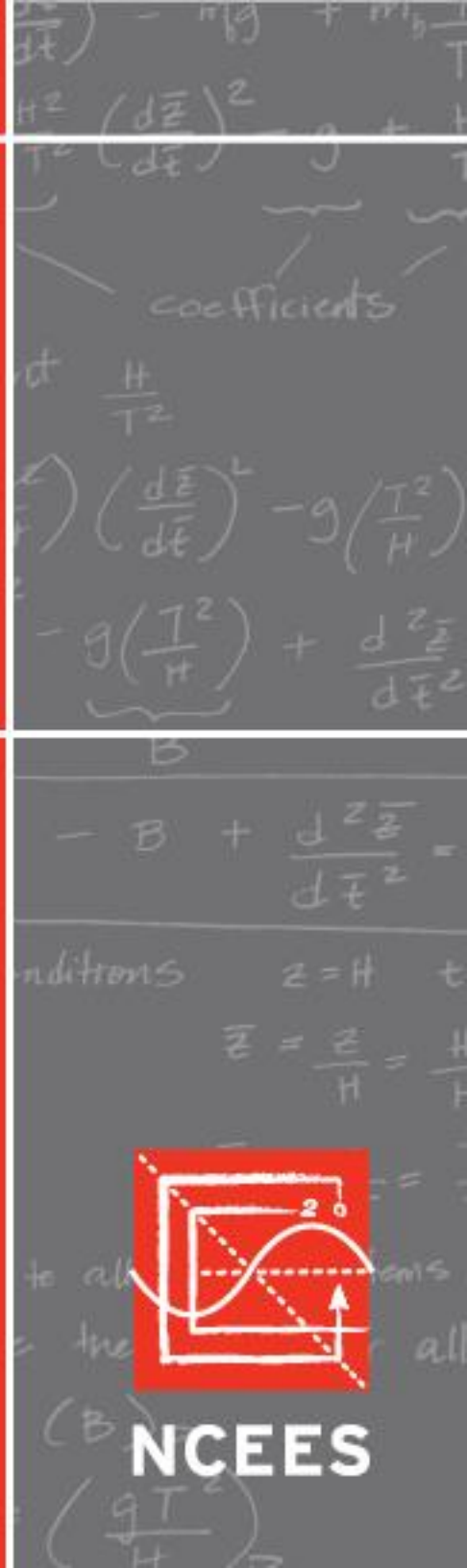
The PE exam: the final step

- Reflects real-world practice
- Developed by your peers
- Tests for minimal competency
- Find specifications and study materials at ncees.org/exams.
- Open-book: reference materials permitted

PE Electrical and Computer exam

- 8-hour exam
- Morning breadth, afternoon depth
- Choose your afternoon module:
  - Computer Engineering
  - Electrical and Electronics
  - Power
- Download specifications online at ncees.org/exams/pe-exam.

WHAT'S NEXT?



Washington State Board of Registration For Professional Engineers and Land Surveyors.

- Web: http://www.dol.wa.gov/business/engineerslandsurveyors/
- Email: Engineers@dol.wa.gov
- Phone: 360-664-1575
- Fax: 360-664-2551
- Street Address: 405 Black Lake Blvd., Olympia, 98507
- Mailing Address: PO Box 9025, Olympia, 98507-9025

The National Council of Examiners for Engineering and Surveying

- Web: ncees.org
- Phone: 800-250-3196
- Fax: 864-654-6033
- Street Address: 280 Seneca Creek Road,
  Clemson, South Carolina 29678
- Mailing Address: P.O. Box 1686
  Clemson, South Carolina 29633

Mobility of Licensure

- Once licensed a new world opens up.
- The US PE license is mobile; state to state and beyond.
- Most states have the same or very similar requirements.

  Washington:

  8 years of progressive experience (including education)

  Passage of PE and FE exams

  Completed application and fee

The big picture

- It’s tough–for a reason.
- Keep your eye on the target.
- There are resources that can help you get there.

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