

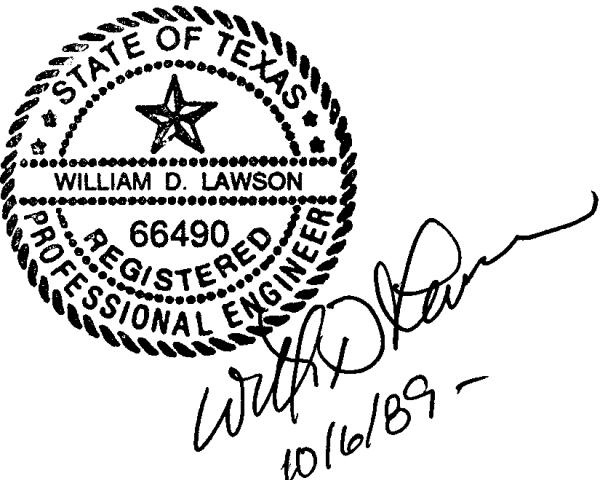
Getting Licensed

"Setting the Standard"

William D. Lawson, PE, PhD, D.GE, F.NSPE
CE 4200-001/D01
Spring 2022 Semester

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STATE OF TEXAS
WILLIAM D. LAWSON
66490
REGISTERED
PROFESSIONAL ENGINEER

William D. Lawson
10/16/89

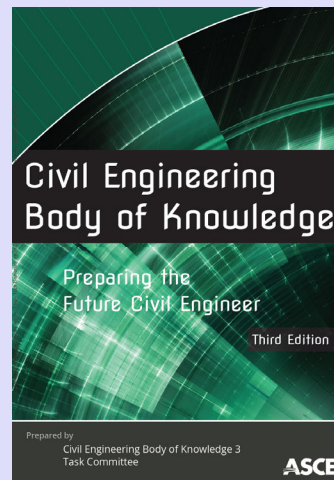
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CEBOK3 Topic 20

"Professional Responsibilities"

- The "Professional" outcomes
- pp. 57-60



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Professional Responsibilities

Table 2-20a. Professional Responsibilities (Cognitive Domain).

Cognitive Domain Level of Achievement	Demonstrated Ability	Typical Pathway
1 Remember (remember previously learned material)	Identify professional responsibilities relevant to the practice of civil engineering, including safety, legal issues, licensure, credentialing, and innovation.	Undergraduate education
2 Comprehend (grasp the meaning of learned material)	Explain professional responsibilities relevant to the practice of civil engineering, including safety, legal issues, licensure, credentialing, and innovation.	Undergraduate education
3 Apply (use learned material in new and concrete situations)	Apply professional responsibilities relevant to the practice of civil engineering, including safety, legal issues, licensure, credentialing, and innovation.	Mentored experience
4 Analyze (break down learned material into its component parts so that its organizational structure may be understood)	Illustrate professional responsibilities relevant to the practice of civil engineering, including safety, legal issues, licensure, credentialing, and innovation.	Mentored experience
5 Synthesize (put learned material together to form a new whole)	Integrate professional responsibilities relevant to the practice of civil engineering, including safety, legal issues, licensure, credentialing, and innovation.	Mentored experience
6 Evaluate (judge the value of learned material for a given purpose)	Assess the integration of professional responsibilities relevant to the practice of civil engineering, including safety, legal issues, licensure, credentialing, and innovation.	

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Table 2-20b. Professional Responsibilities (Affective Domain).

Affective Domain Level of Achievement	Demonstrated Ability	Typical Pathway
1 Receive (be aware of, willing to receive, and be attentive to a particular phenomenon or behavior)	Acknowledge professional responsibilities relevant to the practice of civil engineering including safety, legal issues, licensure, credentialing, and innovation.	Undergraduate education
2 Respond (actively participate in activity, attend to task, react to motivation)	Examine professional responsibilities relevant to the practice of civil engineering including safety, legal issues, licensure, credentialing, and innovation.	Undergraduate education
3 Value (attach value to particular object, phenomenon, or behavior)	Value professional responsibilities relevant to the practice of civil engineering including safety, legal issues, licensure, credentialing, and innovation.	Mentored experience
4 Organize (sort values into priorities by contrasting different values, resolve conflicts between them, and creating a unique value system)	Form judgments about professional responsibilities relevant to the practice of civil engineering including safety, legal issues, licensure, credentialing, and innovation.	Self-developed
5 Characterize (follow a value system that controls behavior that is pervasive, consistent, predictable, and a defining characteristic)	Advocate for professional responsibilities relevant to the practice of civil engineering including safety, legal issues, licensure, credentialing, and innovation.	

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Fact or Fiction?

1. Just like auctioneers, barbers, computer programmers, doctors, funeral directors, massage therapists, plumbers and water well drillers, engineers in Texas are required to be licensed professionals.

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Fact or Fiction?

2. Construction contractors rightly discourage their civil engineering graduate employees from taking and passing the FE Exam because they don't want the additional legal responsibility (risk) associated with engineering.

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Fact or Fiction?

3. Specialty engineering certification – *beyond* the "Professional Engineer (PE) credential – in certain engineering disciplines, such as structural (SE) or geotechnical (GE), is widely available in the United States.

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Getting Licensed

"Setting the Standard"

- Texas Tech COE Policy on Licensure
- About Licensing
 - » U.S. Engineering Licensing Process
 - » Licensing Jurisdictions
 - » Origins of Licensing
- Texas Engineering Practice Act
 - » Licensing Requirements
 - » Eligibility
 - » Branches of Engineering
- Why Get Licensed?

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POLICY

Texas Tech University College of Engineering

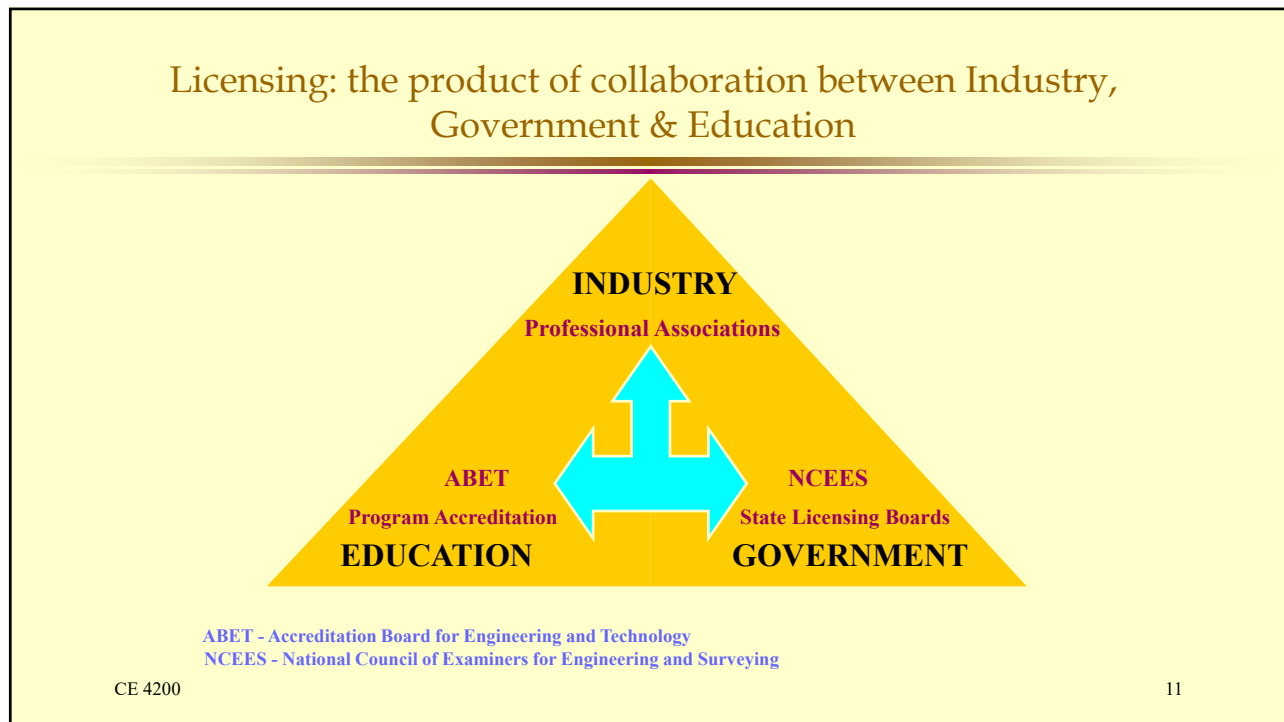
"The College of Engineering encourages our engineering students to graduate with their engineering degrees and become licensed professional engineers."

-Fundamentals of Engineering Exam Initiative
August 31, 1999

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Engineering Licensing Jurisdictions - United States -

- All 50 states plus the District of Columbia, Guam, Puerto Rico, Northern Marianas Islands, Marshall Islands and Virgin Islands
- ≈ 400,000 Licensed Engineers (U.S. Engineering Population ≈ 2,000,000)
- Wyoming Enacted First Licensing Law in 1907
- Montana Last State to Enact Licensing (1947)

Source: "NSPE Grows as State Licensure Laws Spread,"
Engineering Times, Vol. 16, No. 2, February, 1994.

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Origins of Licensing

- **Roots Contained in Social Reform Movement (early 1900's)**
 - » "experts with training, experience and ability should run the public's business"
- **First State Engineering Registration Law Drafted by Wyoming State Engineer**
 - » Response to lawyers, notaries and others making maps required for state water use permits and signing them as engineers and surveyors.
- **American Society of Civil Engineers, and Other Professional Groups, Originally a Lukewarm Supporter of Licensing**
 - » Claimed ASCE Membership Sufficient to Ensure Public Protection
- **Texas Registration Law Passed in 1937 After Disaster that Killed 294 People**
- **Underlying Rationale Was, and Still Is, Protecting Public Health and Safety**

* Judd, Dennis R., "The Reform Legacy," Chapter 4, pg. 97, *The Politics of American Cities: Private Power and Public Policy*, Scotts Foresman & Co., 1988.

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New London School Disaster



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Texas Engineering Practice Act & Rules

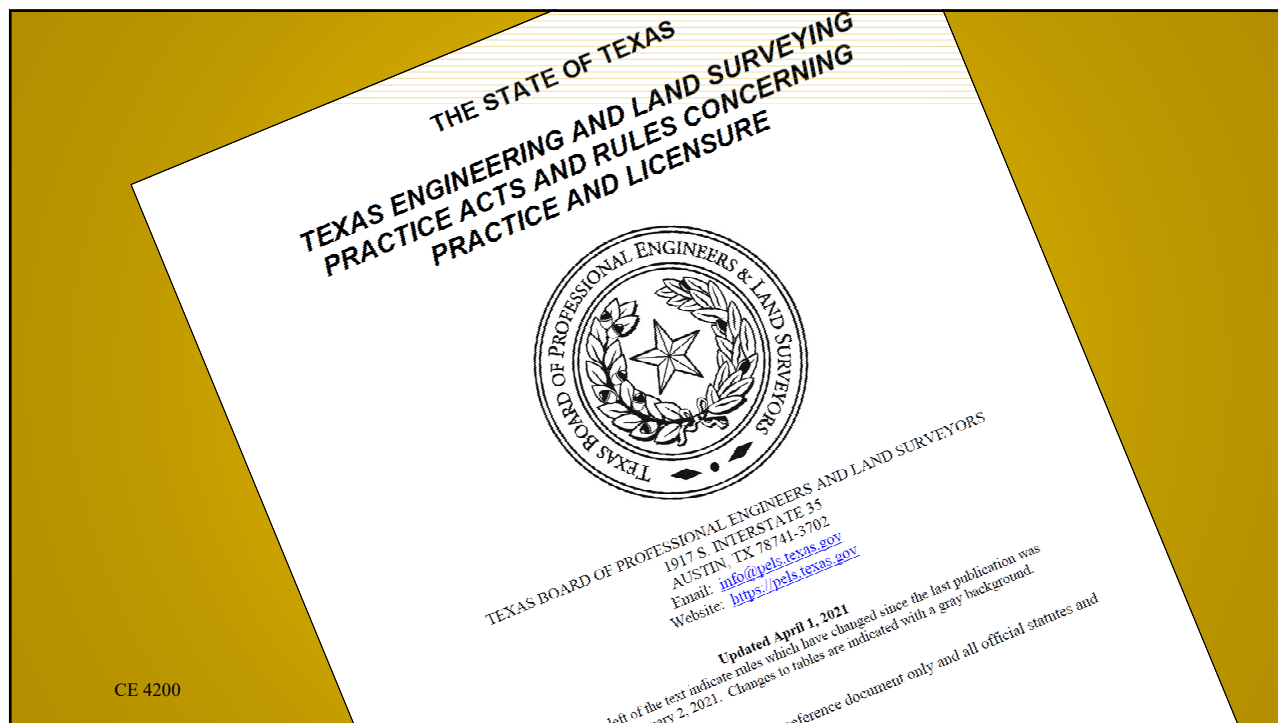


- The Texas Engineering Practice Act and Rules, among other things, establish the provisions for the practice of engineering in the State of Texas, including licensure.
- Consists of
 - » The Texas Engineering Practice Act
 - » Board Rules Concerning the Practice of Engineering...

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Licensure Requirements

Texas Engineering Practice Act

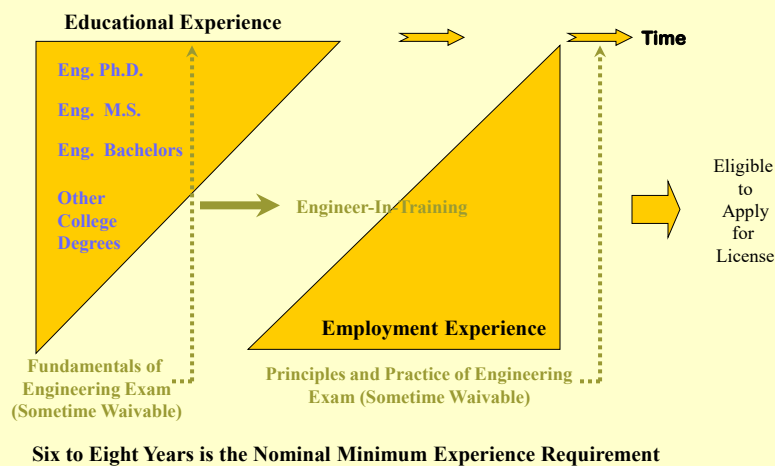
- Application to the TBPELS
- References
- Engineering Experience
 - » Supplementary Experience Record
- Education
- Examinations
 - » Fundamentals of Engineering Exam
 - » Principles and Practice of Engineering Exam

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Licensing Eligibility Based on Educational and Employment Experience



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"Typical" Requirements for Tech Students *Texas Engineering Practice Act*

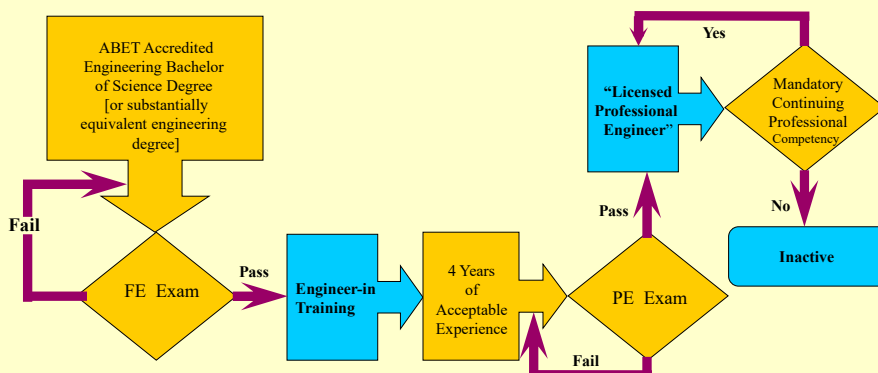
- Degree from ABET-accredited program (BS)
- NCEES Fundamentals of Engineering Exam
- Engineer-in-Training Internship (4 yrs)
- Application for Licensure
 - » References
 - » SER
 - » etc.
- NCEES Principles and Practices of Engineering Exam
- Licensure!

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Idealized Engineering Licensure Model



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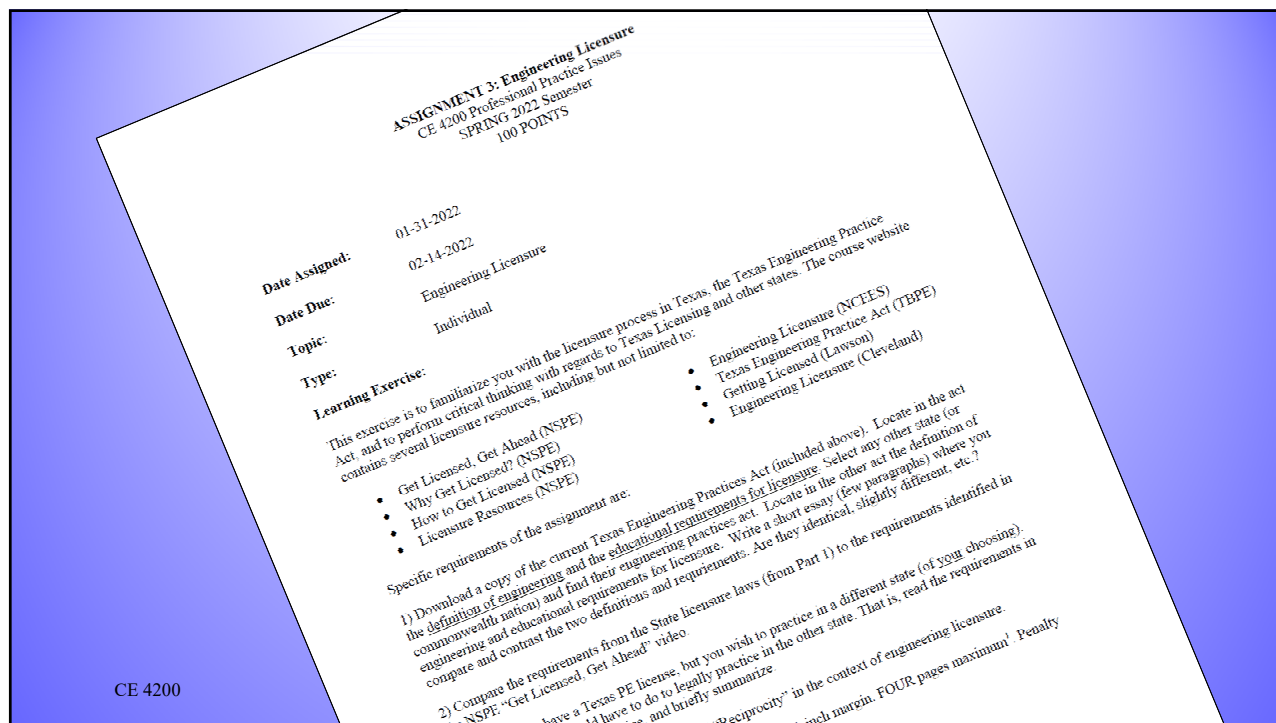
Recognized Branches of Engineering Texas Engineering Practice Act

- Aeronautical
- Agricultural
- Architectural
- Biomedical
- Ceramic
- Chemical
- Civil
- Control systems
- Electrical, electronic, computer, communications
- Engineering sciences/ general
- Environmental
- Fire protection
- Geological
- Industrial
- Manufacturing
- Mechanical
- Metallurgical
- Mining/mineral
- Naval architecture/ marine engineering
- Nuclear
- Ocean
- Petroleum
- Sanitary
- Software
- Structural
- Textile
- Welding
- Other

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ASSIGNMENT 3: Engineering Licensure
CE 4200 Professional Practice Issues
SPRING 2022 Semester
100 POINTS

Date Assigned: 01-31-2022
Date Due: 02-14-2022
Topic: Engineering Licensure
Type: Individual

Learning Exercise:
This exercise is to familiarize you with the licensure process in Texas, the Texas Engineering Practice Act, and to perform critical thinking with regards to Texas Licensing and other states. The course website contains several licensure resources, including but not limited to:

- Get Licensed, Get Ahead (NSPE)
- Why Get Licensed? (NSPE)
- How to Get Licensed (NSPE)
- Licensure Resources (NSPE)
- Engineering Licensure (NCEES)
- Texas Engineering Practice Act (TBPE)
- Getting Licensed (Lawson)
- Engineering Licensure (Cleveland)

Specific requirements of the assignment are:

- 1) Download a copy of the current Texas Engineering Practices Act (included above). Locate in the act the definition of engineering and the educational requirements for licensure. Select any other state (or commonwealth/nation) and find their engineering practice act. Locate in the other act the definition of engineering and educational requirements for licensure. Write a short essay (few paragraphs) where you compare and contrast the two definitions and requirements. Are they identical, slightly different, etc.?
- 2) Compare the requirements from the State licensure laws (from Part 1) to the requirements identified in the NSPE "Get Licensed, Get Ahead" video.
Do you have a Texas PE license, but you wish to practice in a different state (of your choosing). What would have to do to legally practice in the other state. That is, read the requirements in the NSPE "Get Licensed, Get Ahead" video.
"Reciprocity" in the context of engineering licensure.
Include margin. FOUR pages maximum! Penalty

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Why Get Licensed?

The Esoteric and the Practical

- On the esoteric side...
 - » Professional *identity*... the "mark of a professional"
 - » Enhanced *status* in the eyes of the public
 - » Indicator of *dedication* to integrity, hard work, and creativity
 - » Assurance that the individual engineer has passed at least a minimum screen of *competence*

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Why Get Licensed?

The Esoteric and the Practical

- Some practical considerations
 - Prepare, sign and seal, and submit engineering plans to a public authority
 - Career paths
 - Consulting engineer
 - Advancement government engineering positions
 - Individuals teaching engineering must be licensed
 - Industry has heightened public attention concerning product safety, environmental issues, and design defects
 - Military engineers must have the credentials to advance
 - Engineers must adapt to a rapidly changing workplace

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For Further Information

- Texas Board of Professional Engineers and Land Surveyors
 - » <https://engineers.texas.gov/>
- National Society of Professional Engineers
 - » www.nspe.org
- National Council of Examiners for Engineers and Surveyors
 - » www.ncees.org

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Questions?

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