NCEES
advancing licensure for engineers and surveyors

Fundamentals of Engineering (FE)
CHEMICAL CBT Exam Specifications

Effective Beginning with the January 2014 Examinations

- The FE exam is a computer-based test (CBT). It is closed book with an electronic reference.
- Examinees have 6 hours to complete the exam, which contains 110 multiple-choice questions. The 6-hour time also includes a tutorial and an optional scheduled break.
- The FE exam uses both the International System of Units (SI) and the US Customary System (USCS).

Knowledge	Number of Questions
1. Mathematics	**8–12**
A. Analytic geometry	
B. Roots of equations	
C. Calculus	
D. Differential equations	
2. Probability and Statistics	**4–6**
A. Probability distributions (e.g., discrete, continuous, normal, binomial)	
B. Expected value (weighted average) in decision making	
C. Hypothesis testing	
D. Measures of central tendencies and dispersions (e.g., mean, mode, standard deviation)	
E. Estimation for a single mean (e.g., point, confidence intervals)	
F. Regression and curve fitting	
3. Engineering Sciences	**4–6**
A. Applications of vector analysis (e.g., statics)	
B. Basic dynamics (e.g., friction, force, mass, acceleration, momentum)	
C. Work, energy, and power (as applied to particles or rigid bodies)	
D. Electricity and current and voltage laws (e.g., charge, energy, current, voltage, power, Kirchhoff, Ohm)	
4. Computational Tools	**4–6**
A. Numerical methods and concepts (e.g., convergence, tolerance)	
B. Spreadsheets for chemical engineering calculations	
C. Simulators	
5. Materials Science	**4–6**
A. Chemical, electrical, mechanical, and physical properties (e.g., effect of temperature, pressure, stress, strain)	
B. Material types and compatibilities (e.g., engineered materials, ferrous and nonferrous metals)	
C. Corrosion mechanisms and control	