

**NCEES PRINCIPLES AND PRACTICE OF SURVEYING (PS)
EXAM SPECIFICATIONS**

Effective Beginning with the October 2005 Examinations

- The exam is a 6-hour open-book exam. It contains 67 multiple-choice questions in the 4-hour morning session, and 33 multiple-choice questions in the 2-hour afternoon session. Examinee works all questions.
- The exam uses the US Customary System (USCS) of units.

Knowledge	Approximate Percentage of the Examination
I. Standards and Specifications	15%
A. Federal statutes, laws, rules and regulations	
B. U.S. Public Land Survey System	
C. U.S. National Map Accuracy Standards	
D. ALTA/ACSM Surveys	
E. Geodetic control network and mapping accuracy standards	
F. FEMA	
II. Legal Principles	25%
A. Common/case law boundary principles	
B. Sequential and simultaneous conveyances	
C. U.S. Public Land Survey System	
D. Controlling elements in legal descriptions	
E. Riparian and littoral rights	
F. Property title issues (e.g., encumbrances, interpretation, deficiencies)	
G. Sovereign land rights (e.g., navigable waters, eminent domain)	
H. Prescriptive rights/adverse possession	
I. Easement rights	
J. Parol evidence	
III. Professional Survey Practices	30%
A. Research	8%
1. Public/private record sources	
2. Project planning (e.g., photogrammetric, geodetic, boundary)	
3. Control datums and easement rights	
4. Control network accuracy standards	
B. Field Procedures	8%
1. Instrument operations and usage	
2. Monumentation (e.g., identification, classification, perpetuation)	
3. Survey control (e.g., boundary, topographic, photogrammetric)	
4. GPS operations	
5. Construction staking	

- C. Calculations and Compilations 7%
 - 1. Mapping methods and/or projections
 - 2. Graphical terrain representations
 - 3. Geoid, ellipsoid, and orthometric heights
 - 4. State Plane Coordinate Systems
 - 5. GPS data reduction and analysis
 - 6. Control network calculations, analysis and adjustments
 - 7. Determination of bearings/azimuths
 - 8. Area/volume calculations
 - 9. Horizontal and vertical alignment calculations
 - 10. Construction staking calculations (e.g., plan interpretation)
- D. Documentation 7%
 - 1. Survey maps/plats
 - 2. Survey reports
 - 3. Descriptions
- IV. Business/Professional Practices 15%**
 - A. Project planning (e.g., parameters, costs)
 - B. Contracts
 - C. Risk management (e.g., liability, safety procedures, insurance)
 - D. Ethics
 - E. Communications (oral, written, graphical)
 - F. Quality assurance procedures
- V. Types of Surveys 15%**
 - A. ALTA/ACSM surveys
 - B. Control and geodetic surveys
 - C. Construction surveys (e.g., construction calculations and staking)
 - D. Boundary surveys
 - E. Route and right-of-way surveys
 - F. Topographic surveys by field methods
 - G. Topographic surveys by photogrammetry