



INSTITUTO DE
AGRIMENSORES
COLEGIO DE INGENIEROS Y AGRIMENSORES DE PUERTO RICO



Study Group Agenda 24 de junio de 2023

FS – Fundamental of Surveying

6. Business Concepts

- A. Project planning (e.g., resource management, scheduling, cost estimation, tracking)
- B. Safety (e.g., signage, basic first aid, safety equipment)
- C. Liabilities (e.g., negligence, employee behavior, errors and omissions)
- D. Contracts (e.g., basic elements, scope of work, specifications)
- E. Supervision (e.g., survey team leadership, personnel management)
- F. Project documentation and record management
- G. Ethics
- H. Communication (e.g., written communication, oral communication, alternate forms of communication, conflict resolution)

7. Applied Mathematics and Statistics 10–15

- A. College mathematics (e.g., trigonometry, analytical geometry and calculus, linear algebra and matrix theory)
- B. Probability and statistics (e.g., mean, median, mode, hypothesis testing, normal distribution, linear regression)
- C. Measurement science (e.g., error analysis, error propagation, positional tolerance, positional accuracy, random/systematic/blunder errors, unit conversions)
- D. Quantitative reasoning (e.g., critical thinking, data analysis and validation, blunder detection, data quality, redundancy)

PS – Principles and Practice of Surveying

5. Areas of Practice

A. ALTA/NSPS Land Title Surveys

1. Legal documents, such as deeds, easements, and agreements
2. Zoning information as applied to ALTA/NSPS Land Title Surveys
3. Title insurance commitment letters and policies
4. Underground features as applied to ALTA/NSPS Land Title Surveys

B. Control Networks and Geodetic Network Surveys

1. Datums and reference frames relative to control networks
2. Differences between local datums and geodetic datums
3. Equipment appropriate for control surveys
4. The Federal Geographic Data Committee Geospatial Positioning Accuracy Standards
5. The National Geospatial Programs (NGP) Standards and Specifications—Digital Data Standards

C. Construction Surveys

1. Construction plan reading
2. Construction calculations including slopes, grades, and plan details
3. Construction techniques and activities
4. Horizontal and vertical positioning relative to a plan or datum

D. Boundary Surveys

1. Physical boundary evidence
2. Boundary reconciliations
3. Historical measurement accuracy, equipment, and techniques
4. Legal principles related to boundary surveys

E. Route Surveys for Alignments and Utilities

1. Route alignment stationing practices
2. Reading and interpreting roadway and utility plans

F. Topographic

1. Topographic/planimetric mapping and control standards
2. Interpretation, reconciliation, and adjustment of topographic survey data
3. QA/QC procedures as applied to topographic surveys
4. Ground, hydrographic, and remote sensing equipment
5. The U.S. National Map Accuracy Standards as applied to topographic surveys
6. Tools and techniques required to perform hydrographic, bathymetric, and remote sensing surveys
7. Nomenclature related to utilities

G. Surveys to Establish New Parcels, Lots, or Units

1. Types of subdivisions
2. Platting

3. Condominiums and associations
4. Deed restrictions and restrictive covenants
5. Zoning and subdivision ordinances

H. As-Built/Record Drawing Surveys

1. As-built/record drawing calculations including slopes, grades, and plan details
2. As-built/record drawing techniques and activities
3. Horizontal and vertical as-built/record drawing positions relative to a plan or datum

I. Consultation Services

1. Site topography and slope for development purposes
2. Site access for development purposes
3. Zoning standards related to new projects
4. Floodplains as related to land development