



ADVANCED LIQUID MEASUREMENT

(2.5 Days)

I. Volume vs. Mass Systems

- Fundamental elements controlling overall accuracy from the perspective of imbalance inquiries
- Understanding relationships controlling system performance

II. Volume Systems

- Influences and faults in temperature and pressure measurements and impact on system balance
- Understanding volume correction factors

III. Mass Systems

- Volume and density in inferred mass systems
- Mass and density in direct mass systems
- Volume vs. mass proving
- Density correlation proving
- Limitations of 11.2.4 and GPA TP-27

IV. Sampling Systems

- Role of sampling in volume systems
- Role of sampling in mass system
- Discerning the source of gravity error (densitometry vs. analysis)

V. Case Studies

A. Volume Systems

- An examination of imbalances in fixed gravity systems
- Examination of a case of gathering system losses
- Examination of a case of financial loss absent measurement error

B. Mass Systems

- Investigative techniques
- Case study of a system that gained but lost

VI. Student Exercise

Students are presented a factual case of measurement imbalance, complete with supporting data, and are challenged to produce an investigative analysis and a systematic recommendation to resolve the imbalance and then to present their findings.

