



SNS COLLEGE OF ENGINEERING

(Autonomous)

DEPARTMENT OF MECHANICAL ENGINEERING



SENSORS AND INSTRUMENTATION



Guess Today's Topic????





Calibration and Standards



- Calibration is the process of adjusting and verifying the accuracy of a measurement system or instrument by comparing its readings to a known reference or standard. The purpose of calibration is to ensure that the measurement system is providing accurate and reliable measurements, and that the readings are traceable to a recognized standard. Calibration is important in many fields, including science, engineering, manufacturing, and healthcare.





Calibration and Standards



- There are different types of calibration procedures, depending on the type of measurement system and the level of accuracy required. Some common calibration methods include:
- Comparison to a standard: This involves comparing the measurement system to a known standard, such as a reference material, a master gauge, or a calibration artifact.





Calibration and Standards



- Interlaboratory comparison: This involves comparing the measurement system to other laboratories or facilities that have a traceable measurement system.
- Systematic error correction: This involves adjusting the measurement system to correct for systematic errors, such as bias or drift.





Calibration and Standards



- Standards are reference materials or artifacts that are used to establish a common basis for measurements. Standards can be physical objects, like a calibration weight or a meter stick, or they can be specifications or procedures that define the characteristics and performance of a measurement system. Standards are developed and maintained by organizations such as the International Organization for Standardization (ISO), the National Institute of Standards and Technology (NIST), and other national and international bodies.





Calibration and Standards



- There are different types of standards, including:
- Primary standards: These are the most accurate and fundamental standards, and they are used to calibrate other standards and measurement systems.
- Secondary standards: These are calibrated against primary standards and are used to calibrate measurement instruments and artifacts.
- Working standards: These are the standards that are used in day-to-day operations to calibrate measurement instruments and to ensure the accuracy of measurements.





Calibration and Standards



- In summary, calibration and standards are critical components of a measurement system, ensuring that measurements are accurate and reliable. Calibration involves comparing the measurement system to a known reference or standard to verify accuracy, while standards provide a common basis for measurements and ensure consistency across different systems and facilities





*Thank
you*

