Basic Measurement Science Resource List for Engineers

General

- International Vocabulary of Metrology (VIM)
  http://www.bipm.org/en/publications/guides/vim.html
- International Vocabulary of Terms in Legal Metrology (VIML)
  http://www.oiml.org/en/publications/vocabularies/publication_view?p_type=4&p_status=1
- EURAMET – Metrology in Short
  http://www.euramet.org/index.php?id=mis
- NPL – Beginner's Guide to Measurement
  http://www.npl.co.uk/publications/beginners-guide-to-measurement/
- NPL – Beginner's Guide to Measurement in Mechanical Engineering
  http://www.npl.co.uk/publications/guides/beginners-guide-to-measurement-in-mechanical-engineering

Units and Symbols

- SI Brochure
  http://www.bipm.org/en/si/si_brochure/
- NIST SP 330 – The International System of Units (SI)
  http://www.nist.gov/pml/pubs/sp330/
- NIST SP 811 – The NIST Guide for the use of the International System of Units (SI)
  http://www.nist.gov/pml/pubs/sp811/
- How Many? A Dictionary of Units
  http://www.unc.edu/~rowlett/units/

Metrological Traceability and Uncertainty

- BIPM – What is Traceability
  http://www.bipm.org/en/bipm/calibrations/traceability.html
- Eurachem/CITAC guide: Quantifying Uncertainty in Analytical Measurement, Third edition, (2012)
  http://www.eurachem.org/index.php/publications/guides/quam
- NIST Traceability Policy
  http://www.nist.gov/traceability/nist_traceability_policy_external.cfm
- Guide to the Expression of Uncertainty in Measurement (GUM)
  http://www.bipm.org/en/publications/guides/gum.html
- NIST TN 1297 – Guidelines for Expressing Uncertainty
  http://physics.nist.gov/Pubs/guidelines/TN1297/tn1297s.pdf
- NPL – Good Practice Guide No. 11 – A Beginner's Guide to Uncertainty of Measurement
  http://www.npl.co.uk/publications/guides/a-beginners-guide-to-uncertainty-of-measurement

Quality Management Systems

- ASQ – 7 Quality Tools
  http://asq.org/learn-about-quality/seven-basic-quality-tools/overview/overview.html

Best Practices & Job Aids

- NPL Software for Metrology Best Practice Guide No. 1 – Validation of Software in Measurement Systems
  http://www.npl.co.uk/publications/validation-of-software-in-measurement-systems-(software-for-metrology-best-practice-guide-no.-1).
- NPL – Software Support for Metrology Best Practice Guide No. 7
  http://www.npl.co.uk/content/ConPublication/3824
- NPL – Calipers and Micrometers Measurement Good Practice Guide No. 40
  http://www.npl.co.uk/publications/callipers-and-micrometers.

Basic Measurement Science Resource List for Engineers

- University of Capetown Department of Physics – Using a Caliper and Micrometer
  http://www.phy.uct.ac.za/courses/c1lab/vernier1.html
- University of Toronto – Using a Micrometer
  http://www.upscale.utoronto.ca/PVB/Harrison/Micrometer/Micrometer.html
- NIST Engineering Metrology Toolbox
  http://emtoolbox.nist.gov/Main/Main.asp
- NIST-SEMATECH Engineering Statistics Handbook
  http://www.itl.nist.gov/div898/handbook/

Education and Training Resources

- NPL – Good Practice Online Modules
  http://www.npl.co.uk/publications/good-practice-online-modules
- University of Capetown Department of Physics – Introduction to Measurement in the Physics Laboratory: a Probabilistic Approach
  http://www.phy.uct.ac.za/people/buffler/Introduction%20to%20Measurement%20manual%20(UCT%20Physics).pdf

Careers and Metrology Body of Knowledge

- Metrology Careers
  http://www.metrologycareers.com/
- ASQ Calibration Technician (CCT) – Body of Knowledge
  http://prdweb.asq.org/certification/control/calibration-technician/bok
- ASQ Quality Auditor (CQA) – Body of Knowledge
  http://prdweb.asq.org/certification/control/quality-auditor/bok
- ASQ Quality Engineer (CQE) – Body of Knowledge
  http://prdweb.asq.org/certification/control/quality-engineer/bok
- ASQ Software Quality Engineer – Body of Knowledge
  http://prdweb.asq.org/certification/control/software-quality-engineer/bok

NCSLI Resources (Included with Membership)

- ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories
  http://www.ncsli.org/i/Store/s/iMIS/Store/iso.aspx?hkey=db347ad0-d2ad-4116-b16c-b00f65ee4665
- NCSLI Recommended Practice No. 12 – Measurement Uncertainty Analysis
- NCSLI Laboratory management Publication No. 13 – Guide to Personnel Qualifications
  http://www.ncsli.org/i/p/lmp/c/a/p/Laboratory_Manager_Publications.aspx?hkey=9e48fc7b-c9f7-4dcf-aa92-2ef00bf75e29
- NCSLI Laboratory Management Publication No. 14 – Metrology Human Resources Handbook
  http://www.ncsli.org/i/Store/lm/iMIS/Store/lm.aspx?hkey=89180c97-03f4-4556-b708-682fb4c49fa2

NCSLI Resources (Tech Store)

http://www.ncsli.org/i/Store/tb/iMIS/Store/metbks.aspx?hkey=633a95e4-c897-4778-b91f-c47a247f0492

- The Metrology Handbook (Bucher, J., ed.)
- The Uncertainty of Measurements: Physical and Chemical (Kimothi)
- The Quality Calibration Handbook: Developing and Managing (Jay L Bucher)
- An Introduction to Uncertainty in Measurement (Kirkup, Frenkel)
- An Introduction to Error Analysis (Taylor)