



CSIR-National Physical Laboratory Dr. K. S. Krishnan Marg, New Delhi-110012

Skill Development Calendar 2023-24

GENERAL INSTRUCTIONS

In case of an inadequate number of participants (less than 10), for a particular training programme, CSIR- NPL may drop the execution of that program. Hence, before sending the Payment Receipt, it is advised to confirm with the HRD (hrd@nplindia.org) or the concerned Technical Coordinator about its dates and execution.

For Technical queries about the training course, the prospective participants may contact the concerned technical coordinator

Only Indian Citizens can apply for the training programs

Fees, once submitted, are not refundable.

S. No.	Training Program on	Dates & Duration
STP-1	Training Programme on IS/ISO/IEC 17025 : 2017 (General Requirements for the Competence of Testing and Calibration Laboratories)	4-7 July 2023, Four Days
STP-2	Biomedical Metrology	10-11 July 2023, Two Days
STP-3	Materials characterization	20 July 2023, One Day
STP-4	Laser Interferometer and its applications in Dimensional Metrology	25-26 July 2023, Two days
STP-5	Pressure and Vacuum, Ultrasonic Metrology and Non-Destructive Testing	16-18 August 2023, Three Days
STP-6	Air Quality Measurements	23-25 August 2023, Three Days
STP-7	LF Voltage and Current Metrology	13-14 September 2023, Two Days
STP-8	Force, torque and hardness metrology and their applications	21-22 September 2023, Two Days
STP-9	Acoustics and Vibration Metrology and Noise Control	09 October 2023, One Day
STP-10	Coordinate Metrology	13 October 2023, One Day
STP-11	Fluid Flow Metrology	16-17 October, Two Days
STP-12	DC and Impedance Metrology	26-27 October 2023, Two Days
STP-13	Advanced Spectroscopy	30 October 2023, One Day
STP-14	Temperature and Humidity Metrology, and applications to Healthcare and Agricultural grains and cereals	1-3 November 2023, Three Days
STP-15	Advanced Materials characterization Techniques	9-10 November 2023, Two Days
STP-16	Optical Radiation Metrology	15-17 November 2023, Three Days
STP-17	Mass, Volume, Density and Viscosity Metrology.	21-23 November 2023, Three Days
STP-18	Additive Manufacturing	29 November 2023, One day
STP-19	Metrology in Chemistry (MiC)- Practical Training on ICP-MS to determine mass fraction of measurand.	5-8 December 2023, Four Days
STP-20	Application of Timing & Frequency Metrology	23-25 January 2024, Three days
STP-21	Scientific Communications	15-16 February 2024, Two days
STP-22	Photometry of LED based Lighting	21-23 February 2024, Three days

Free Skill Training Programmes for 2023-2024

S. No.	Training Program on	Dates & Duration
FSTP-1	The Internet of Things and its applications in different areas.	12 May 2023, One Day
FSTP-2	Awareness about IPR	21 June 2023, One Day
FSTP-3	Awareness about basic metrology	6-7 February 2024, Two Days
FSTP-4	Popular science writing	5 March 2024, One Day

Training Fee/Charges: Per Participant:

One Day Course	Two Days Course	Three Days Course	Four Days Course	Participants
₹3,000 + GST (@18%)	₹4,000 + GST (@18%)	₹5,000 + GST (@18%)	₹6,000 + GST (@18%)	Professionals
₹500 + GST (@18%)	₹1000 + GST (@18%)	₹1500 + GST (@18%)	₹2000 + GST (@18%)	Students and college Faculties

TDS: CSIR-NPL is exempted from Tax Deduction at Source under Section 35(1)(ii) of the IT Act 1961

The Training Fee includes Course materials, Training Kit, Lunch, Tea/Coffee, Certificate etc.

After confirming with HRD, preferably training fees should be sent at least two weeks prior to the commencement of the desired training program, through a **Demand Draft** drawn in favor of the “**DIRECTOR, NATIONAL PHYSICAL LABORATORY**”, payable at “**NEW DELHI**”.

Online transfer is also acceptable through **Canara Bank** Account No. **91002010030018**, NPL Campus, National Physical Laboratory, Dr. K. S. Krishnan Marg, New Delhi-110012. **IFSC Code CNRB0019100**, **MICR no. 110015428**. Kindly confirm the NEFT transfer details through e-mail. In the remarks column of NEFT, please mention “**STP No., HRD, NPL**”

All STP courses will be conducted in offline mode, unless there is any inescapable situation. Participants are requested to check their schedules before applying for any course. **No request from participants for changes in venue, date, or mode of training will be entertained.**

Lodging & Boarding: Participants are expected to arrange their own accommodations as limited seats are available at NPL Guest House. However, after the payment of registration fees, requests may be sent to nplguesthouse@nplindia.org with HRD in cc. Please note that guest house charges have to be borne by the trainees – at the prevailing rates of NPL Guest House.

For registration kindly fill the following Google form link:

<https://forms.gle/Hy1RiJmXqWz4KrhQ8>

For any enquiry, the participants may contact:

Dr. Paramita Guha,
Sr. Scientist HRD Office,
National Physical Laboratory, New Delhi
PIN: 110012
Ph.: 011- 4560 8531, 4560 9361 (O),
E-mail: hrd@nplindia.org

Details of Training Programs:

S. No.	Title of Training Program on	Tentative Dates, Duration	Eligibility	Content of the Training Programme	Technical Coordinator's
STP-1	Training Programme on IS/ISO/IEC 17025 : 2017 (General Requirements for the Competence of Testing and Calibration Laboratories)	4-7 July 2023, Four Days	Professionals/ students/ faculties	This training program is designed to impart an interactive experience to the participants in the quality system based on IS/ISO/IEC 17025: 2017 Standards.	Mr. Goutam Mandal Ph:- 011-4560 9435 goutam@nplindia.org
STP-2	Biomedical Metrology	10-11 July 2023, Two Days	Professionals/ students/ faculties	The Program is framed to share the knowledge on medical devices, their classifications, operations and calibrations medical devices (Electrical Safety, Defibrillator machine in fusion devices & ECG)	Ms. Sudesh Yadav Ph: 011-45609362 sudesh.yadav@nplindia.org
STP-3	Materials characterization	20 July 2023, One Day	Professionals/ students/ faculties	Overview of different existing methods of materials characterizations and demonstration of a few.	Dr. Nahar Singh Ph: 011-45608449 naharsingh@nplindia.org
STP-4	Laser Interferometer and its applications in Dimensional Metrology	25-26 July 2023, Two days	Professionals/ students/ faculties	Basics of dimensional metrology and applications of laser interferometer in dimensional measurements	Dr. Mukesh Jewariya Ph: 011-45602669 jewariya.mukesh@nplindia.org
STP-5	Pressure and Vacuum, Ultrasonic Metrology and Non-Destructive Testing	16-18 August 2023, Three Days	Professionals/ students/ faculties	Basics on pressure, vacuum and ultrasonic metrology. Application of them in the direction of Non-destructive testing.	Dr. Nita Dilawar Sharma Ph: 011 -45602207 ndilawar@nplindia.org
STP-6	Air Quality Measurements	23-25 August 2023, Three Days	Professionals/ students/ faculties	National ambient air quality standards (NAAQS), Quality Infrastructure, general definitions, gas measurement techniques (greenhouse and pollution gases), PM10 and PM2.5 measurements and their calibration (gravimetric sampler, BAM), gas standards and calibration of analyzers, primary techniques of gaseous pollutants, air flow measurement techniques, analysis of particulate bound chemicals using ICP-OES, measurement uncertainty estimations, with hands-on training on most of the parameter of NAAQS). Application of SODAR to air quality measurements will also be discussed.	Dr. Shankar G. Aggarwal Ph:- 011-45608331 aggarwalsg@nplindia.org

STP-7	LF Voltage and Current Metrology	13-14 September 2023, Two Days	Professionals/ students/ faculties	Low-Frequency Voltage and Current Metrology. Day 1(FN): Lectures on Basic concepts in Low-frequency Current and Voltage metrology, Basic Principles on measurement of AC-DC transfer difference and absolute Voltage/ Current. Introduction to primary standards, Transfer standards, and working standards and their measurement technique. Day 1(AN): Technical training on measurements of Low-Frequency Voltage and Current. Day 2(FN): Explanation of procedures and methodology for calibration through Case Study on Precision measurement of Low-Frequency Voltage and current with Uncertainty Evaluation. Day 2(AN): Technical training on measurements of Low-Frequency Voltage and Current. Day 2(FN): Explanation of procedures and methodology for calibration through Case Study on Precision measurement of Low-Frequency Voltage and current with Uncertainty Evaluation. Day 2(AN): Technical training on measurements of Low-Frequency Voltage and Current.	Dr. Saood Ahmad Ph: 011-45608613 ahmads@nplindia.org
STP-8	Force, torque and hardness metrology and their applications	21-22 September 2023, Two Days	Professionals/ students/ faculties	Basics on Force Metrology (Dissemination of force scale to the UTM), Torque Metrology (Calibration of torque wrenches), Hardness Metrology (Brinell Vickers and Rockwell scales) and different applications.	Dr. S.S.Titus Ph: 011- 45608680 titus@nplindia.org
STP-9	Acoustics and Vibration Metrology and Noise Control	9 October 2023, One Day	Professionals/ students/ faculties	Basics on Acoustics and Vibration metrology and different applications of them.	Dr. Naveen Garg Ph: 011-47091683 ngarg@nplindia.org
STP-10	Coordinate Metrology	13 October 2023, One Day	Professionals/ students/ faculties	Basics of Coordinate Metrology, Functioning of Coordinate Measuring Machines and Uncertainty Evaluation.	Dr. Girija Moona Ph: 011-45602669 moonag@nplindia.org
STP-11	Fluid Flow Metrology	16-17 October, Two Days	Professionals/ students/ faculties	Basics of Water & Gas Flow Measurement. Calibration of Water & Gas flow meter & testing of Water Meter.	Dr. S.K. Jaiswal Ph: 011-45609426 skjaiswal@nplindia.org
STP-12	DC and Impedance Metrology	26-27 October 2023, Two Days	Professionals/ students/ faculties	DC Metrology (DC voltage, current, resistance and charge measurement), Impedance Metrology (Capacitance, Inductance, AC Voltage ratio and AC Resistance), DC High Voltage, and Material Metrology.	Dr. V. P. S. Awana Ph: 011-45609357 awana@nplindia.org

STP-13	Advanced Spectroscopy	30 October 2023, One Day	Professionals/ students/ faculties	Basics of spectroscopy and their applications	Dr. RituSrivastava Ph: 011-45608644 ritu@nplindia.org
STP-14	Temperature and Humidity Metrology, and applications to Healthcare and Agricultural grains and cereals	1-3 November 2023, Three Days	Professionals/ students/ faculties	Basics of Temperature and Humidity Metrology, Realization of ITS-90 Fixed Points, Infrared Thermometry for Industrial and Healthcare applications, Moisture Measurements in Agricultural grains and serials.	Dr. D. Shivagan Ph: 011-45602379 shivagand@nplindia.org
STP-15	Advanced Materials characterization Techniques	9-10 November 2023, Two Days	Professionals/ students/ faculties	The following Topics will be covered with practical demonstration during the Training Programme. i) Powder X-ray Diffraction Technique, ii) X-Ray Fluorescence iii) EPR, iv) DLS v) Particle Size Analyser vi) SEM, vii) TEM, viii) TG/DTA, ix) Photoluminescence x) FT-IR and ICP Methods	Dr. N. Vijayan Ph :011-45608263 nvijayan@nplindia.org
STP-16	Optical Radiation Metrology	15-17 November 2023, Three Days	Professionals/ students/ faculties	Introduction to photometric and radiometric parameters, Standards of Optical Radiation, Photometric and radiometric parameters of industrial importance, e.g. Luminous intensity, illuminance, luminous flux, luminance, responsivity, CCT, spectral irradiance, spectral transmittance, absorbance etc. and their measurement and calibration	Dr. V.K. Jaiswal Ph: 011-45608228 jaiswalvk@nplindia.org
STP-17	Mass, Volume, Density and Viscosity Metrology.	21-23 November 2023, Three Days	Professionals/ students/ faculties	Procedures and methodology for calibration of weights, weighing balances, volumetric instruments, hydrometers, viscometers and viscosity oils.	Dr. Nita Dilawar Sharma Ph: 011 -45602207 ndilawar@nplindia.org
STP-18	Additive Manufacturing	29 November 2023, One day	Professionals/ students/ faculties	Introduction of additive manufacturing, Aspects of Additive and subtractive manufacturing, various techniques used for additive manufacturing, metrology in additive manufacturing	Dr. Girija Moona Ph: 011-45602669 moonag@nplindia.org
STP-19	Metrology in Chemistry (MiC)- Practical Training on ICP-MS to determine mass fraction of measurand.	5-8 December 2023, Four Day	Professionals/ students/ faculties	Introduction to Metrology in Chemistry (MiC); Role of standard, Reference Materials, Method validation & quality control emphasized to analytical measurements, Control charts, Inter-Laboratory comparisons, Traceability in chemical measurement. Basic principle of Inductively Coupled Plasma Mass Spectrometry (ICP-MS). Practical Training on sample preparation gravimetrically and Measurement of elemental measurand/analyte by ICP-MS, Estimation of measurement uncertainty.	Dr. S. Swarupa Tripathy Ph: 011-45608339 tripathyss@nplindia.org

STP-20	Application of Timing & Frequency Metrology	23-25, January 2024, Three days	Professionals/ students/ faculties	Basics of Time Metrology Methodologies and Techniques of Time Metrology in various applications technical training on the application of Timing Metrology & 1) SI system of units, New SI system, Introduction to Time and Frequency (2) SI Second and its realization; Time dissemination by telephone, NTDs and LWR (3) National Time Scale, Uncertainty and Stability (4) Time Synchronization through satellite links and Optical fiber (5) Clock Characterization and frequency stability analysis (6) Applications of Accurate Timing systems	Dr. Ashish Agarwal Ph : 011-45608384 ashish@nplindia.org Dr. Poonam Arora Ph : 011-47091569 arorap@npindia.org
STP-21	Scientific Communications	15-16 February 2024, Two days	Professionals/ students/ faculties	Awareness and knowledge in scientific writing among research students, Basic of Research ethics and Plagiarism in publications	Dr. Mukesh Jewariya Ph: 011-470691669 / 011-4560 2669 jewariya.mukesh@nplindia.org
STP-22	Photometry of LED based Lighting	21-23 February 2024, Three days	Professionals/ students/ faculties	Basics of LED testing and testing as per standard LM-79	Dr. Parag Sharma Ph: 011-45608228 sharmap2@nplindia.org

Free Skill Training Programmes for 2023-2024

S. No.	Training Program on	Dates & Duration	Eligibility	Content of the Training Programme	Technical Coordinator
FSTP-1	The Internet of Things and its applications in different areas	12 May 2023, One Day	Professional/ Students/ Faculties	Basics of IoT, different communication technologies involved in it, and applications/ practical scenario	Dr. Paramita Guha Ph:- 011- 45608531 paramita.guha@nplindia.org
FSTP-2	Awareness about IPR	21 June 2023, One Day	Professionals / students/ faculties	This program is intended to provide basic information about patents and other intellectual property rights. The sessions shall cover basics of patents, trademarks, copyrights and industrial design etc. Furthermore, it shall encapsulate patent searching and drafting and shall provide with the information on career aspects related to IPR. This online training program has specifically designed for students, researchers, academicians and aspiring IP professionals.	Dr. Unnikrishnan V.T Ph: 011-4560 8570 unnikrishnan.vt@nplindia.org
FSTP-3	Awareness about basic metrology	6-7 February 2024, Two Days	Professionals / students/ faculties	This program is intended to provide awareness about basic metrology. The sessions shall cover basics of measurement systems both at national and international level. In addition, it shall summarise an overview of SI units before and after redefinition. Also metrological terms will be introduced along with requirement on equipment. Furthermore, basics of measurement uncertainty will be discussed in detail. This online training program has specifically designed for accredited labs, students, researchers, and academicians.	Dr. Nidhi Singh Ph: 011-47091139/ 011-4560 2139 singhnidhi@nplindia.org
FSTP-4	Popular science writing	5 March 2024, One Day	Professionals / students/ faculties	This online training program has specifically been designed for students, researchers, academicians and aspiring popular science writers. The sessions shall cover purpose of popular science writing, different aspects of popular science writing and role of science communication in encountering wrong information flow	Dr. Girija Moona Ph: 011-45602669 moonag@nplindia.org