

Trainings Offered at PCSIR LABORATORIES COMPLEX, KARACHI (KLC)

Sr. No.	Course Title	Duration
1.	CAD/CAM using Pro-E/CREO Parametric Software for CNC Machines	02 months (three days a week)
2.	General Electronics Components Testing with Repair and Maintenance Techniques	3 days (3 hours daily) Or One Full day
3.	Operation Maintenance of Laboratory Equipment	04 Days
4.	Physico Mechanical Characterization of Composite Materials	03 Days
5.	Utilization of PLC and HMI	4 days (3 hours daily) Or Two Full days
6.	Analysis and Treatment of Wastewater	05 days
7.	Paper and Paper Board Testing	03 Days
8.	Utilization of Arduino Hardware and Software platform	3 days (3 hours daily) Or One Full day
9.	Hands-On Training on HPLC and TLC	02 Days
10.	Utilization of Raspberry Pi Hardware and Software Platform	3 days (3 hours daily) Or One Full day
11.	ISO-17025:2017 Technical Aspects: Implementation and Improvement of LQMS	03 Days
12.	Textile Training for Industrial Workers and Academia	05 days
13.	Overview of In-vitro Bioavailability of Pharmaceutical Preparations	03 Days
14.	WS-PCSIR-23-2 Industrial Application of Analytical Instruments (HPLC & GC)	01 Day
15.	Utilization of LabView Software Platform	3 days (3 hours daily) Or One Full day

16.	Drinking Water & Heavy Metals in Food	05 Days
17.	Use of Basic Biotechnology Tools in Enzymology, Assays with one Example	02 Days
18.	Estimation of Metals in Ores and Minerals	05 days
19.	Good Laboratory Practices for Food Processing Quality Labs	03 Days
20.	UI/ UX Designing	15 Days
21.	Quality Assurance in Feed/Meal Industry	05 Days
22.	Microbiological Handling and Techniques for Beginners	02 Days
23.	Rapid Desktop Application Development	30 Days
24.	Food Safety	05 Days
25.	Animal handling Techniques & Toxicological studies	02 Days
26.	Introduction to CNC Lathe Programming and Operations	01 month (three days a week)
27.	Air Emission and Noise Level Measurement	02 Days
28.	Operation Maintenance of Electro Medical Equipment	05 Days
29.	Hands on Training for the Analysis of Organic Compounds using Gas Chromatography	05 Days
30.	Quality Control Testing of Edible Oils and Fats	05 Days
31.	Training Program on UV Spectrophotometer	01 Day
32.	Microbiological Analysis	05 Days
33.	Food Additive Analysis	02 Days
34.	Training Program on GC	02 Days
35.	Extraction and Chromatographic Techniques	02 Days

Trainings Offered at PCSIR LABORATORIES COMPLEX, Lahore (LLC)

Scientific Equipment

#	Course Title	Duration
1.	Hands on training on GC-MS and GC-FID	02 days
2.	Hands on training on testing of fertilizers as per PSQCA standards	02-03 days
3.	Hands on training on HPLC	02 days
4.	Hands on training on Testing of Salt analysis as per PSQCA standards	02 days
5.	Hands on training on LC-MS-MS	02 days
6.	Hands on training on cosmetics	02 days
7.	Hands on training on AAS	02 days
8.	Hands on training on hydroponics	02 days
9.	Hands on training on FTIR	01 day
10.	Training on Good Agricultural Practices	02 days
11.	Hands on training on Particle size analyzer and zeta potential measurements	02 days
12.	Hands on training on extraction and evaluation of fixed and essential oils	01 day
13.	Hands on training on TGA	02 days
14.	Training on Quality evaluation of paper & packaging materials	02 days
15.	Training on Quality evaluation of insulating materials	01 day
16.	Training on Quality evaluation of paper auxiliaries	01 day
17.	Training on shelf life and life expectancy of paper and board materials	01 day

Quality Control

#	Course Title	Duration
1.	Awareness on Implementation of ISO/IEC 17025: 2017 standard	02 days
2.	Risk Assessment	01 days
3.	Corrective action, non-conformance, root cause analysis	01 days
4.	Measurement uncertainty (General)	02 days
5.	Internal Audit in context to ISO/IEC 17025:2017	03 days
6.	Decision Rule and statement of conformity	02 days
7.	Quality assurance techniques and improvement analysis	02 days
8.	Measurement traceability	01 days
9.	Method validation and verification	02 days
10.	Authorization, Competence and Skill Matrix of Personnel	01 days

Food and Biotechnology

#	Course Title	Duration
1.	Antimicrobial activity of antimicrobial agent.	10 days
2.	Microbiological analysis of water.	05 days
3.	Microbiological testing of food (raw and finished food)	10 days
4.	Efficacy studies of detergent and sanitizers.	01 week
5.	Milk Adulteration Testing	02 weeks
6.	Proximate Analysis of Dairy Products	02 Weeks
7.	Proximate Analysis of Meat Products	02 Weeks
8.	Awareness and analysis of Mycotoxins	02 weeks
9.	Spectroscopic techniques	02 weeks
10.	Food additives	02 weeks
11.	Enzyme assay	02 week

12.	Bio processing	02 week
13.	Chemical quality of water	02 weeks
14.	Mineral contents of food/food products and drinking water using flame photometer	02 weeks
15.	Fat soluble vitamins profile using High Performance Liquid Chromatography (HPLC)	03 weeks
16.	Water soluble vitamins profile using High Performance Liquid Chromatography (HPLC)	03 weeks
17.	Spectrophotometric technique (theoretical and practical demonstration)	02 weeks
18.	Flame Atomic Absorption Spectrophotometric (FAAS) technique for determination of different heavy metals, minerals, and microminerals.	02 weeks

Electrical and Electronics

#	Course Title	Duration
1.	Transition Course on ISO 17025	01 day
2.	ISO /IEC 17025:2017	01 day
3.	Electrical Safety of the appliances	01 day
4.	Measurement Uncertainty ISO 17025	01 day
5.	Risk Management ISO 17025	01 day
6.	Measurement Uncertainty ISO 17025	01 day

Design & Fabrication

#	Course Title	Duration
1.	Design & Fabrication of Scientific Laboratory Equipment	90 days
2.	Operation of Electrical / Electronic Lab Equipment (Assorted)	60 days
3.	Repair & Maintenance of Scientific Lab Equipment	60 days
4.	Welding, Lath Machining operation, Bending, Shearing	60 days
5.	Fault trouble shooting techniques in equipment	60 days

Industrial Automation and Control

#	Course Title	Duration
1.	PLC Programming	60 days
2.	Microcontroller programming	60 days
3.	Arduino projects	60 days
4.	PCB Designing	60 days
5.	Fault trouble shooting	60 days

Environmental

#	Course Title	Duration
1.	Industrial wastewater Treatment Technologies	02 days
2.	Waste water Characterization according to NEQS	01 week
3.	Instrument and Techniques for Air Quality Monitoring	01 day
4.	Chemical Evaluation of Water Quality as per WHO Guidelines	02 days
5.	ISO-17025 related training	01day (Each parameter)
6.	Drinking water treatment technologies (Point of use application)	02 days

Minerals and Advanced Engineering

#	Course Title	Duration
1.	Mechanical Testing	05days
2.	Metallography/Microscopy	05days
3.	Chemical Analysis (Metals: Ferrous/Non-Ferrous)	05days
4.	Thin Films Characterization	05 days
5.	Electropolishing/ Passivation Process for Surgical Instruments	01day
6.	Ceramic Fabrication techniques (slips casting, extrusion & pressing)	3 days
7.	Charing and ignition	3 days
8.	Titrimetric techniques	3 days
9.	Gravimetric techniques	3 days
10.	Autoclaving	3 days

11.	Operation of gas fired and electric furnaces for glass melting and ceramic sintering.	3 days
12.	Flame photometry	2 days
13.	Sieving and grinding	2 days

Computers and Instrumentation

Sr. No.	Title of Training course	Duration
1.	ISO /IEC 17025:2017 <ul style="list-style-type: none"> • Personnel & equipment maintenance • Ensuring the validity of results & Measurement Uncertainty • Risk Management • Internal Audits and follow up 	02 days 02 days 02 days 02 days
2.	Metrology <ul style="list-style-type: none"> • Handling of Metrological Equipment • Metrological Parameters with related Uncertainty Measurement • Measurement Uncertainty • Metrological traceability 	02 days 03 days 03 days 02 days

Training Offered at PCSIR LABORATORIES COMPLEX, PESHAWAR (PLC)

Herbal Medicine

#	Course Title	Duration
1.	Training on Herbarium Techniques, Plant Identification and Digitization	05 Days
2.	Training on Antimicrobial Activities, MIC and MBC	05 Days
3.	Training on <i>in vitro</i> techniques	15 days
4.	Process/Product Development Techniques	05 Days
5.	Training on <i>In-vivo</i> Pharmacological activity	05 days
6.	Training on Tablet Testing Techniques	02 days
7.	Training on Spectroscopic Techniques (HPLC, FTIR, UV)	05 days
8.	Training on GC MS	05 days
9.	Training on Atomic Absorption	03 days
10.	Training on Molecular Techniques	05 days
11.	Training at Pharmaceutical Pilot Plant	05 days

Food and Biotechnology

#	Course Title	Duration
1.	Introduction of food	One week
2.	Food sources and world food situation	One week
3.	Development of food industry	One week
4.	Food industries in Pakistan	Two weeks
5.	Food constituents	One week
6.	Classification of foods on the basis of perishability and pH value	One week
7.	Principals Of Food Preservation	One week
8.	Preparatory Operations In Food Processing	Two weeks

9.	Chemical additives in Food	One week
10.	Food fermentation	Two weeks
11.	Food analysis	Two weeks
12.	Food pilot plant	One month
13.	Food packaging	One week
14.	Practical demonstration on utilization of nano technology in food science	Two weeks
15.	Production techniques of nano fertilizers	
16.	Demonstration / expertise provision for Lab establishment / ISO/IEC 17025:2017 certified labs	Three days
17.	Workshops/seminars (food processing techniques, waste water Techniques, food adulteration, bio fertilizer production techniques)	One day on each topic

Dimension Stone

#	Course Title	Duration
1	Marble Mosaic Crafting	One Month

Trainings Offered at

LEATHER RESEARCH CENTRE KARACHI (LRC)

#	Course Title	Duration
1.	Leather Processing & QA/QC on Leather.	Four weeks
2.	Measurement of Uncertainty ISO/IEC 17025:2017	Two Days
3.	Clean Leather Technology	Two Weeks
4.	Leather Processing (Raw to Finish)	Two Weeks
5.	QA/QC on Leather.	Two Weeks
6.	Laboratory Management System ISO/IEC 17025: 2017	Five Days

Trainings Offered at

FUEL RESEARCH CENTRE KARACHI (FRC)

#	Course Title	Duration
1.	Analysis of Fuel Related Products	Two weeks Internship Training
2.	Fuel Processing and analysis of finished product	Two weeks Internship Training
3.	Pilot Scale Production of Chemical / Product and Quality Control Equipment (training for professionals)	Two weeks Work Shop
4.	Quantitative Analysis of Calorific Value of Coal/Biomass	Three days Work Shop
5.	Quantitative Analysis of heavy metals utilizing AAS	Three days Work Shop
6.	Quantitative Analysis of Sulfur of Fuel Related Samples	Three days Work Shop

Trainings Offered at PCSIR LABORATORIES, QUETTA (QL)

S.NO	TRAINING	Duration
01	Water analysis/ waste water	One Week
02	Tea analysis	One Week
03	Testing analysis of the metallic/ nonmetallic minerals	One Week
04	Sample preparation of different ores and sieve analysis	One Week
05	Proximate analysis of coal and coke	One Week
06	Wheat and Wheat Flour	One Week
07	Food Microbiology	One Week
08	Food processing	Two Weeks

For Academia

S.NO	TRAINING	Duration
01	Water analysis/ waste water	One Week
02	Proximate analysis of food	08 Days
03	Testing analysis and beneficiation of metallic / nonmetallic minerals.	One Week

Trainings Offered at PCSIR LABORATORIES, SKARDU (SL)

#	Course Title	Duration
1.	Gemstones Cutting & Polishing	06 Months
2.	Gemstone Cutting & Polishing Short Course	03 Months
3.	Fruits Handling, Dehydration, Processing and Preservation	03 Days
4.	Fruits Handling, Dehydration, Processing and Preservation	03 Days
5.	Gemstones Cutting & Polishing	03 Months
6.	Fruits Handling, Dehydration, Processing and Preservation	06 Months
7.	Gemstones Cutting & Polishing	03 Months

Trainings Offered at PCSIR LABORATORIES, ISLAMABAD (PLI)

#	Course Title	Duration
1.	Quality control testing of drinking water i Chemical ii Microbiology	03 Days 02 Days
2.	An overview of ISO 17025:2017	02 Days
	Uncertainty Measurement	02 Days
3.	Food Analysis: Export related testing i. Table salt analysis Tea analysis ii. Honey Analysis Dairy products iii. Snacks Analysis	02 Days 02 Days 02 Days
4.	Hands on training on advanced analytical instruments i. Atomic absorption Spectrophotometer operation ii. HPLC operation	04 Days 04 Days