

B. LONG COURSES CONTENTS FOR THE YEAR 2019
(Apprenticeship Course)

SL No	Course title and relevant information	Course content
01	<p>Course Title : Integrated Industrial Technology (Level-I)</p> <p>Course Code : ID-F101</p> <p>Participants : BCIC Apprentice Grade-3 (SSC-Science)</p> <p>Duration : 03 Months (Institutional) & 09 Months (In-plant training)</p>	<p>Introduction to process technology, Process symbols and process drawing, Flow behavior of fluids, Heat transfer and heat exchangers, Industrial water treatment, Boiler, Pump technology, Compressors and compression system operation, Steam turbine, Industrial safety, Ammonia process technology, Urea process technology, SSP and TSP process technology, Di-Ammonium Phosphate (DAP) process technology, Pulp and paper manufacturing technology. Receiving Instrument, Pressure Measurement, Liquid Level Measurement, Flow Measurement, Temperature Measurement, Transmitter, Control Valve, Metrology, Engineering Drawing, Seals, Pipes, Bearings, Valves, Lubricants, Welding & Machine shop Technology, Mechanical Power Transmission. Electric circuits & circuit components, symbols, Conductors, Cables, Insulators, Electrical testing & measuring instrument, Magnet and electro-magnetic effect, Photo-electric effect, Piezoelectric effect, Electrical switching & protective devices, DC Generators & DC motors. Chemical analysis & Basic analytical Equipment, Familiarization and preparation for reagents and solutions, Titrimetric analysis and Gravimetric analysis, Demonstration on pH-meter, Conductivity meter, Analysis Using UV and visible Spectrophotometer, Analysis Using UV and visible Spectrophotometer, Demonstration on Turbidity Meter, Industrial water and wastewater analysis, Water pollution problem in process industries, Air pollution problem in process industries, Safety in chemical laboratories.</p>

SL No	Course title and relevant information	Course content
02	<p>Course Title : Integrated Industrial Technology (Level-II)</p> <p>Course Code : ID-F102</p> <p>Participants : BCIC Apprentice Grade-2 (HSC-Science or 2 yrs. Trade course with SSC)</p> <p>Duration : 03 Months (Institutional) & 09 Months (In-plant training)</p>	<p>Process Technology: Industrial process technology; Process symbols; Basic unit operations; Process equipment & machinery; Industrial safety.</p> <p>Instrumentation & Control Engineering: Sensing & measurement of process parameters; Transmitters, receivers, controllers, control valves & valve positioners; Automatic process control</p> <p>Mechanical Process Plant Engineering : Tools & Tackles: Fasteners & joints; Pipes & pipe fittings, Valves; Filters & strainers; Welding & fabrication technique; Rotating machines: Static equipment.; workshop machinery:</p> <p>Electrical & Electronic Engineering: Electrical cables, conductors & insulators; Electrical measuring & testing instruments; Motors; Transformers; Protective devices; Electrical power system Electrical wiring; Electrical safety</p> <p>Analytical Chemistry & Environmental Science: Chemicals & reagents; Solution; Basic principles of qualitative & quantitative analysis; Fundamentals of instrumental analysis. environmental pollution & industrial pollutants</p>