

A. Up-gradation Course Contents, 2018

SL No	Course title and relevant information	Course Contents
01	Course Code: IC-U320 Programmable Logic Controller (PLC) & Programmable Instruments Participants : Junior & Mid-level officers Duration : 14 ~ 25 January, 2018 Course Fee : Tk. 16,000/- Per Participant	Hardware and Software of PLC and Programmable Instruments. Functional description of PLC and Programmable Instruments. Installation, programming, maintenance and troubleshooting of PLC and Programmable Instruments.
02	Course Code : IS-U101 Industrial Safety & Prevention of Accidents Participants : Operator/Technician Duration : 14 ~ 25 January, 2018 Course Fee : Tk. 12,300/- Per person	Introduction to industrial safety and safety regulations, Danger of chemicals and their associated hazards, Toxic release, Fire and explosion hazards (with a special focus on water reactive chemical fire and explosion) and its prevention, Acoustic hazard and its control, Personal protective equipment (PPE), Safe handling procedure of tools, machines and chemicals, Safety in mechanical maintenance, Safe handling of gas and gas cylinders, Accident and its prevention, Safety measures associated with confined space, Emergency response plan, Rescue operation, Electrical safety, Housekeeping and its importance, First-aid, Practice on different safety equipment and PPE, Demonstration on fire and explosion hazards, Practice on different portable fire extinguishers, Practice on fixed fire extinguishing system, Practice on fire alarm system without FACP, Practice on rescue operation, Case study
03	Course Code : CI-U101 Computer & Its Application Participants : Operator/Technicians Duration : 20 ~25 January, 2018 Course Fee : Tk.7,800/- Per person	Introduction to computer Types: Familiarize with different types of computer; Structure of personal computers: Understand hardware parts of computer-Meaning of Main body, Monitor, Keyboard, Printer, Speaker, Microphone, Router, and other peripherals, Understand software parts of computer- Meaning of BIOS(Basic Input Output System), Drivers, OS(Operating System), and Applications software(MS-office etc.); MS Word: Basic screen configuration, documentation concept of documentation, save need for save, and various types of documents; Document passwords enabling & disabling, understanding of Zoom in/out-screen Zoom/out, Find/Replace, Undo/Redo, features of Memo, and Spelling checker; Concept of Fonts, Font colors, Font sizes, Underline and Shades; Adjusting Character spacing/set Width; Function of Paragraphs and Multi-stage, Style; How to use Shapes and Objects; Organize Tables, Cells, and Pages; Function of Footnotes, Endnotes, Headers, Footers, Inserting, and Sorting; Features of Multi-stage alignment, Caption, and Text substitution; Printing procedure. MS Excel: Basic screen configuration and its elements; Display types of characters and numeric data; How to adjust row and column sizes; Concept of worksheets and defining names; Necessity of Fill handle and data validation; Page layout and background pictures; Differences among Absolute address, Relative address, and Mixed address; Creating a formula by names; Formula calculation using the auto sum feature; Understanding of various functions; Adjusting grid spacing and labels, and display the legend; Necessity of Pivot table; Understanding of Database functions used in Excel; How to implement Macros and Hyperlinks; Printing procedure. MS PowerPoint: Basic screen composition and Theme; Move/Copy/Delete slides; Understanding of Drawing, Painting, and Style; Customizing Ribbon menu; Concept of Font, Color, Logo, Theme, Bullets, Line and Paragraph Spacing and adjust List level; How to merge several Shapes; Understanding of Shape align, Color extraction, two and three-dimensional shapes; Features of Smart Art; Converting your texts or pictures using SmartArt graphics; How to insert video clips and audio clips; Image setting and compressing media files; Means of video files and PDF documents; Applying Object animations/Screen transition to slide presentation; Recording Slide show/Online presentation; Printing procedure.
04	Course Code CE – U118 Common Laboratory Equipment & Chemicals Participants : Operator/Technicians Duration : 21 Jan ~ 01 Feb, 2018 Course Fee : 12,300/- Per Participant	Types, construction & working principles of compressors & turbines, Maintenance and troubleshooting of different compressors & turbines, Seals & Lubrication system of compressors & turbines, Different bearings used and their maintenance, Surging phenomenon & anti-surge control system of centrifugal compressor, Importance of inter-cooler & after-cooler to increase compressors efficiency and their maintenance, Boiler feed water treatment and steam generation for turbine, Vibration analysis technique used for troubleshooting & diagnosis of turbo-machinery problems, Inspection of compressor & turbine components by NDT, Labyrinth seal & plain bearing clearance measurement, Alignment of machine train.

05	<p>Course Code :ME-U302 Inspection & Troubleshooting of Rotating Machines Participants : Junior & Mid-level officers Duration : 04 ~ 15 February, 2018 Course Fee : Tk. 12,300/- Per person</p>	<p>Introduction and concept of Preventive maintenance in Inspection & Troubleshooting of rotating machines: Different types of Pumps, Compressors; Construction & Maintenance of Turbine, Inspection & Troubleshooting of Turbine, Troubleshooting of Fan, Blower, Agitator and their remedy, Construction & Maintenance of pulp Refiner, Construction & Maintenance of cement Ball Mill, Troubles in different equipment due to improper Lubricants & Lubrication, NDT methods used in inspection of machinery components, Machine condition monitoring and analysis by using vibration analysis technology, Shaft failure analysis and its remedy, Gear failure analysis and its remedy, Causes of Seal failure, Root causes of Bearing failure and their remedy, Inspection, Study of Rotating machines, Demonstration on Vibration monitoring and diagnosis equipment, Case study on Turbine & Compressor failure, Inspection of Machinery components by NDT, Industrial and mechanical safety.</p>
06	<p>Course Code :CE-U342 Quality Management System based on ISO Standards Participants : Junior & Mid-level officers Duration : 10 ~ 15 February, 2018 Course Fee : Tk. 7,800/- Per person</p>	<p>Definition and Terminology; Initiatives for Quality Assurance System; ISO Standards Related to Calibration and Testing; Necessity and Development of ISO Based Test and Calibration Service in Bangladesh; ISO based Industrial Quality Management; Implementation of ISO 9001; QMS for Testing and Calibration Labs; QMS Documentation; Development of Quality Manual and its Procedures and Selection of Methods; Statistical Treatment of Measurement Data; Internal Auditing and Measurement of Uncertainty; Practice of Uncertainty Calculation; Quality Assurance and Reporting of Results.</p>
07	<p>Course Code :EE-U336 Electrical Power Generation & Power Plant Technology Participants : Junior & Mid-level officers Duration : 25 Feb ~,08 Mar 2018 Course Fee : Tk. 12,300/- Per person</p>	<p>Introduction to different types of power generating plant and energy resources. Mechanical & electrical features of generators; Excitation system, Prime movers: Diesel Engine, gas turbine & Steam turbine, Lube oil, gas & steam system for turbine, Steam boilers, Operational control & safety devices for prime movers. Control & Protective devices for generator. Voltage & frequency Control of generator. Start-up, Synchronization & loading of generator. Practice on generator operation; Trouble shooting & maintenance. Industrial and electrical safety</p>
08	<p>Course Code : IC-U332 Advanced PLC with SCADA system & its Application in Process Automation and Control Participants: Junior & Mid-level officers Duration : 25 Feb ~ 08 Mar, 2018 Course Fe : Tk. 18,800/- Per person</p>	<p>Introduction to Advance PLC and Control system; Architecture and Functional Description of Advanced PLC and Operator Station (OS); Programming languages and Programming Techniques; Interface devices and software; PC-based system, Operation station and SCADA software; Program Development practice for different languages; Installation, Maintenance and Troubleshooting PLC.</p>
09	<p>Course Code:PT-U305 Heat Transfer & Operation of Heat Exchanger Participants: Junior & Mid-level officers Duration : 03 – 08 Mar, 2018 Course Fee : 7,800/- Per person</p>	<p>Introduction to risk awareness and its management; Safety regulations and safety sign; Safety in chemical process plant operation; Inspection, Auditing & Recording system of process equipment; Fire and Explosion hazards; Toxic hazard; Personal protective equipment; Electrical hazards; Safety measures in confined spaces; Effect of preventive maintenance on safety; Use of process Hazard identification and assessment tools e.g. HAZOP & HAZAN, FTA, FMEA, QRA etc. Practice on safety equipment.</p>
10	<p>Course Code : CI- U303 Computer Networking & Maintenance Participants : Junior & Mid-level officers Duration : 03 – 08 Mar, 2018 Course Fee : Tk.7,800/- Per person</p>	<p>Understanding of Network: Concept of Communication protocol and the TCP/IP, OSI reference model, Feature of the network topology, Types of Network, Network Components ; LAN cable manufacturing: Performance index of the UTP Cable, The difference between Baseband & Broadband, Kinds of UTP cable, Local Area Network (LAN) Cables for PC to PC, Local Area Network (LAN) Cables for PC to HUB, Local Area Network (LAN) Cables for HUB to HUB ; LAN Network installation & IP Configuration: Understanding of Bulletin board, mini-homepage, blogs, mini blogs, and virtual meeting space, Function of the switching hub and Network Router, installation of Local Area Network (LAN), configuration of IP addresses, test IP addresses & communication ; Network router installation & configuration: installation of Router, configuration of IP addresses, test signal, password & communication ; Wireless AP / LAN: How to firewall settings, How to Set Up Wireless LAN Card Mode, How to Set Up Access Point Mode, installation of WAP Configuration of IP addresses, test signal, password & communication; Network Troubleshooting: Diagnosing the connection status, Computer configuration problem ; Setting Internet start page: Entering the desired start page, Fixing the Start Page</p>

11	<p>Course Code: IS-U115</p> <p>Electrical Safe Work Practices for Process Industries</p> <p>Participants: Operator/Technicians</p> <p>Duration : 31 Mar – 15 April, 2018</p> <p>Course Fee : 7,800/- Per person</p>	<p>Introduction to Electrical safety; Safe voltage and current for working personnel; Electrical measuring & testing equipment and protective devices; Fire and explosion hazards & their prevention; Electrical safety signs, safety barriers, safety tags, safety locks etc.; Role of earthing in electrical safety; Safe electrical working procedures & precautions; Emergency actions in case of electrical hazards; Electrical personal protective equipment and Electricity regulations, Corruption issue & Quality of governmental services along with practical sessions on earthing & measurement of Earth resistance & fire fighting.</p>
12	<p>Course Code:ME-U344</p> <p>Bearings & Industrial Lubricants</p> <p>Participants : Junior & mid-level officers</p> <p>Duration : 21 ~ 26 April, 2017</p> <p>Course Fee : Tk.7,800/- Per person</p>	<p>Selection criteria of bearings, Different types of bearings: Construction,. Material and Designation, Bearing tolerance and fit system, Causes of bearing failure and storage of bearings; Importance of lubricants, Selection criteria of lubricants, Properties of different types of lubricants, ISO viscosity grades of lube oil, NLGI grades of greases, Lube oil purification and storage, Environmental impact of lubricants. Safety in mechanical maintenance</p>
13	<p>Course Code : EE- U118</p> <p>Electrical Maintenance Techniques</p> <p>Participants : Operator/Technicians</p> <p>Duration : 14 ~ 19 July, 2018</p> <p>Course Fee : Tk.7,800/- Per person</p>	<p>Different maintenance methods preventive maintenance, inspection & monitoring of switchgear system, Generator, Transformer, motor and other electrical equipment. Hands-on practice on preventive maintenance scheduling & execution. Safety in electrical maintenance</p>
14	<p>Course Code :ME-U311</p> <p>Alignment Technology of Rotating Machines, Level-II</p> <p>Participants : Junior & Mid-level officers</p> <p>Duration : 29 July ~ 09 Aug, 2018</p> <p>Course Fee : Tk. 12,300/- Per person</p>	<p>Introduction to alignment techniques of rotating machine, Equipment used & terms related to misalignment, Importance of alignment for different types of coupling, General description of different methods of alignment, Centering of rotor and casing, Thermal effect on alignment, Alignment practice on turbine & compressor, Alignment of chain & sprocket, Alignment of coupling with feeler gauge & knife edge, Alignment of V-belt, Alignment by rim & face method of a machine train, Alignment of gear & pinion, Demonstration on LASER alignment. Industrial safety and safety in mechanical maintenance</p>
15	<p>Course Code: PT- U104</p> <p>Pumps: Operation & operation behavior</p> <p>Participants : Operator/Technicians</p> <p>Duration : 29 July ~ 09 Aug, 2018</p> <p>Course Fee : Tk. 12,300/- Per Participant</p>	<p>Introduction, Working Principle and Classification of Pumps; Process symbols and process diagrams; Major Components of pumps and their functions; Pump Characteristics; Lubricants and Lubrication of Pump; Bearing and Seal system of Pump; Measuring, Indicating and Recording Instrument; Standard Operating Procedure (SOP) of pump; Selection of Pump; Troubleshooting of Pump; Sequential Logic Operation; Industrial safety; Lab practice on process symbols and process diagrams; a) Relation between Flow rate(Q) and Head (H) of centrifugal pump b) Effect of Speed(N) on Q~H curve of centrifugal pump; Speed(N) vs. Head (H) and Speed (N) vs. Capacity (Q) relations of centrifugal pump; c) Comparison of Energy consumption at constant delivery through different diameter pipelines d) Parallel and Series connection of two similar pumps; e) Influence of bubbles, suction head position etc. On pump capacity; f) Determination of Line characteristics at different Speed(N) and its effect on delivery; Determination of Density, Viscosity and Flash point of Lube oil;</p>
16	<p>Course Code : CE-U345</p> <p>Industrial Effluent Treatment Techniques & ETP Design</p> <p>Participants : Junior & Mid-level officers</p> <p>Duration : 04 ~ 09 Aug, 2018</p> <p>Course Fee : Tk. 7,800/- Per person</p>	<p>Principles of pollution prevention & environmental policy analysis, Pollution prevention on a selected industrial sector in Bangladesh, Commonly applied wastewater treatment process /technologies. Practice on technology and design a wastewater treatment train, Sludge handling and treatment processes, Air pollution monitoring & treatment technique.</p>
17	<p>Course Code : EE-U337</p> <p>Electrical Sub-Station & Switchgear: Operation & Maintenance</p> <p>Participants : Junior & Mid-level officers</p> <p>Duration : 04 ~ 09 Aug, 2018</p> <p>Course Fee : Tk. 7,800/- Per person</p>	<p>Electrical power distribution system requirements. Circuit breakers, Isolator & bus bar, Control & protective devices, Testing & maintenance of power transformer, Current transformer & Potential transformer. Electrical storage batteries, Testing of relays. Testing of high voltage cables & transformer oil. Testing & calibration of control & protective devices. Power factor improvement devices. Shop practice on substation switch gear. Electrical safety</p>

18	<p>Course Code: CI- U302</p> <p>Computer Maintenance & Troubleshooting Participants : Junior & mid-level officers Duration : 04 ~ 09 Aug, 2018 Course Fee :Tk.7,800/- Per person</p>	<p>Introduction to computer Types: Familiarize with different types of computer, Choice proper type of computer for use, understanding the benefits of each type computers; Structure of personal computers: Understand hardware parts of computer- Meaning of Main body, Monitor, Keyboard, Printer, Speaker, Microphone, Router, and other peripherals, Understand software parts of computer- Meaning of BIOS(Basic Input Output System), Drivers, OS(Operating System), and Applications software(MS-office etc.); Understanding of PC Components: Main board, Power Supply, CPU, RAM, HDD, ODD, SSD, Video Card, LAN card. Monitor, Keyboard, etc.; Internal structure of PC main body: Functions of Main Board, Power Supply, CPU, HDD, RAM, Video Card, Floppy, CD/DVD drive, several interfaces, etc.; Selecting the parts suitable for purpose: Understanding of motherboard components term(CPU, FSB, Memory, AGP, PCI, North Bridge, South Bridge, IDE, ATA, SATA, USB, Ethernet, Audio Codec, BIOS, LPC bus, ISA Bus, PC/AT bus, and CMOS; Other capabilities of the components (Power supply, Graphic card, ODD, SSD, Sound card, LAN card, etc.) ; Disassembling and Assembly PC: Safety rules about computer repair, How to avoid an electric shock, Understanding of functions of major components (Main body, Power Supply, CPU, RAM. HDD, ODD, SSD, Video Card, LAN card, Monitor, Keyboard, Speaker, Microphone, etc.); PC Repairing: Reset Settings (BIOS setup, etc.), How to check PC using the diagnosis program, Checking the appearance of parts, Inspection of assembled parts.</p>
19	<p>Course Code: PT- U321</p> <p>Industrial Corrosion & Corrosion Control Participants : Junior & mid-level officers Duration : 08 ~ 13 Sep, 2018 Course Fee :Tk.7,800/- Per person</p>	<p>Introduction to industrial corrosion; (Corrosion principles, Effects of corrosion, Cause of corrosion, Cost of corrosion); Classification of corrosion; Classification based on Mechanism, Environment, Corrosivity effect; Factors influencing corrosion (Metallurgical aspects, Mechanical factors, Environmental factors); Corrosion in aqueous environment (Corrosion in cooling water system and steam circuits); Corrosion of pipelines in soil;- Nature of soil corrosion ; - Biological corrosion - Testing and remedial measures; Protection against corrosion:- Change in design; - Selection of material; - Change in environment; Corrosion prevention:- by using inhibitors - by using surface coating, linings and paints; Principles & Application of Cathodic and anodic protection; Determination of galvanic potential of different metals, Cathodic protection by sacrificial anode (lab test). Industrial safety</p>
20	<p>Course Code : ME- U129</p> <p>Installation, Maintenance & Operation of Industrial Pumps Participants: Operator/Technicians Duration : 08 ~ 13 Sep, 2018 Course Fee : Tk.7,800/- Per person</p>	<p>Classification of pumps and their use; Construction and working principle of centrifugal & reciprocating pumps; Installation procedure of pump; Maintenance of centrifugal and reciprocating pumps; Disassemble and assemble practice of pumps; Alignment of pump; Operational behavior of centrifugal pump; Safety in mechanical maintenance.</p>
21	<p>Course Code: EE-U334</p> <p>Electrical Maintenance Techniques Participants :Junior & Mid-level officers Duration : 08 ~ 13 Sep, 2018 Course Fee : Tk.7,800/- Per person</p>	<p>Different maintenance methods preventive maintenance, inspection & monitoring of switchgear system, Generator, Transformer, motor and other electrical equipment. Hands-on practice on preventive maintenance scheduling & execution. Electrical safety.</p>
22	<p>Course Code : IC - U334</p> <p>Distributed Control System (DCS) in Industries</p> <p>Participants: Junior & Mid-level officers Duration : 23 Sep. ~ 04 Oct, 2018 Course Fee : Tk. 16,000/- Per person</p>	<p>Industrial Computerized process control technology, Architecture and Application of DCS operation, difference between manual system and DCS system, Different programming, Demonstration of control loop operation, Start and shutdown procedure in DCS, Symbol and drawing Hardware configuration, Explanation of process unit , Data communication and control network, Interfacing Device, Programming of different control loop, Configuration of stardom, Recourse configuration, component of control application, Logic designer engineering procedure , I/O Processing and Authorization, Alarming, History and Reporting , Maintenance and trouble - shooting of DCS</p>
23	<p>Course Code: PT- U106</p> <p>Industrial Boilers & Operation of Steam Generation system</p> <p>Participants : Operator/Technicians Duration : 23 Sep. ~ 04 Oct, 2018 Course Fee : Tk. 12,300/- Per Participant</p>	<p>Introduction to Industrial Boiler and steam system, Process symbols & Process diagrams, Familiarization with constructional parts of boiler, External treatment for boiler feed water, Internal treatment for boiler water, Combustion management of boiler, Burner & firing system of boiler, Control & Safety system of boiler, Standard operating procedure (SOP) of boiler, Boiler blow-down, heat recovery and de-aerator, Boiler energy efficiency, Cleaning & preservation of boiler, Sequential logic interlock system, Industrial Safety etc. Basic concept of industrial productivity; Industrial safety, Personal protective equipment and fire protection arrangement.</p>

24	<p>Course Code : ME - U346</p> <p>Basic Mechanical Design by AutoCAD 2D & 3D Participants: Junior & Mid-level Officers Duration : 13 ~ 18 Oct, 2018 Course Fe : Tk. 7,800/- Per person</p>	<p>Basic knowledge on Computer, Installation of AutoCAD software, Creating Workspace & Interface for 2D & 3D Drawing, Drawing techniques using coordinate entry method, Sketch Basic Elements for 2D drawings, Editing the 2D drawings, Input Character & Dimensioning of the drawings, Setting Layers & Organizing the drawings with layers, 2D Drawing Examples & tutorials for Mechanical Components, Sketch Basic Solid Bodies (3D), Editing the Solids (3D), 3D Drawing Examples with tutorials of Mechanical 3D Modeling, Prepare drawing necessary information for plotting, Printing out Drawing both 2D & 3D drawings.</p>
25	<p>Course Code : CE-U347</p> <p>Advanced Techniques of Chromatographic Analysis Participants: Junior & Mid-level officers Duration : 13 ~ 18 Oct, 2018 Course Fee : Tk. 7,800/- Per person</p>	<p>Principle, multiple application of Gas Chromatograph (GC), high performance liquid chromatograph (HPLC) and elemental analyzer. Operational maintenance, safety, trouble shooting and calibration of chromatographic instruments; Practice on gas chromatograph, high performance liquid chromatograph (HPLC) and elemental analyzer; Analytical data acquisition, recording & presentation.</p>
26	<p>Course Code : IC - U333</p> <p>Application of PLC in Industries Participants :Junior & Mid-level officers Duration : 28 Oct ~ 08 Nov, 2018 Course Fee : Tk.16000/- Per person</p>	<p>Hardware description of PLC, Basic Programming of PLC, Sensors and Transducers, Data Communication, Application of Control Theory, Sequence Logic Circuit, Ladder diagram developing, Testing Functions, Installation of Program, Operation of Peripheral Devices, Operation and Maintenance</p>
27	<p>Course Code : IS-U301 Industrial Safety & Prevention of Accidents Participants :Junior & Mid-level officers Duration : 28 Oct ~ 08 Nov, 2018 Course Fee :Tk. 12,300/- Per Participant</p>	<p>Introduction to industrial safety and safety regulations, Danger of chemicals and their associated hazards, Toxic release, Fire and explosion hazards (with a special focus on water reactive chemical fire and explosion) and its prevention, Acoustic hazard and it's control, Personal protective equipment (PPE), Safe handling procedure of tools, machines and chemicals, Safety in mechanical maintenance, Safe handling of gas and gas cylinders, Accident and its prevention, Safety measures associated with confined space, Emergency response plan, Rescue operation, Electrical safety, Housekeeping & its importance, First aid, Practice on different safety equipment and PPE, Demonstration on fire and explosion hazards, Practice on different portable fire extinguishers, Practice on fixed fire extinguishing system, Practice on fire alarm system without FACP, Practice on rescue operation, Case study</p>
28	<p>Course Code: EE-U335</p> <p>Industrial Motor Control (Level-1)</p> <p>Participants : Junior & mid-level officers Duration : 17 ~ 29 November, 2018 Course Fee :Tk. 12,300/- Per person</p>	<p>Introduction to motor control, history of motor control, Electrical tools & instruments, Electrical symbols and electrical diagrams, Logic and sequence diagrams, Magnetism and magnetic solenoids, AC/DC magnetic contactors and motor starters, Timer, time delay and logic, Electrical hazard & safety. Selection of motor control devices, Direct on line (DOL) motor circuits, Reversing motor circuits, Star-delta motor circuit, Reversing star-delta motor circuit, two speed motor circuit, Power distribution for motor control, fuse, breaker and relays for motor control, practice on controls wiring, Preventive maintenance and troubleshooting of motor control circuit..</p>
29	<p>IS-U301 Risk Awareness & Risk Management in Process Industries Participants: Junior & Mid-level officers Duration : 17 – 29 Nov April, 2018 Course Fee : 12,300/- Per person</p>	<p>Introduction to industrial safety and safety regulations, Danger of chemicals and their associated hazards, Toxic release, Fire and explosion hazards (with a special focus on water reactive chemical fire and explosion) and its prevention, Acoustic hazard and it's control, Personal protective equipment (PPE), Safe handling procedure of tools, machines and chemicals, Safety in mechanical maintenance, Safe handling of gas and gas cylinders, Accident and its prevention, Safety measures associated with confined space, Emergency response plan, Rescue operation, Electrical safety, Housekeeping & its importance, First aid, Practice on different safety equipment and PPE, Demonstration on fire and explosion hazards, Practice on different portable fire extinguishers, Practice on fixed fire extinguishing system, Practice on fire alarm system without FACP, Practice on rescue operation, Case study</p>
30	<p>Course Code : CE-U346</p> <p>Instrumental Methods of Chemical Analysis Participants : Junior & Mid-level officers Duration : 25 Nov. ~ 06 Dec., 2017 Course Fee :Tk.12,300/- Per person</p>	<p>Introduction to instrumental analysis, Principles and instrumentation of Spectrophotometric analysis: UV-Vis spectrophotometer, FTIR, AAS, ICP-OES, ED-XRF. Industrial applications and analysis by UV-Vis spectrophotometer, FTIR, AAS, ICP-OES and ED-XRF. Operational maintenance and safety of those instrument, Industrial application of classical analysis</p>

31	<p>Course Code : PT- U336</p> <p>Process Simulation Using Aspen Plus Software</p> <p>Participants: Junior & Mid-level Officers</p> <p>Duration : 01 ~ 06 December, 2018</p> <p>Course Fe : Tk. 7,800/- Per person</p>	<p>Introduction to Aspen plus, Aspen Plus start-up, Built-in function, Physical property estimation, Various flash calculations, Heat exchanger simulation, Basic distillation, Reactor modeling, Converting a process from steady-state to dynamic simulation (<i>Theory included in practice session</i>).</p>
32	<p>Course Code : IC - U117</p> <p>Programmable (SMART) Instruments and its Application</p> <p>Participants : Technicians and Operators</p> <p>Duration : 01 ~ 06 December, 2018</p> <p>Course Fee : Tk.9,400/ Per Participant</p>	<p>Industrial Programmable (SMART) Instrument & its Application; Developing trends of digital instruments and its wide application in process industries; Different types of SMART instrument: Transmitter, Controller, Recorder, Control Valve Positioner; SMART instrument terminology; Architecture of SMART Instrument; Programming language & Programming technique; Calibration; Maintenance & trouble shooting of SMART system.</p>
33	<p>CI- U304</p> <p>Computer & Its Application in Industries</p> <p>Participants : Junior & mid-level officers</p> <p>Duration : 01 ~ 06 December, 2018</p> <p>Course Fee : Tk.7,800/ Per Participant</p>	<p>Introduction to Computer Hardware and Software; Introduction to MS office; Different Menu Bar or Icon meaning of MS office: File, Edit, View, Insert, Format, Tools, Table, Help etc.; MS Word: Starting MS Word, Opening new file, Document preparation in different formats and editing, different types of table making and editing, file saving/opening old or recent file/editing/closing. Printing: Page set up, margin set up, paper orientation, print preview, printer ink selection, printer selection and printing; MS Power Point: Picture and image added/link in slide, Organization chart development, Import Excel and other charts / file in power Point, Printing procedure; MS Excel: Starting MS Excel, Document preparation in different formats and editing for formula calculation, file saving/closing/opening. MS Excel: Different types chart and graph composing, File saving/closing/opening, printing; Document Printing; Computer application in Industrial Control: Role of Computer in Industrial Process Control; Types of Industrial Computer; Computer Interfacing technique with different devices; Use of computer in DCS System; Use of computer in PLC Control System; Computer for Industrial data communication; Computer Safety Control in Industries.</p>