

C. SPECIAL COURSES CONTENTS FOR THE YEAR 2019

01. Operation & Process Technology Department (OPTD)

SL No	Course title and relevant information	Course content
01	<p>Course Title : Industrial Process Unit Operation & Process Control Technique</p> <p>Course Code : PT-S203</p> <p>Participants : Student of ACCED. Dhaka University; ACCED. Rajshahi University; ACCED. JUST; PMED & CEPSD, SUST, Sylhet.</p> <p>Duration : 04 weeks</p> <p>Course fee: Tk.8,000.00 (Eight Thousand only) per participant</p>	<p>Introduction to process technology; Process symbols & process diagrams; Operation & control of industrial process units; Construction, operation & control system of industrial boilers, heat exchangers, pumps, compressors & turbine; Basic concept process plant design; Lubricants & Lubrication of industrial equipment; Measuring & control techniques of process parameters; Sensors; Transmitters; Controllers; Control valves; Programmable logic controller (PLC); Sequential logic control; Seal & Gasket; Bearing; Pipe fittings & Valves; Insulations & high temperature refractory; Introduction to Industrial safety; etc.</p> <p>Practice on operation unit e. g. Water treatment plant, Ion exchange, Heat exchange unit, Pump arrangement, Flow assembly, Evaporation & Crystallization, Absorption & Neutralization. Programmable logic controller (PLC) and Sequential logic control. Demonstration on personal protective equipment and fire protection arrangement; Operation and application of Photometer & UV/Visible Spectrophotometer, Atomic Absorption & Spectrophotometer, Infrared Spectrophotometer, High Performance Liquid Chromatography, Gas Chromatography.</p>

02. Mechanical Engineering Department (MED), 2019

SL No	Course title and relevant information	Course content
01	<p>Course Title : Industrial Technology on Mechanical Engineering</p> <p>Course Code : ME-S203</p> <p>Participants : 4th year students of IPE Department, SUST, Sylhet</p> <p>Duration : 04 weeks / 03 weeks</p> <p>Course fee : Tk.8,000/- per participant (for 04 weeks, Public Varsity) : Tk. 6,200/- per participant (for 03 weeks, Public Varsity)</p>	<p>Introduction to workshop machine and their application; Familiarization with arc, gas, TIG & spot welding; Arc & TIG welding and gas cutting practice; Machine shop practice turning, milling, drilling, surface grinding etc; Classification of engineering materials; Detection of flaws by NDT methods.</p> <p>Measurement & measuring instruments; Description of Ball, Roller & Plain bearings; Mounting/dismounting of bearings; Types of lubricants & their properties, Methods of lubrication.</p> <p>Introduction to common rotating machines; Construction & working principles of Pumps, Fan, Blower, Compressors & Turbines; Assembly/disassembly practice of pumps; Vibration analysis technique; Construction & working principles of IC engine, Heat exchanger & Cooling tower s.</p> <p>Principle of Refrigeration & air conditioning; Refrigerator, Window & Split type air cooler and Central air conditioning system; Introduction to industrial Boilers; Construction & working principles of Boilers; Insulating materials.</p> <p>Principle of mechanical power transfer, Mechanical power transmission device; Alignment technology; Familiarizations with hand tools, tackles & accessories; Paints & protective coatings; Pipes & pipe fittings; Introduction to rupture disc, steam traps, strainers & filters; Seals, Construction & working principle of different types of valves.</p> <p>Industrial safety, Basic concept of PLC & Sequential logic operation, Industrial power generation & distribution, Electrical safety.</p>

03. Analytical Chemistry & Environmental Science Department (ACESD), 2019

SL No	Course title and relevant information	Course content
01	<p>Course Title: Chemical Analysis In Quality Control</p> <p>Course Code: CE-S105</p> <p>Participants: MS Students Dept. of Chemistry, SUST, Sylhet.</p> <p>Duration : 04 Weeks</p> <p>Course fee : Tk.8,000.00 (Eight Thousand only) per participant.</p>	<p>Introduction to quality control laboratory; Gravimetric methods of analysis; Titrimetric & volumetric methods of analysis; Spectrometric methods of analysis – use of Photometer, UV/Vis Spectrophotometer, Flame Photometer, Atomic Absorption Spectrophotometer (AAS); Chromatographic methods of analysis – use of Gas Chromatograph (GC), High Performance Liquid Chromatograph (HPLC), Elemental Analyzer; Quality testing of raw material and products; Analysis of industrial water; Determination of pollution control parameters; Unit operations in process industry; Safety measures in process industry.</p>
02	<p>Course Title: Quality Control & Unit Operation in Food Industry</p> <p>Course Code: CE-S104</p> <p>Participants: Students of FETD, SUST, Sylhet, FST, CUASU, Ctg.</p> <p>Duration : 04 Weeks</p> <p>Course fee : Tk.8,000.00 (Eight Thousand only) per Participant.</p>	<p>Introduction to quality control laboratory; Gravimetric analysis of foodstuff; Titrimetric & volumetric methods of analysis; Analysis of starch, protein & fat in food; Hydrous test in sugar/molasses and formalin test in fish; Food & beverage analysis; Edible oil & fat analysis; Spectrometric methods of analysis - use of Photometer, UV/Vis Spectrophotometer, Flame Photometer, Atomic Absorption Spectrophotometer (AAS); Analysis of potable water; Chromatographic methods of analysis - use of Gas Chromatograph (GC), High Performance Liquid Chromatograph (HPLC), Pollution control in food processing industry; Unit operations in process industry; safety measures in process industry.</p>

04. Electrical & Electronic Engineering Department (EEED), 2019

SL No	Course title and relevant information.	Course content
01	<p>Course Title : Industrial Technology on Electrical Engineering & Instrumentation</p> <p>Course Code : EE-S203</p> <p>Participants : 4th year students of Electrical & Electronic Engineering Department of CUET, Chittagong.</p> <p>Duration : 03 Weeks</p> <p>Course fee : Tk. 6,200.00 (Six Thousand and Two Hundred only) per participant.</p>	<p>Electrical Technology: Electrical safety, Electrical switching & protective devices, symbols, Electrical maintenance tools, tackles, Conductors, Cables, insulators, Electrical testing & measuring instrument, Transformer, Generators and motors, Starting and control of induction motors, Electrical Power plant, Substation & distribution system, Earthing, Power factor improvement plant..</p> <p>Instrumentation & Control Technology: Introduction to process Instrumentation, Instrumentation symbol & drawings, Sensing and measurement of process variables, Transmitter & Controller, Control Loop, Control Valve, Sequential Logic Operation, Distributed Control System (DCS), Programmable Logic Controller (PLC), Vibration Analysis Technology.</p> <p>Mechanical Technology: Bearings, Transmission system, Pumps, Turbines, Alignment, Vibration Analysis Technology.</p> <p>Process Technology: Industrial safety.</p>

02	<p>Course Title : Industrial Technology on Electrical Engineering & Instrumentation</p> <p>Course Code : EE-S203</p> <p>Participants : 4th year students of Electrical & Electronic Engineering Department of PU, Chittagong.</p> <p>Duration : 03 Weeks</p> <p>Course fee : Tk.11,600/- (Eleven Thousand and Six Hundred only) per participant.</p>	<p>Electrical Technology: Electrical safety, Electrical switching & protective devices, symbols, Electrical maintenance tools, tackles, Conductors, Cables, insulators, Electrical testing & measuring instrument, Transformer, Generators and motors, Starting and control of induction motors, Electrical Power plant, Substation & distribution system, Earthing, Power factor improvement plant..</p> <p>Instrumentation & Control Technology: Introduction to process Instrumentation, Instrumentation symbol & drawings, Sensing and measurement of process variables, Transmitter & Controller, Control Loop, Control Valve, Sequential Logic Operation, Distributed Control System (DCS), Programmable Logic Controller (PLC), Vibration Analysis Technology.</p> <p>Mechanical Technology: Bearings, Transmission system, Pumps, Turbines, Alignment, Vibration Analysis Technology.</p> <p>Process Technology: Industrial safety.</p>
03	<p>Course Title : Industrial Technology on Electrical Engineering & Instrumentation</p> <p>Course Code : EE-S203</p> <p>Participants : 4th year students of Electrical & Electronic Engineering Department of Any Govt. Approved Private University.</p> <p>Duration : 04 Weeks</p> <p>Course fee : Tk.14,500.00 (Fourteen Thousand & five hundred only) per participant</p>	<p>Electrical Technology: Electrical safety, Electrical switching & protective devices, symbols, Electrical maintenance tools, tackles, Conductors, Cables, insulators, Electrical testing & measuring instrument, Transformer, Generators and motors, Starting and control of induction motors, Electrical Power Generation & Control Technique, Substation & distribution system, Earthing System & Measurement of Earth Resistance, Power factor improvement plant, Parallel Operation of Generators with Synchronization and Load Sharing of Generators, Power plant Starting Procedure, Control Room activities, Inspection & Troubleshooting, Generator Protection System, Assembly & Disassembly of AC Generator, Diesel Engine Generator, Motor Control by AC Drives, PLC Controlled Motor Operation, DC Power Supply, Battery Charging System & Their Maintenance, Emergency Power System.</p> <p>Instrumentation & Control Technology: Introduction to process Instrumentation, Instrumentation symbol & drawings, Sensing and measurement of process variables, Transmitter, Controller & Control Loop, Control Valve, Sequential Logic Operation, Programmable Logic Controller (PLC), Distributed Control System (DCS), Vibration Analysis Technology.</p> <p>Mechanical Technology: Bearings, Transmission system, Pumps, Turbines, Alignment, Vibration Analysis Technology.</p> <p>Process Technology: Industrial safe</p>
04	<p>Course Title : Industrial Technology on Electrical Engineering & Instrumentation</p> <p>Course Code : EE-S203</p> <p>Participants : 4th year students of Electrical & Electronic Engineering Department of SUST, Sylhet.</p> <p>Duration : 04 Weeks</p> <p>Course fee : Tk.8,000/- (Eight Thousand only) per participant.</p>	<p>Electrical Technology: Electrical safety, Electrical switching & protective devices, symbols, Electrical maintenance tools, tackles, Conductors, Cables, insulators, Electrical testing & measuring instrument, Transformer, Generators and motors, Starting and control of induction motors, Electrical Power plant, Substation & distribution system, Earthing, Power factor improvement plant..</p> <p>Instrumentation & Control Technology: Introduction to process Instrumentation, Instrumentation symbol & drawings, Sensing and measurement of process variables, Transmitter & Controller, Control Loop, Control Valve, Sequential Logic Operation, Distributed Control System (DCS), Programmable Logic Controller (PLC), Vibration Analysis Technology.</p> <p>Mechanical Technology: Bearings, Transmission system, Pumps, Turbines, Alignment, Vibration Analysis Technology.</p> <p>Process Technology: Industrial safety.</p>

05. Instrumentation & Control Engineering Department (ICED), 2019

SL No	Course title and relevant information.	Course content
01	<p>Course Title :Industrial control Technology on Electrical Engineering and Instrumentation</p> <p>Course Code : IC-S201</p> <p>Participants : Students of applied physics, electronics and communication Engineering Department of Islamic University, Kushtia</p> <p>Duration : 02 Weeks</p> <p>Course fee : Tk.6,200.00 (Six Thousand Two Hundred only) per participant.</p>	<p>Instrumentation and Control Technology Introduction to Process Instrumentation; Instrument symbols and drawings; Sensing and measurement of process variables; Transmitter; Controller & Control Loop; Control Valve; Sequential Logic Operation; Programmable Logic Controller (PLC); Introduction to Advanced PLC; Distributed Control System (DCS); Operation of a Level Process Station by PLC & Process plant, control room Activities , Inspection and Troubleshooting.</p> <p>Electrical Technology Electrical safety; Electrical switching & protective devices, Electric circuits & circuit components, symbols; Electrical maintenance tools & tackles; Conductors, Cables, Insulators; Electrical testing & measuring instrument; Transformer; Generators; Starting and control of induction motors; Substation and distribution system & Earthing system and measurement of earthing resistance</p> <p>Mechanical Engineering Bearing ; Turbines ; Introduction to Machine Alignment & Vibration Analysis Technique</p> <p>Industrial Health and Safety Personal Protective Gears & Fire Protection Arrangement</p>
SL No	Course title and relevant information.	Course content
02	<p>Course Title :Industrial control Technology on Electrical Engineering and Instrumentation</p> <p>Course Code : IC-S201</p> <p>Participants : students of Electronic and Telecommunication Engineering Department, BSMRSTU</p> <p>Duration : 04 Weeks</p> <p>Course fee : 8,000/- per student (Eight Thousand only) per participant.</p>	<p>Instrumentation and Control Technology Introduction to Process Instrumentation; Instrument symbols and drawings; Sensing and measurement of process variables; Transmitter; Controller & Control Loop; Control Valve; Sequential Logic Operation; Programmable Logic Controller (PLC); Introduction to Advanced PLC; Distributed Control System (DCS); Vibration Data Acquisition and Monitoring Technique; Operation of a Level Process Station by PLC & Process Plant, Control Room Activities , Inspection and Troubleshooting</p> <p>Electrical Technology Electrical safety; Electrical switching & protective devices, Electric circuits & circuit components, symbols; Electrical maintenance tools & tackles; Conductors, Cables, Insulators; Electrical testing & measuring instrument; Transformer; Generators; Starting and control of induction motors; Substation and distribution system & Earthing system and measurement of earthing resistance</p> <p>Mechanical Engineering Bearing; Turbines; Introduction to Machine Alignment & Vibration Analysis Technique</p> <p>Industrial Health and Safety Personal Protective Gears & Fire Protection Arrangement</p>