



Central Board of Irrigation and Power
(More than 9 decades of Service to the Nation in Power Sector)
(Grade A, Category-I Institute Accredited by MoP, Govt. of India)
CBIP Centre of Excellence, Plot No.-21, Sector-32, Gurgaon



5 Weeks Internship Program (Virtual Mode) With Certification

On

POWER GENERATION, TRANSMISSION & DISTRIBUTION WITH GREEN ENERGY AND OTHER TECHNOLOGICAL INTERFACES LIKE AUTOMATION (SCADA / DMS), SMART GRID / MICRO GRID, SMART METER, HOME AUTOMATION WITH AI & ML / IOT AND OTHER.

Commencing from 24th June 2022

WHY YOU SHOULD JOIN CBIP

- Concept of Engineering and design drawing with software.
- Concept of preparing complete estimation with BOM and Teach specification.
- Bid preparation/ tender evaluation.
- Contract document.
- Procurement/supply chain management.
- Project construction management with MS Project premiere software.
- Overall scenario of Power/ Energy at National and International level.
- Conventional Power and its accessories
- Non- Conventional Power and its accessories; Renewable / Green Energy.
- Smart Grid, Automation for Power Utility, SCADA / DMS, Micro Grid, Smart Meter, AI & ML, IOT , Data Engineering.
- Transmission and Distribution Systems
- Control & Protection of Transmission and Distribution Networks/ Substation

PROGRAM MODULE DETAILS

1. Power Generation Overview and Power Generation-

Emerging Power Scenario in India; Overview of Power Generation, Types of Generation:- Conventional and Renewable, Thermal Power Plant, Hydro Power Plant, Gas Power Plant, Nuclear Power Plant, Co-generation; General Layout of a Thermal Power Station.

2. Conventional Power Generation, Boiler, Turbine and their Auxiliaries-

Introduction to Steam Generation & Steam Cycle Theory, Description of Water Tube Boiler, Boiler Circulation Theory, Generator – Working Principle & Construction Details, Overview of Steam Turbine. Draft System and Fans; Coal Milling Plant; Coal Milling Plant; Air Preheating Arrangement; Emission Control System- Flue Gas Cleaning, Dust Suppression System and ESP; Regenerative Feed Water Heating System, De-aeration and HP/LP FW Heaters; Condenser and CW System with Concept of Turbine Vacuum System; Turbine Lube Oil System; CEP, BFP and Booster Pumps; DM Water Treatment and Service Water System.

3. Electrical Equipment of Thermal Power Plant-

Generator Excitation System; Generator Cooling and Sealing System; Generator Synchronization & Capability Curves; Transformer – Working Principle, Construction & Classification; Installation, Commissioning and Various Tests in Transformer including DGA; Working Principle and Construction of 3-Phase Induction Motors; Protection System – Operating Principle of Relay, their Properties and Classification; Universal Torque Equation of Relay; Differential Relays & Earth Fault Relay.

4. Alternative Sources of Power Generation-

Global & Indian Scenario of the Renewable Energy and Targets; Solar PV Power in India – Policy and Regulatory Frame Work; Physics of Solar PV Technology, Working Principle, Types, Design, PV Module and Characteristics; Types of Solar PV Plant – Stand Alone, Off Grid, Grid Connected and Hybrid Plant Architecture; Balance of System: PV Cell – Types, Data Sheet Analysis; Inverter – Types, Characteristics, Comparison, Anti-Islanding; DC & AC Cables; Connectors; Surge Arrestor – Types and Selection; Lightning Arrestor; Earthing. Safety Standards etc.; Solar PV system design, 20 kW Case Study, 5 kW System Design with Hand-Calculation; Solar PV Design and Safety Overview, Grid Connectivity and Inspection Procedure; Renewable Energy – Hydro Power (Small, Mini & Micro); Renewable Energy – Wind Power; Other Alternative Sources of Power Generation – Biomass, Geothermal, MHD, OTEC etc.

5. Transmission and Distribution Systems-

LV, HV, EHV & UHV Transmission System; Layout of Switchyard and its Equipment – CT, PT, CB, DT etc.; CT/ PT/ Circuit Breakers/ Transformer – Working Principle, Construction, Types and Parameters; Transmission Line and its Components; AT&C Losses and Reduction Methodology; Load Scheduling and Grid Management. Energy Metering Introduction, Government initiatives in distribution reforms, Energy meters towards digitization and technology, Metering Protocol, Types of Meters, Smart Metering, Net Metering, Metering Technologies and AMR application.

6. Control & Protection-

T & D Networks/ Substation Protection and its Philosophy. Relay Co-ordination studies, Relay setting, Configuration and Software

7. Smart Technologies-

Smart Grid, Automation for Power Utility, SCADA / DMS, Micro Grid, Smart Meter, AI & ML, IOT , Data Engineering.

8. Utilities-

Discom, Distribution systems overview, Planning, Design, Operation & Maintenance. Roles and Responsibilities upto 66kV

IMPORTANT POINTS

ELIGIBILITY: 2nd year/ 3rd year/ 4th year Engineering students in Electrical/ Electrical and Electronics/ Power/ Mechanical/ Civil Engineering from Premier Universities/ Institutes with minimum 60% marks.

COURSE FEES: Rs. 10,000

For Registration, Brochure and more details of the Program, please refer to our website www.cbip.org and contact our CBIP Official with following details.

ADDRESS FOR CORRESPONDENCE:

CBIP, Centre of Excellence, Plot No. 21, SECTOR-32, Gurugram-122001.

Contact Person- Sh. Manas Bandyopadhyay

Mob- 9871303367, Email ID-

manasbandyopadhyay@cbip.org.

BANK DETAILS IN CASE OF E- TRANSFER

Beneficiary Name	: Central Board of Irrigation & Power
PAN No.	: AAAJC0237F
GST No.	: 06AAAJC0237F1ZW
Bank Details	: Indian Overseas Bank, Sco 26, Sec-31, Gurgaon, Haryana, PIN-122002
Saving Bank A/c No.	: 236701000000922
Branch RTGS/NEFT/IFSC	: IOBA0002367
Branch Code	: 2367