Be informed.

Power Engineering (Third Class)

5-month certificate (SAIT) • Kindersley

WHAT YOU WILL LEARN

Students will work through the 60 SAIT Third Class Power Engineering modules (PWEN 130, 131, 138 and 139). This is an instructor-led, theory-based course without a hands-on lab component.

Successful completion of the SAIT Part A1, A2 and Part B1, B2 theory course and exams will give students six months' credit towards the Technical Safety Authority of Saskatchewan's steam time requirement at the Third Class level. Students will have the opportunity to write the Part A and Part B provincial exams.

Optional safety courses will also be offered.

ENTRANCE REQUIREMENTS

- Fourth Class Provincial License or Certificate
- English language requirement

Please note that if you do not meet these entrance requirements, special admissions options may be available.

SCHOLARSHIP ELIGIBLE

Apply before April 30 and you may be eligible for an Entrance Scholarship of $500-$5,000. Apply before June 30—if you are in Grade 11 and have a 70% average, you may be eligible for a $1,000 Early Entrance Award.

COURSE LIST

PART A1

- Algebraic Operations, Logarithms & Problem Solving
- Trigonometry
- Mensuration
- Forces & Friction
- Work, Power, Energy: Linear & Angular Motion
- Strength of Materials; Bending of Beams
- Simple Machines; Pressure, Density, Flow
- Heat, State Change, Calorimetry
- Thermal Expansion & Heat Transfer
- Steam Properties & Calculations
- Gas Laws & Calculations
- Chemistry Fundamentals
- Metallurgy & Materials
- Corrosion Principles
- Industrial Drawings

PART A2

- Legislation & Codes for Power Engineers

PART B1

- Watertube Boilers Design
- Special Boiler Designs
- Boiler Construction (USCS)
- Boiler Heat Transfer Components
- High Pressure Boiler Fittings
- Burner Designs and Supply Systems
- Boiler Draft and Flue Gas Equipment
- Boiler Control Systems (USCS)
- Boiler Procedures
- Internal Water Treatment for Boilers
- Boiler Water Pre-treatment
- Pump Designs and Operations
- Pump Head Calculations
- Welding Procedures and Inspection
- Pressure Vessels
- Code Calculations – ASME Section 1
- Fuels, Combustion, Flue Gas Analysis
- Piping Design, Connections, Support
- Steam Traps, Water Hammer, Insulation
- Valves & Actuators
- Electrical Theory & DC Machines
- AC Theory & Machines
- AC Systems, Switchgear, Safety
- Electrical Calculations
- Control Loops & Strategies
- Instrument & Control Devices
- Distributed & Logic Control
- Safety Management Systems
- Fire Protection Systems

PART B2

- Steam Turbine Principles and Design
- Steam Turbine Auxiliaries and Operation
- Turbine Condenser Systems
- Gas Turbine Principles and Designs
- Gas Turbine Auxiliaries and Operation
- Internal Combustion Engines
- Cogeneration Systems & Operation
- Compressor Theory and Designs
- Compressor Auxiliaries and Operation
- Refrigeration Principles and Systems
- Refrigeration Auxiliaries and Operation
- Heat Exchangers and Cooling Towers
- Fired Heaters
- Wastewater Treatment
- Plant Maintenance and Administration

For more information:
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