

Process Measurement Instrumentation

March 15-19, 2003
Algozaibi Hotel, Al-Khobar

March 22-26, 2003
Holiday Inn - Minhal, Riyadh

March 22-26, 2003
Dusit Hotel, Dubai



This hands-on course concentrates on the equipment associated with monitoring temperature, pressure, fluid level, and fluid flow, using measurement elements such as thermocouples, flow sensors, pressure sensors, level sensors, and associated equipment.

Course Description:

This course examines the operating principles of common primary process measurement elements such as thermocouples, RTD's, flow sensors, pressure sensors, level sensors, and the equipment associated with these elements. Applicable test equipment also is discussed.

Recommended for:

This course is recommended for instrumentation and control technicians and engineers who design, install and maintain process measurement systems.

Benefits:

Participants can use the skills and knowledge gained in this course to effectively use process measurement instrumentation to measure and control plant parameters and to maintain and test instrumentation to improve plant efficiency, and reduce downtime.

A 5 day training course
USD 2,500

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before February 26, 2003

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Programme Outline

Course Timings: Registration will be at 8:00 on beginning day. The course will commence at 8:30 and conclude at 16:00 with refreshment breaks at regular intervals. Lunch will be served at 11:45 following close of day.

Day 1 Registration :

Process Measurement Instrumentation

- I. Fundamentals of Measurement
- A. Fundamental units
- B. Basic instrument channel
- C. Direct vs. inferred measurement
- D. Static and dynamic characteristics

Day 2 Pressure Measurement

- A. Hydrostatic pressure
- B. Manometer and Bourdon tube
- C. Diaphragm and bellows pressure devices
- D. Pressure capsules and dead weight gage
- E. Capacitance-type sensor
- F. Diaphragm seals, pulsation dampeners, and pressure sensor positioning

Day 3 Temperature Measurement

- A. Temperature scales and types of thermometers
- B. Thermocouple theory, metals, and laws
- C. Thermocouple tables
- D. Designations for thermocouple wire
- E. RTD construction and measuring circuits
- F. Thermistor construction and application
- G. Thermowells
- H. Radiation pyrometry
- I. Broadband, bandpass, and brightness pyrometers

Day 4 Flow Measurement

- A. Units of flow, flowmeters, and flow characteristics
- B. Bernoulli's equation
- C. The pitot and annubar tubes
- D. Secondary elements
- E. Magnetic and ultrasonic flowmeters
- F. Rotameters
- G. Nutating disc

Day 5 Level Measurement

- A. Point-contact method
- B. Gage glass
- C. Ball and chain float
- D. Magnetic bond method
- E. Displacers and detectors

Analytical Measurement

- A. Chemical reactivity and atomic mass
- B. Concentration
- C. Electrolytes and pH measurement
- D. Conductivity measurement

About your Course Leader: JAMES BLACKBURN

Mr. Blackburn is a graduate of BSc Physical Electronics 1986, solid state physics, device manufacture and electronic applications. (awarded with commendation, this was a 4 year part time course at the University of Northumbria).

PRINCIPAL ACADEMIC QUALIFICATIONS

- 1986 BSc Physical Electronics, solid state physics, device manufacture and electronic applications. (awarded with commendation, this was a 4 year part time course at the University of Northumbria).
- 1982 H.N.C. Computer based industrial control systems. (awarded with merit).
- 1980 City and Guilds Full Technicians Certificate in instrumentation and control (with distinctions).
- 1979 City and Guilds A and B certificates in Electrical installation.

OTHER PROFESSIONAL QUALIFICATIONS

- 2000 Achieved Chartered Physicist status with The Institute of Physics.
- 96 To date Formal Amat training on equipment and process for Centura MCVD, BWCVD, HEWEB, HDP-CVD, DCVD BLACK DIAMOND and BLOK (LOK). Endura PVD
- 1996 Standard First Aid Course (Red Cross) and full ERT training.
- 1995 Bishop Auckland College 16th Edition, IEE Wiring Regulations Course. Vendor training: P.L.C. Courses, hydraulics and pneumatics courses, Westinghouse and Honeywell DCS courses, CTI cryogenics and Edward's vacuum courses

WORK EXPERIENCE

- Dec 97 to Applied Materials. Thin Films (DCVD, HDP-CVD and MCVD) Process / Equipment Engineer(2yr)
- Mar 2002 AMAT Technical Trainer HDPCVD Equipment or Process (4yr)TPS field process support for PE, HDP-CVD and Black Diamond process. Customer support engineer (process and equipment). HDP-CVD system startup, tier 1 and tier2/3. Process optimization tuning and troubleshooting throughout Asia, US and mainland Europe. Defect analysis (TEM, SEM / EDX)
- Oct 96 to Siemens Microelectronics. Equipment maintenance.
- Dec 97 Start-up, process tuning and qualification of 4 Centura (Polycide/WSI and Tungsten) and 2 Endura systems. Ramp up of 16 MDRAM and change over to 64 MDRAM. System failure analysis, optimisation, maintenance and development of procedures.
- Mar 93 to Nuclear Electric, Sizewell B. Contract Commissioning Engineer/Manager (contract completed).
- Oct 96 Commissioning and Process tuning (TPM, TQM systems) of the Westinghouse DCS controlled reactor protection system. This included tests ranging from soft ware verification, Transducer accuracy and control loop calibration to PLC (Modicon) I/O tests. Fault diagnosis to component level and reporting. Design calculations verification and response tests. Management of up to 30 engineers.
- Nov 92 to Enron Power Corporation, contract commissioning manager (contract completed).
- Mar 93 Commissioning, design and process tuning support of the Westinghouse DCS for 8 (150mw) Westinghouse gas turbines and their interface (Foxnet controller) to the plant Foxboro I/A series DCS.
- Jan 88 to Military Service. Various Locations.
- Nov 92 Flight Lieutenant (General Duties) Management of various sections RAF. Five year short service commission.
- 1982 to Glaxo Operations UK. Instrument Technician (shift production team support).
- Jan 88 First line maintenance, calibration process optimisation and fault diagnosis to component level, of microprocessor based control systems and their electro - pneumatic interfaces as follows: Edward's high vacuum freeze dryers, high speed handling robots and plant wide process control under Honeywell TDC 2000.
- 1979 to Northumbrian Water Authority. Instrument Technician (SCADA).
- 1982 Calibration and maintenance (to component level) of digital, microprocessor and analogue based instruments.
- 1975 to 79 Balfour Kilpatrick Installations. Electrical Engineering Apprentice Training (JIB).

**“In business, people make all the difference.
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people.”**



Process Measurement Instrumentation



Mar 25-19, 2003 - Alghosaibi Hotel
Mar 22-26, 2003 - Holiday Inn Minhal, Riyadh
Mar 22-26, 2003 - Dusit Hotel, Dubai

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Registration Form

Name: _____
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Full payment must be received prior to the start of the course without which Entrance will be prohibited

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WHEN?

Mar 15-19, 2003 Alghosaibi Hotel
Al-Khobar
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Riyadh
March 22-26, 2003 Dusit Hotel
Dubai

HOW MUCH

USD 2,300

I am unable to participate in course but would like to be send information about future course in Saudi Arabia/Gulf

Terms and Condition

HOTEL INFORMATION:

Alghosaibi Hotel - AlKhobar Tel: 03 882-2882 Fax: 03 882-2321
Holiday Inn - Riyadh Tel: 01 478-2500 Fax: 01 477-2819
Dusit Hotel - Dubai Tel: 04 343-3333 Fax: 04 343-3327

ACCOMMODATION:

The Course fee does not include accommodation. A limited number of reduce rate rooms have been reserved for participator. An accommodation booking form will be sent you with your confirmation letter.

BOOKING CONDITIONS:

A confirmation letter and invoice will be sent to you on receipt of your booking. Payment must be received before the Course date. If payment is not received, participator will be asked to guarantee payment at registration with a personal credit card. Your fee includes documentation, lunch and refreshments. If your are unable to attend, a substitute participator is always welcome. If you cancel your place more than one month before the event, we shall charge a 750 SR

Administration fee. No refunds can be made if you cancel within one month before of the event Cancellation must be made in writing and will be acknowledge in writing. It may be necessary for reasons beyond the control of the organizers to after the content, timings or venue Al-Busaili Co. will not accept liability for any transport delays and in such circumstance, the normal cancellation restrictions apply.

DATA PROTECTION:

The personal information provided by you will be held on a database and may be shared with Companies in AlBusaili Co. Sometimes your details may be made available to external companies for marketing purpose.

Purpose, please write to Database Administration AlBusaili Co.
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Please if possible send the deposit slip together with the registration form after filling it through fax or e-mail mentioned above.