Engine Emissions Measurement

Monday 25 – Friday 29 June 2018
**Course director**
Professor Gordon Andrews
School of Chemical and Process Engineering

**Course aims**
A specialist course, with extensive participation by presenters from Horiba Instruments that is aimed at teaching the latest developments in automotive and industrial engine emissions measurement procedures and regulation compliance procedures. The course is directed at both emissions legislation compliance and at engine and catalyst development for low emissions. Passenger car emissions legislation measurement requirements are fully detailed for ultra-low emission Si and diesel vehicles. Heavy duty diesel emissions legislation measurement methods for on-road and off-road engine uses are fully described, including the latest European proposals for measurement of particle number as well as mass. The specialist areas of time resolved emissions in test cycles for emissions control engine development is also covered in detail. The accurate determination of CO \textsuperscript{2} emissions and fuel consumption from the legislated test cycles is a major theme of the course. The course also covers the fast growing area of in-vehicle emissions measurement for real world driving emissions measurement. Several areas are covered that are currently not regulated in the Europe but are in the USA and maybe regulated in future in Europe. This includes VOC speculation for ozone forming potential evaluation as well as air toxics and PAH speculation of diesel particulates for carcinogenic toxic emissions evaluation.

**Who should attend**
The course is aimed at engine emissions measurement personnel and their supervisors. It is particular suitable for newly appointed staff in these areas, who need to learn quickly about emission measurement methods. It is also relevant to operators of diesel and gas turbine electric generation equipment who have to make emissions measurements, perhaps, for the first time, under the Environmental Protection Act. The course covers both existing instrumentation and new developments in emissions measurement techniques and instruments, and will be of interest to those who wish to learn about the latest developments in emissions measurement technology.

**Accreditation**
This course is in association with the Institution of Diesel and Gas Turbine Engineers, which is devoted to the advancement of Diesel and Gas Turbine Engineers, Gas Turbines and related products and technology.

**Programme**

**Monday 25 June 2018**

**Who are the main speakers?**
Ford Motor Company, Nissan

**What is the course about?**
A great course for anyone who wants or needs a broad understanding of what is involved in tackling vehicle emissions and meeting legislation.

**Vehicle Certification Agency**

**Wednesday 27 June 2018**

**Who are the main speakers?**
Rick Spurgeon, HORIBA UK Limited

**What is the course about?**
Engine test bed direct exhaust gas analysis for development work and for test cycle modality analysis.

**Wednesday 27 June 2018**

**Who are the main speakers?**
Rick Spurgeon, HORIBA UK Limited

**What is the course about?**
Engine test bed direct exhaust gas analysis for development work and for test cycle modality analysis.

**Thursday 28 June 2018**

**Who are the main speakers?**
Rick Spurgeon, HORIBA UK Limited

**What is the course about?**
Heavy duty diesel emissions measurement.

**Friday 29 June 2018**

**Who are the main speakers?**
Rick Spurgeon, HORIBA UK Limited

**What is the course about?**
Engine VOC and PAH emissions.
Further details

Venue
The venue for the course is Weetwood Hall Conference Centre and Hotel which offers first-class hotel facilities, a business centre and ample parking facilities.

Weetwood Hall Hotel is ideally situated 15 minutes north of the centre of Leeds in wooded grounds at the junction of the Otley Road and the outer ring road. It is just 15 minutes from Leeds Bradford International Airport and a short distance from the A1, M1, M606, M621 and M62 motorways.

Further details can be found at www.weetwood.co.uk

Course fees
The following course fees include the cost of tuition, course materials, lunches and light refreshments for the day(s) of attendance:

£1800  Full five days
£450    Any one day

Delegates are responsible for their own evening meals except on Tuesday 26 June when the course dinner is included.

Accommodation
Bed and breakfast accommodation is available at the course venue, Weetwood Hall Conference Centre and Hotel. We have negotiated the following special rates per night:

Sunday evening, bed and breakfast £83
Monday – Tuesday, evening, bed and breakfast £87

To take advantage of these special rates, please book by contacting the hotel direct on 0113 230 6000 (Stevie Standerline), E: stevie.standerline@weetwood.co.uk. Please quote University of Leeds CPD Unit and the course name when contacting Weetwood Hall to book accommodation.

Please note that accommodation bookings must be made two weeks before the course commences at the latest to qualify for the special rates and to guarantee room availability. Any accommodation requests after this date will be subject to availability and rates. A list of alternative hotels is available on request.

Course dinner
The course dinner will be held at a Leeds city centre restaurant and is included in the course fee. This will take place on Tuesday evening and transport from and to Weetwood Hall Hotel is provided. The dress code is smart casual. If you would like to attend please indicate when booking.

Accessibility
Please let us know if you have any specific requirements including any access or dietary requirements in relation to this course.

How to Book
Booking for this course should be completed through our secure online store using debit or credit card. To complete your booking please follow the instructions below:

Online Booking
1. Access our online store at: https://store.leeds.ac.uk
2. Select Conferences and Events in the left-hand navigation bar.
3. Select CPD Faculty of Engineering
4. Select the course or event for which you wish to register and click on “Book”.
5. If you are a new user, please follow the instructions to register. If you already have an account log in as instructed.
6. Complete the application process as directed by the booking system.

You will receive an automatic confirmation email within 24 hours of your booking.

For online booking queries and for all other enquiries please contact:
Course Coordinator
CPD, Conference & Events Unit,
Faculty of Engineering
School of Chemical and Process Engineering, 3.11
University of Leeds
LEEDS, LS2 9JT, UK
T: + 44 (0) 113 343 2494
F: + 44 (0) 113 343 2511
E: cpd@engineering.leeds.ac.uk
W: www.engineering.leeds.ac.uk/short-courses
@LeedsUniCPD

Terms and conditions for booking
Payment in full should accompany your booking. The course fee is exempt from VAT. Fees must be paid in full no later than 15 working days before the course commences. Failure to pay may result in attendance being refused. Registrations are accepted on the understanding that the printed programme is given in good faith but may have to be re-scheduled or the speakers changed for reasons outside our control. The University of Leeds reserves the right to cancel or postpone the course, in which case fees will be refunded in full. In the event of cancellation, the University will not be held liable for delegates travel or accommodation expenses. Delegates will receive a full refund for cancellations made within 7 days of online booking, except where the booking has been made for an event commencing within the next 7 days. Where a delegate wishes to cancel a registration after this 7 day period, written cancellations received up to 15 working days before the course will be subject to an administrative charge of 20% of the total remittance. After this date the full fee is chargeable and no refunds will be made, this also applies for non-attendance but copies of the course documents will be sent. Substitutions may be made at any time. If you are unable to complete your registration using the online booking system please contact the CPD, Conference & Events Unit to discuss alternative arrangements.