Pharmaceutical Medical Gas Testing
Monday 4 – Friday 8 February 2019

100% of delegates that responded in 2018 would recommend this course to colleagues
Pharmaceutical Medical Gas Testing

Monday 4 – Friday 8 February 2019

About the course
This five day short course will be delivered by a combination of learning methods including presentations, group discussions and practical sessions explaining the principles of pharmaceutical medical gas testing.

The course will include:
- practical testing with a range of different equipment
- troubleshooting and assessing defective systems
- active assistance from experienced tutors
- positive team building activities

A short written assessment (exam) is undertaken at the end of the course. There will also be a work based practice report to be completed.

Who should attend
This course will be suitable for pharmacists and other healthcare professionals with experience and responsibilities for, or an interest in, medical gas testing. It is essential for those who wish to register as QC (MGPS) under the HTM.

Please note, if you are enquiring or registering specifically to follow through to registration as a medical gas tester you will also need to satisfy the criteria laid out in the HTM. It is essential for those who wish to register as QC (MGPS) under the HTM 02-01.

Learning objectives
On completion of this course, you will be able to:
- demonstrate a knowledge of HTM 02 and Permit to Work relating to medical gases
- demonstrate a knowledge of health and safety relating to medical gases
- demonstrate a knowledge of medical gases production and properties, and the application of GMP to medical gas production
- demonstrate a knowledge of uses and clinical risks associated with medical gases
- make critical assessment on health and safety issues such as OES, MEL and STEL
- identify and resolve problems associated with medical gas systems
- interpret test results of medical gas systems and take appropriate actions
- identify and resolve any problems associated with testing equipment
- document relevant activities and interventions

What our previous delegates say:
“Essential learning for all QC (MGPS)”
“The best preparation for Medical Gas testing you can hope for”
“Great course, very informative with a good mix of presentations and practicals.”
“Excellent week. Learned a huge amount from individuals with a wealth of knowledge and practical experience.”

Reassessment course
There will be a two day refresher and reassessment course taking place in November 2019 which is specifically designed for those who require the formal assessment of competency under HTM 02-01.

Programme

Monday 4 February 2019
09.00 Registration and coffee
09.30 Course introduction
   - Objectives
   - Work of the Medical Gas Sub-Group and Medical gas policy
   Theresa Hughes QC (MGPS) and QA Specialist (NHS) Reading, Course Director
10.20 Introduction to medical gases and their uses
   Tim Sizer Regional QA Specialist NHS South West
12.00 Introduction to HTM 02-01 (2006)
   Key principles and its application in practice
   Richard Maycock Medical Engineering Systems Limited
12.30 Lunch
13.00 Key MGPS features
   - Oxygen VIE and PCC
   - Medical and surgical air plant
   - Vacuum and AGSS plant
   - Manifolds
   Richard Maycock Medical Engineering Systems Limited
14.30 Refreshment break
14.45 On-site practical
   Introduction by Theresa Hughes Course Director
   a VIE – explanation of how it works and issues relating to it
   Richard Maycock Medical Engineering Systems Limited
   b Medical Air Compressor – explanation of how it works and issues relating to it
   Adrian Fairbrother QC (MGPS)
   c Manifold – explanation of how it works and issues relating to it
   Ed Doyle QC (MGPS) Altec (Analytical and Technical) Services Ltd
16.15 Manufacture of medical gases and The role of the QP
   Peter Henrys BOC Healthcare
17.15 Notices
   Theresa Hughes
17.30 End of day one
19.00 Informal meet and greet drinks in the Copthorne hotel bar (optional)
### Tuesday 5 February 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08.50</td>
<td>Gas safety in relation to MGPS</td>
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<tr>
<td>09.50</td>
<td>Aspects of MGPS engineering (Part 1): <strong>Configuration of central sources of supply, emergency reserve supplies and mobile emergency backfeed manifolds provision</strong></td>
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<tr>
<td>10:35</td>
<td>Refreshment Break</td>
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<tr>
<td>10:50</td>
<td>Aspects of MGPS</td>
</tr>
<tr>
<td>10:35</td>
<td>Workshop ‘permit to work’ system</td>
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</tbody>
</table>
| 11.45 | Introduction to pharmaceutical testing of gases | - How medical gases are tested  
- How instrumentation does its job | Adrian Fairbrother, Omicron Ltd |
| 12.30 | Lunch |
| 12.50 | Workshop sessions **a**: OXYGEN identity and purity methods | - Andrew Sully, QC (MGPS) Cardiff and Vale NHS Trust  
- Richard Skidmore, Southend University Hospital  
- Richard Sutherland, QC (MGPS) Omicron Ltd  
- Adrian Fairbrother, QC (MGPS)  
- Richard Sutherland, QC (MGPS) Omicron Ltd |
| 17.00 | Notices | Theresa Hughes, Course Director |
| 17.15 | End of day one |

### Wednesday 6 February 2019

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08.50</td>
<td>Moisture in medical gas systems</td>
</tr>
<tr>
<td>09.50</td>
<td>Introduction to ‘permit to work’ system and B forms**</td>
</tr>
</tbody>
</table>
| 10.35 | Workshop ‘permit to work’ system | Role-play workshop  
Richard Maycock, Medical Engineering Systems Limited  
Richard Sutherland, QC (MGPS) Omicron Ltd |
| 11.45 | Introduction to pharmaceutical testing of gases | - How medical gases are tested  
- How instrumentation does its job | Adrian Fairbrother, QC (MGPS)  
- Richard Sutherland, QC (MGPS) Omicron Ltd |
| 12.20 | Lunch |
| 12.50 | Workshop sessions **a**: OXYGEN identity and purity methods | - Andrew Sully, QC (MGPS) Cardiff and Vale NHS Trust  
- Richard Skidmore, Southend University Hospital  
- Richard Sutherland, QC (MGPS) Omicron Ltd  
- Adrian Fairbrother, QC (MGPS)  
- Richard Sutherland, QC (MGPS) Omicron Ltd  
- Richard Skidmore, Southend University Hospital  
- Richard Sutherland, QC (MGPS) Omicron Ltd |
| 17.00 | Notices | Theresa Hughes, Course Director |
| 17.15 | End of day three |

### Thursday 7 February 2019

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08.50</td>
<td>The Basic Tool Kit</td>
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<tr>
<td>09.10</td>
<td>Instrument calibration</td>
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<tr>
<td>09.35</td>
<td>Calibration gases – when used etc.</td>
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<tr>
<td>10.00</td>
<td>Refreshment Break</td>
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<tr>
<td>10.15</td>
<td>Calibration of Instruments – demonstration/workshop</td>
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<tr>
<td>11.00</td>
<td>Common problems that occur with equipment</td>
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<tr>
<td>11.45</td>
<td>Measurements of particulates</td>
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<tr>
<td>12.30</td>
<td>Lunch</td>
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| 13.00 | Problem solving workshop (5 stations) **a**: Testing a compressor | - Richard Sutherland  
- Richard Skidmore  
- Richard Sutherland  
- Richard Sutherland  
- Richard Sutherland |
| 13.45 | Medical Gases – a clinician’s view point | Zain Haider, Consultant in Emergency Medicine, Royal Berkshire NHS Foundation Trust |
| 14.30 | Round-up, feedback on test and what happens next? | Includes work based practice preparing for registration | Theresa Hughes, Course Director |
| 15.00 | Closing summary, close of course | Theresa Hughes, Course Director |

### Friday 8 February 2019

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>08.45</td>
<td>Introduction to day five and welcome (Copthorne Hotel)</td>
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<td>09.00</td>
<td>Oxygen conservation</td>
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<tr>
<td>09.45</td>
<td>Novice QC (MGPS) – pressures of the job</td>
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<tr>
<td>10.30</td>
<td>Refreshment break</td>
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<tr>
<td>10.45</td>
<td>MGPS line pressure – why is it useful for the QC to know</td>
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<tr>
<td>11.45</td>
<td>Written test / Assessment (1 hour)</td>
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<tr>
<td>13.00</td>
<td>Lunch</td>
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<tr>
<td>13.45</td>
<td>Medical Gases – a clinicians view point</td>
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<td>Round-up, feedback on test and what happens next?</td>
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<tr>
<td>15.00</td>
<td>Closing summary, close of course</td>
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**The Pharmaceutical Medical Gas Testing course is a collaboration between the University of Leeds, the University of Manchester and NHS Technical Specialist Education and Training (TSET).**

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**Course Director**  
Theresa Hughes, QC (MGPS) and QA Specialist (NHS) Reading
Further information

Venue
The course will be held at Midland Medical Services Ltd, Rowley Regis, West Midlands, B65 9BY on Monday, Tuesday, Wednesday and Thursday and Friday will take place at the Copthorne Hotel Merry Hill Dudley, DY5 1UR, a short distance away. Directions to the venues will be included within the delegate joining instructions.

Course fees
The following course fees include the cost of tuition, course materials, lunches and light refreshments for the day(s) of attendance. Delegates are responsible for their own evening meals except on Tuesday 5 February when the course dinner is included.

£1160 Full five days

Accommodation
Bed and breakfast accommodation can be booked on behalf of delegates at the Copthorne Hotel Merry Hill Dudley, DY5 1UR and this can be added to your invoice, if required. All rooms are double for sole occupancy and have en-suite facilities. Copthorne Hotel Merry Hill Dudley is approximately 5 miles from Midland Medical Services and delegates are responsible for making their own way to the course venue Monday – Thursday.

We have negotiated the following bed and breakfast rates:
Sunday 3 February £84 per night
Monday 4 – Thursday 7 February £101 per night

Course dinner
The course dinner will be held at the Copthorne Hotel Merry Hill Faradays restaurant on Tuesday evening and is included in the course fee. 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
Delegates can book their place via our secure online store using debit or credit card or by completing a manual registration form to pay via invoice. Please follow the guidance below on how to complete your booking:

Manual registrations
1. Please email cpd@healthcare.leeds.ac.uk to request a registration form or call +44 (0)113 343 8104
2. Send your completed registration form along with payment or purchase order document to the address below.

Payment can be made by bank transfer, credit card, or by cheque made payable to the ‘University of Leeds’. Please note that if you have requested an invoice, registrations received without a supporting purchase order document cannot be processed. Terms of payment are 30 days from date of invoice. Fees must be paid no later than 15 working days before the course commences.

Online booking
1. Log on to our Online Store at: https://store.leeds.ac.uk/
2. Select Conferences and Events in the left-hand navigation bar.
3. Select CPD Pharmaceutical and Healthcare courses
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.
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:
Katie Warner – CPD, Conference and Events Coordinator
CPD, Conference and 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 8104
E: cpd@healthcare.leeds.ac.uk
W: www.engineering.leeds.ac.uk/short-courses
@LeedsUniCPD

Terms and conditions for booking
Payment in full should accompany your booking; unless you have requested to pay by invoice (in which case a valid purchase order document must accompany your registration). Terms of payment are 30 days from invoice and invoices 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. The CPD Unit takes your privacy seriously and we will only use your information to provide information on our CPD courses and relevant engineering events. We will not pass your details to any other organisations. If you have opted in to receive details of future CPD courses from us, you can unsubscribe at any time by emailing us at cpd@healthcare.leeds.ac.uk.