APPLICATION FORM

- APRIL 2015 -

Please indicate which course(s) you wish to attend:

- ❑ **Safety of Medical Electrical Equipment** **14th April 2015**
- ❑ **Safety of Medical Electrical Systems** **15th April 2015**

Registration Fees:
1 day (select above) £195 + VAT @ 20%
Both days: £350 + VAT @ 20%

Name _____

Department _____

Address (Work) _____

_____

_____ **Postcode** _____

Telephone _____

E-Mail _____

Special Dietary Requirements _____

- ❑ **I enclose a cheque payable to RLBUH (NHS) Trust for the sum of £** _____
- ❑ **Please send an invoice (purchase order number attached)**
- ❑ **I wish to pay by credit card (a payment form will be sent to you)**

Signature _____

Please return this form to:
ESM Course Organiser
Medical Physics & Clinical Engineering
Royal Liverpool University Hospital
Prescot Street, Liverpool, L7 8XP
Tel: 0151 706 4202 Fax: 0151 706 5803
E-mail: l.mcnally@liverpool.ac.uk

THIS FORM MAY BE PHOTOCOPIED

Application

Places are limited and are allocated on a first come first served basis. Please check availability prior to applying.
Applications should be returned by post, fax or e-mail attachment, accompanied by a cheque (payable to RLBUHT NHS Trust) or purchase order number. Credit card payment can be accepted upon request. Places cannot be reserved pending payment. Confirmation will be sent to you with important pre-course documentation. Allow time for study of the pre-course documents.

Registration Fee

All prices exclude VAT, UK NHS Trusts are VAT exempt. Registration fees cover tuition, documentation, refreshments/lunch. It does not cover accommodation.

Cancellations

Cancellations must be made in writing to the organisers.
The following charges apply:
• 15 or more days before event: 25% of the registration fee.
• Less than 15 days before event or no notification: 100% of the registration fee.
•Substitutions will be accepted if notification is received in writing prior to the course.

Accommodation

Delegates are asked to make their own arrangements however a list of local hotels is available upon request. Accommodation should not be booked until confirmation of your course place has been received from us.

Notes to Applicants

Please note the above conditions of booking.
• In the event of unforeseen circumstances, the organisers reserve the right to alter speakers, programme or venue.
• If you do not receive acknowledgement of your application or a pre-course questionnaire **3 weeks prior to** the course, check the progress of your application within your organisation and contact the course organiser.
• Make sure that you use the current version of the British Standard - BS EN 60601-1:2006. If you are in any doubt as to which standard to use, contact the course organiser.

Course Organiser

Medical Physics & Clinical Engineering
Royal Liverpool University Hospital
Liverpool, L7 8XP
Tel: 0151 706 4202
Fax: 0151 706 5803
Email: l.mcnally@liverpool.ac.uk
www.rlbuht.nhs.uk/MPCE

CD 1363/22

The Royal Liverpool and Broadgreen University Hospitals NHS Trust

NHS

LIVERPOOL SHORT COURSES IN ELECTRICAL SAFETY

Medical Physics & Clinical Engineering

ISO 9001: 2008 ***ISO 13485: 2003***

Safety of Medical Electrical Equipment
BS EN 60601-1:2006
(SME)

Introduction

There is a legal requirement under the Medical Devices Directive to design and construct equipment in such a way to minimise the risk to the patient and the operator. In order to comply with the MDD, manufacturers must demonstrate that they have met its essential requirements for safety, this is demonstrated by compliance with the relevant Harmonised Standards. For Medical Electrical Equipment, the Harmonised Standard for safety is BS EN 60601-1. The third edition of the standard (released 2006) incorporates some of the old collateral standards, with considerable effort in the new edition to align requirements for electrical performance of medical devices with those for I.T. There are also considerable additions on risk management issues.

Objectives

To provide Biomedical Engineers & Technicians with a thorough knowledge of the safety aspects of the 2006 BS EN60601-1 Standard and to improve their competence in performing field safety testing.

Course Summary

- Introduction to the 60601-1 standard
- Effects of electricity on the body
- Electrical hazards from equipment
- Small/large currents arising from working and faulty equipment
- Allowable leakages and impedances for different classes of medical equipment and types of applied part
- Test configurations for compliance
- Safety testing and Inspection
- Review of pre-course questionnaire

Safety of Medical Electrical Systems
BS EN 60601-1:2006
(SMS)

Introduction

Medical equipment is often found interconnected with other medical equipment, or with non-medical apparatus such as computers. Medical equipment may also be connected remotely to other equipment in non-medical rooms such as a Hospital Information System (HIS). These systems may be supplied by a manufacturer as a package, or may be configured locally. Examples of such systems include theatre trolleys, infusion stacks, endoscopy towers, image recording facilities, ITU networks, etc. Until recently, the safety of medical electrical systems were dealt with in the separate collateral standard BS EN 60601-1-1:2001. This subject is now incorporated in the main BS EN 60601-1 standard, third edition.

Objectives

To provide Biomedical Engineers & Technicians with a thorough knowledge of the safety aspects of the 60601 standard related specifically to systems. On completion of the course, participants should be competent to configure medical/non-medical equipment systems and know the extra protection methods recommended in the standard.

Course Summary

- Relevant items from the 60601-1 standard
- Main points from the systems chapter
- Management of leakage currents
- Exercises on test requirements
- System configurations and solutions
- Practical test configuration session
- Review of pre-course questionnaire
- Who is the manufacturer of a system?
- Remaining hazards

General Course Information
Terms & Conditions
(SME & SMS)

Learning Method

Each course contains both taught and practical sessions. Three weeks prior to the course, participants will receive a questionnaire to be completed before attending, requiring study of the BS EN 60601-1:2006 standard.

Learning Structure

Both courses are designed to be free standing, however, it is highly recommended that the Safety of Medical Electrical Equipment course is attended first as it provides basic background knowledge.

Who should attend

- Biomedical Engineers and Technicians who are required to configure, test or approve medical equipment or systems.
- Manufacturers and suppliers of medical electrical equipment, systems and electrical safety testers.

Course Staff

- Prof. Azzam Taktak
- Dr Tristan Payne
- Mr Dave Smith
- Mrs Lynsey Holmes

Registration

Registration takes place between 9:00 – 9:30am.
Courses are scheduled to conclude at 4:30pm.

Application & Fees

The application form and fees can be found overleaf. We recommend that you check availability of places with the course organisers prior to booking.

Accommodation

We do not organise accommodation however we can provide a list of hotels located close to the course venue.

Venue

Dept. Medical Physics & Clinical Engineering
1st Floor Duncan Building
Royal Liverpool University Hospital
Liverpool, L7 8XP
Maps / directions provided with confirmation of course place.