Certificate Course on Instruments Maintenance for Technicians

This four week course equips participants with the knowledge and skills required to maintain and troubleshoot common Ophthalmic instruments.

Target Group

This course is meant for staff of eye care organisations – including biomedical engineers, ophthalmic technicians, electricians or anyone interested in learning about maintaining ophthalmic equipment.

The course is also open to technicians from organisations engaged in sales and service of ophthalmic instruments.

As this course will be offered in English, participants are required to be conversant in English.

Course Content

1. Organizational skills

- Listing and keeping track of all equipment in the hospital
- Maintaining adequate stock of essential supplies for instruments (bulbs, fuses, paper rolls etc.)
- Developing procedures for keeping track of the entire maintenance process (care maintenance and repair) including warranty and maintenance contracts. Maintaining catalogues instruction and service manuals of the instruments
- Training the users of instruments on the various DOs and DON'Ts

2. General maintenance skills

- Trouble shooting and diagnosing the problems in instruments reported to be not working
- Rectifying faults that can be handled locally and properly communicating the problem as precisely as possible to the supplier/outside service agency
- Planning for maintenance activity in an eye-camp site away from the hospital

3. Skills relating to maintenance of electrical and electronic instruments

- Using multimeter
- Identifying components and knowing their characteristics
- Soldering and building simple electrical/electronic circuits
- Identifying electrical fuses in instruments and understanding their rating
- Calculating the power ratings of instruments to provide (I) proper fuses, (II) proper transformer or voltage stabilizer or UPS as required
- Changing bulbs in ophthalmoscope, retinoscope, slit lamp, microscope, lensometer, keratometer and fundus camera
- Locating electrical faults in equipment like torchlight, surgical lamp, foot switch etc. and rectifying the same

4. Skills relating to maintenance of optical instruments

- Cleaning optical surfaces (mirrors, lenses and prisms)
- Dismantling, cleaning and assembling the following instruments ophthalmoscopes (direct and indirect), retinoscope, slit lamp
- Carrying out preventive maintenance on other optical instruments: microscopes (operating and laboratory) lensometer, keratometer and fundus camera

5. Skills relating to maintenance of mechanical parts of equipment

- Locating and rectifying faults in castor wheels of equipment
- Locating and rectifying faults in movement of table tops of slit lamp, fundus camera and other instruments
- Lubricating necessary parts
- Sharpening and repairing surgical instruments
- Adapting damaged or worn-out surgical instruments for other use
- Checking the calibration and rectifying faults in any in schiotz tonometer. Checking leaks if any and fixing them and topping mercury in BP meters. Checking leaks if any in cryo system and fixing the same

6. Relevant Knowledge

- Eye and its parts
- Common refraction defects and the remedy.
- Common eye diseases and their treatment.
- Working principles of the following instruments that they will be handling:
  - Ophthalmoscope (direct & indirect)
  - Retinoscope
  - Slit lamp
  - Microscope (operating & laboratory)
  - Lensometer
  - Keratometer
  - Cryo system
- Working principles of the other instruments that they come across in the hospital
  - A & B Scan
  - Field analyser
  - Laser systems

Methodology

'Learning by doing' is the important feature of the course. In the first few days, the trainees observe what the technicians in the instruments maintenance laboratory of Aravind Eye Hospital do. Later they are given the opportunity to carry out the maintenance tasks in the hospital under close supervision and guidance of Aravind technicians. For this to happen effectively the trainee trainer ratio is kept at 1:1.

Lectures and demonstrations are arranged as part of the course to build the relevant knowledge for understanding the tasks. The trainees are also allowed to interact with the vendor's service personnel when they visit Aravind Eye Hospital. The trainees are issued a certificate on successful completion of the course.

Course Dates

This four-week course takes in six batches per year. Upcoming batches start on *1st February, 1st April, 1st June, 1st August, 1st October and 1st December.*

Course Fee

INR 23,600 for candidates within India and Nepal

USD 590 for candidates from other countries

The fee mentioned is inclusive of 18% of GST. Food and accommodation are not covered under the course fee. These have to be borne by the candidates separately.

Payment Procedures

Indian and Nepal candidates can make the payment through Demand Draft in the name of Aravind Eye Hospital payable at Madurai or through online payment. Overseas candidates can send the course fee by wire transfer; you are requested to make the payment on receipt of the invoice.

Accommodation

Accommodation will be arranged at Inspiration – International trainee's hostel. Food will be served at Inspiration.

Visit course page

Apply now

For more information please contact

Prof N. Manickam
Consultant
Aravind Eye Hospital, Madurai – 625 020.
Phone: 91 452 4356100 Ext 430
E-Mail: manickam@aravind.org

This course is also offered online,
covering only five instruments

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