

Course On

MAINTENANCE OF OPHTHALMIC SURGICAL INSTRUMENTS & OTHER EQUIPMENT

Course Objective

The trainees who complete the course successfully will have the following skills and relevant knowledge at the end of the four week training.

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.
- Adapting a 110V instrument to work in 220V if the feature is built into the instruments.
- Building a 220V-110V step down power unit with proper fuse.
- 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 Schiottz 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.

Relevant Knowledge

- Eye and its parts.
- Common refraction defects and he 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. Any trainee who wants to take advantage of this opportunity and does more can learn more and pick up more skills.

A few lectures and lecture 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 servicemen of equipment supplies when they visit Aravind Eye Hospital.

Evaluation

There is no formal evaluation of the trainees at the end of the course. However, the work of the trainees is informally evaluated every day and their progress is conveyed to them during weekly review sessions. The trainees are issued a certificate on successful completion of the course.

Language

English is the medium of instruction for the course. Hindi is used as a parallel medium for people who are not comfortable with English. For trainees from other countries, a working knowledge of English is very essential.

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

At Lions Aravind Institute of Community Ophthalmology, Aravind Eye Hospital, Madurai - 625 020. We offer four-week courses in maintenance of ophthalmic surgical instruments and other equipment, with a trainee-trainer ratio of 1:1. The trainees are also introduced to principles of maintenance management.

Course Dates:

The six courses run each year begin in on

1st February, 1st April, 1st June, 1st August, 1st October and 1st December.

Course Fee:

The course Fee is Rs.15, 000 for participants from India and Nepal and USD 400 for other countries participants. 18% of GST is applicable to the course fee. Accommodation and food cost are to be borne by the candidates apart from the course fee 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.

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