

FUNDAMENTALS OF MEDICAL LASER USE, MAINTENANCE AND SAFETY

Professional Medical Education Assn - The Laser Training Institute

www.LaserTraining.org

Class Description:

This one day program is designed to give the practicing Biomedical Engineer a good foundation in how different types of medical lasers are used for various surgical procedures, fundamental energy concepts, safety, and basic maintenance issues with all four classes of medical lasers. Topics will include the basic laser and energy concepts required to understand the differences in types of medical laser systems and how they are applied, relevant safety aspects for both use and maintenance, and general laser/tissue interactions. It will include an overview of the individual laser components and general maintenance requirements for the four classes of laser systems -- solid state (crystals), gas, liquid (dye) and semi-conductor (diode) lasers. These will include the CO₂, Ho:Yag, Nd:Yag, Ar, Kr, Excimers, various Diode lasers and others. It will also discuss the Federal laws requiring detailed service information to be made available to users upon request. These are all powerpoint presentations with embedded video clips for examples. Accredited for 7.2 Contact Hours. Certificates of Laser Training provided.

Class Outline:

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| 7:30am | Registration |
| 8:00am | <u>Fundamental Laser and Energy Concepts:</u> <ul style="list-style-type: none">- Basic Laser Biophysics- Laser & Energy Concepts<ul style="list-style-type: none">Types of lasers, Irradiance, Radiant Exposure, CW & Pulsing- Laser/Tissue Interactions, and procedures - the basis for surgical use- Medical Laser Safety - both for users and service personnel |
| 9:45am | BREAK |
| 10:05am | <u>Fundamental Laser and Energy Concepts</u> - continued |
| 12-1pm | LUNCH |
| 1pm | <u>An Overview of Maintenance & Repair of Medical Laser Systems</u> <ul style="list-style-type: none">- Lenses, Simple Laser Optics, and cleaning techniques- Power/Energy meter selection and use- Review of System Components and common service procedures for:<ul style="list-style-type: none">- CO₂ Laser Systems (representative of most gas lasers)<ul style="list-style-type: none">- Nd:Yag Laser Systems (representative of most solid state lasers)- Ion Laser systems (Ar & Kr lasers used primarily in ophthalmology)- Federal Service Info Requirements, Training and Certifications |
| 2:30pm | BREAK |
| 2:50pm | <u>An Overview of Maintenance & Repair of Medical Laser Systems</u> - continued |
| 4:00pm | ADJOURN |

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These are all lectures – not hands-on. It may be given live in your department or arranged as a day long Zoom meeting for your staff.