



Comprehensive Laser Maintenance & Repair



The Laser Training Institute™ of Professional Medical Education Association, Inc.
not-for-profit education, est. 1980
800-435-3131

Conducted at The Ohio State University, Columbus Ohio

COURSE DESCRIPTION:

Our eight day school is designed to teach hands-on procedures (alignments, calibrations, optics, assembly & cleaning, etc.) to the electronically experienced biomedical engineer. You don't need any previous experience with lasers. The first four days of the program focus on the CORE laser & optical components and subassemblies that are common to all laser systems. This allows the engineer to provide the periodic maintenance on ALL of their hospital laser systems, and provide front line service repair on most. This is accomplished through extensive hands-on work with CO2, argon and Nd:Yag laser systems which are representative of the majority of subassemblies in ALL lasers. The last three days of the program delve into more depth with some specific laser systems, and spends more time with ophthalmic laser systems including the slit lamps and adjustments. Specific procedures on the KTP and pulsed dye lasers are reviewed, although we recommend further training on these units. Specific procedures on additional models of lasers will also be performed, and these additional models will rotate and change from course to course. The weeklong program will cover theory on laser biophysics, more advanced laser physics and laser electro-optics, and biological effects and surgical techniques which are all included on various sections of the NCLE laser certification exam. An adequate faculty to student ratio is always maintained by expanding faculty based upon course registration to keep it approximately 4 students per faculty overall. The course emphasizes "hands-on" with LOTS of touching and doing, and works toward developing an underlying understanding of lasers and maintenance procedures, rather than rote rule memorization. A flash drive is provided to participants that includes all of the Laser Lecture Handouts for the first two days and other valuable resource information.

V090604

REGISTRATION: PreRegistration is Required.

FAX back to 305-946-0232, or mail to:
Professional Medical Education Assn.
PO Box 997
Grove City, OH 43123

NAME: _____

FACILITY: _____

ADDRESS: _____

CITY: _____ ST _____ ZIP _____

Tel# _____ Fax# _____

Email (student's) _____

Check is enclosed

P.O. # _____

Charge My Credit Card

Visa MC AX Discover

CARD # _____

Expiration Date _____

Cardholders Name (print) _____

Cardholder Signature _____

COURSE FEE: \$6150 includes course, 8 hotel nights, one group dinner, all lunches & breakfasts, course manuals, flash drives, & Testing fee for the Laser Certification exam (optional).

Prepaid Discounts: \$600 discount (\$5550 fee) for payments received more than 30 days in advance. Purchase orders should be made out for the full amount of \$6150 and our invoice will indicate that the discount may be deducted based upon time of payment.

Full payment **MUST** be received by the time of the course in order to be admitted. Credit Cards will be charged accordingly and discounts applied at the time the charge is made.

WORLD'S PREMIER LASER REPAIR COURSE

THE PREMIER COURSE FOR GENERAL LASER MAINTENANCE & REPAIR SINCE 1984 - We've done this now for over 25 years. This is the Laser Repair “Boot Camp” for general laser repair. Attendees have included biomedical engineers from most major Hospitals and Universities in the U.S., technicians from all of the national third party laser service groups, and international engineers from all over the globe.

- **ADVANCED LASER REPAIR TRAINING** - Now available EXCLUSIVELY to our Laser Repair Course Graduates. These 1-2 day shorter courses that go beyond preventive maintenance and front-line repairs are specific to your own equipment and conducted either in your own facility, in South Florida, or Southern California (depends on the equipment). You must be an alumni of our “Boot Camp” Basic Laser Repair Course to first qualify. Covers all Candela Models, most current Lumenis models and a variety of aesthetic laser systems. Approximately \$2500 & travel per laser model, but can vary. Herb Deigl and Jim McDaniel—Advanced Laser Training Faculty. For the price of a service call you can get model specific training.
- **PARTS SOURCING** - While we can't guarantee 100% availability of all parts without going through the manufacturer, once you're part of this course you'll interface with our Laser Service Alliance and Course Faculty for laser parts sourcing at prices generally significantly lower than manufacturer retail pricing for OEM parts.
- **LASER SERVICE BACKUP** - Everyone needs help from time to time. Our faculty will be available to back you up for on-site service if you need it, at discounted fees compared to the manufacturer.
- **LECTURES** conducted at the **Drury Hotel**, downtown Columbus. Hands-On **WORKSHOPS** conducted at **The Ohio State University Medical Center**, Department of Clinical Engineering, 10 minutes North of the hotel.
- **INTERNATIONAL STUDENTS** - If you need a letter to assist with your Visa, or assistance upon arrival in Columbus Ohio, just give us a call. We understand that it may be extremely difficult to obtain a US Visa for citizens of some countries. We are planning an affiliated Laser Repair course to be held periodically in Dubai at some point in the future, but have nothing currently scheduled. Please attend the US Course if you can obtain a Visa, or watch for updates in 2010 on the Dubai course.

Course Outline:

This provides the general framework for the week. Times are subject to change from course to course. Since lectures are almost all delivered online beforehand, most of the course is Hands-on work.

These Preliminary Lectures are available ONLINE prior to attending.

- Laser, Energy & Optical Concepts
- Laser & Electrical Safety
- Lenses & Simple Optics & Cleaning
- Power Meter Selection & Use
- Basic PM Knowledge & Intro to Laser Components
- CO2 Laser Subsystems & Components
- Ion Laser Subsystems & Components (Argon & Krypton Lasers)
- Solid State Laser Subsystems & Components (i.e. Nd:Yag, Ho:Yag, Er:Yag, Alexandrite)



WORKSHOP

Day 1 & 2, 8:00 am to 4:00 p.m. Monday-Tuesday
Lectures as listed above.

Note: If you have completed the online lectures first, you may skip the first day and show up starting on day 2.

Day 3, 8:00 am to 4:00 pm. Wednesday
HANDS-ON Core Laser Skills & Alignments
CO2, Nd:Yag, Argon & Articulated Arm Stations. PM Routines, power tweaking, alignments
CO2 Laser Tube Optics, removal & cleaning
Flashlamp Replacements

GROUP DINNER - Provided

Day 4, 8:00 am to 4:00 p.m. Thursday
Core Laser Skills & Advanced Theory. Repeat exercises on CO2, Ar, Nd:Yag & Articulated Arms.
Advanced Laser Optics,
Theory of Optics
Electro-Optics: KTP, Q-sw, polarizers

Day 5, 8:00 am to 4:00 p.m. Friday
Ophthalmic Nd:Yag
Laser Resonators/Tubes, Slip Lamps.
Ar/Kr Ion Laser Tube Changeouts, PM's,

Day 6, 8:00 am to 12:00 p.m. Saturday
Ho:Yag Laser, KTP Laser
- or substitutes as available
(this is our scheduled 1/2 day)

Day 7, 9:30 am to 4 p.m. Sunday
Dye Lasers, PM's, Dye Modules & Changeouts, Lamps,
Evaluations & Awarding of Certificates
Certification Review
Optional NCLE Exams also given this afternoon/evening.

Day 8, 9 am to 1 pm. Monday
(Optional) NCLE Laser Certification Exam
fee already covered in course registration fee

Note - if you take the exam the previous evening you are free to skip this day. If for some reason you did not pass the exam the previous evening, then you are welcome to retest on a second version of the exam today.



Faculty - not all faculty present at each course.

We do maintain at least a 4-5/1 ratio of students/faculty.

Gregory T. Absten B.Sc., MBA., CLRT

Executive Director, Professional Medical Education Assn., Inc., Marathon, Florida Scientific Fellow, American Society for Laser Medicine & Surgery. Previously Clinical Instructor, The Ohio State University College of Medicine. Mr. Absten served as President of Advanced Laser Services Corp. -- an ongoing national laser repair company which he founded in 1986. He served for years as the Course Director for the "Laser Biophysics and Safety" program of the American Society for Laser Medicine and Surgery. He has been Course Director of Laser Bio-physics for AAMI's previous annual meetings and taught the original laser maintenance courses offered by AAMI in the early 80's. He is widely published in the field of laser medicine, including laser articles in Biomedical Instrumentation & Technology, and serves as an advisor or director of numerous laser organizations. www.LaserTraining.org

Herb Deigl BSEE, CLRT

President, Universal Medical Lasers - Independent Laser Service. Senior Laser Engineer. Herb has 25 years of experience in laser technology - of which the last 15 years have been in medical lasers. BSEE in laser and Electro-optics. 10 years experience as faculty at a major University. 4 years as a Research Scientist. 12 years as a medical laser technician. Factory trained on major manufacturer's systems in the U.S. and abroad.

Dan Little, CBET, CLRT, CMLSO—COURSE DIRECTOR

Technical Director, Professional Medical Education Assn. Previously served as the Director Biomedical and Scientific Engineering, and Laser Safety Officer for Roswell Park Cancer Institute in Buffalo NY. Has served as an independent consultant on many different biomedical technology applications, and has held technical positions with various groups since 1972. He's also an avid holographer.

Jim McDaniel

Jim runs West Coast Laser Services, an independent laser service company out of San Bernardino Ca, and has over 18 years of experience with multiple laser types. Jim was initially involved in the laser show industry - movies, videos, concerts, etc., designing a multitude of laser productions and effects. He worked for Candela medical laser for several years on their entire line of Dye, Nd:Yag and Alex lasers before starting his own independent Laser Repair Company.

Sydney Sukuta,, PhD

Dr Sukuta started his teaching career at California State University Fresno in 1990 while he was a physics graduate student, and he has now taught at numerous academic institutions that include the University of Nevada Reno, the University of Phoenix's Reno and Online campuses. Dr. Sukuta is currently a Laser Technology professor at San Jose City College. He also has industry experience working for some of the world's leading laser manufacturers in Silicon Valley.

Rotating or Previous Faculty:

Don Ciesielski

Senior Field Service Engineer, Trace Services, Chicago Il

Christopher Zelich - czelich@photovaclaser.com President, Photovac Development Corporation, Grove City Ohio. Chris was a co-founder of Advanced Laser Services in the mid 80's - one of the first national independent groups. Photovac now specializes in laser tube refurbishment and refilling of sealed tube CO2 lasers. www.photovaclaser.com

John Abel - President, EA Services Inc, - Penn Argyle, Pennsylvania. Abel@LaserServiceAlliance.com

Terry Storer - The Laser Medic. Bedford TX. Over 20 years experience in laser service with Coherent and Lumenis. Now provides independent laser service. terrystorer@comcast.net

Frank Lazzaro

Retired Senior Laser Engineer / Physicist with The Aerospace Guidance and Metrology Center, Newark AFB.

Tom Woodward

GE Clinical Services.

Angel Rodriguez

Formerly with Candela Laser Corporation

Randall Drew RN

We are sad to report that Randall passed away some time ago. He was a mainstay of our technical training program and will be missed. We're leaving his name posted here in commemoration of his contributions to our course.

Ken May -

Independent Laser Service. New Jersey. Previously with Candela Laser Corporation.

Tom Enneking BSEET, CCE - - Biomedical Services, Mount Carmel Health System, Columbus, Ohio

Study Material for the Laser Certification Exams are available for free on the Study Materials page of:

www.LaserCertification.org

What Can You Expect After Attending? — The “Boot Camp” of Laser Repair.

You'll be able to perform routine Preventive Maintenance on all of your hospital's laser systems and perform the power calibrations which are required at six month intervals. This includes procedures such as changing filters and deionizer water, replacing flashlamps, checking alignments, power outputs and fail-safes, and cleaning optics, among other things. You'll also be able to perform most front line troubleshooting and basic repairs - including arm and near/far alignments, and power "tweaking". Remember that even these are going to take you longer in the beginning than someone with more experience. You will need the service manual for each of your lasers which the FDA REQUIRES be provided by the manufacturer. You should NOT expect to come away as an expert on every system you have, or to be able to fix any laser problem as soon as you get home. More complicated problems and in-depth repairs will still require service backup for a period of time. There is a several month learning curve in order to get up to speed on progressive levels of repair. This course give you the core skills and knowledge to get started learning, and the rest you can pick up with periodic practice. The more often you work on the equipment doing routine PM's and "easy" alignments, the sooner you'll be able to tackle more difficult problems on an incremental basis. Some of our students have even gone on to become independent laser service engineers within a year or so of attending a course, but this is rather exceptional. A more reasonable expectation would be to perform all the PM's when you get back, and with 6-9 months of practice, to be able to perform moderately complex repairs. The program is an exceptional foundation if you plan on attending a manufacturer's specific model school - you'll get MUCH more out of their program. You should keep in mind that even experienced laser engineers need technical backup from time to time, but you should be able to keep this to a minimum. The more in-depth portions of the course in days 4-7 provide more detailed information on specific lasers, but the adage of 6-9 months of practice still holds true. This program covers all the core content of the standardized testing of the NCLE Laser Certification exam to better prepare applicants for this test. Further advanced training on specific models is available to graduates if requested.

As a recent attendee stated: "Our Mini GentleLase died out on us with a huge bang last month. With your faculty's telephonic help (Jim McDaniel), we diagnosed the problem with the HVPS. We replaced those partsNow, it's working fine. We owe this huge saving directly to you and your most helpful laser repair course. After your course, we can repair and fix our machines in minimal turn-around times and at the fraction of the cost of repairs or parts. Please, accept our heartfelt gratitude." **Dr Hassan Feroze, Clear Skin Clinics - Pakistan.**

LASER PARTS SOURCING SUPPORT & TECHNICAL BACKUP: Students in this Laser Repair course will receive Laser Parts Sourcing support from our Laser Service Alliance and course faculty, plus backup service calls at rates discounted from manufacturers.

ADVANCED LASER TRAINING: Exclusively available to graduates of this course, you can get more detailed personalized training on your own specific lasers. This Basic course allows you to perform PM's and front-line troubleshooting on all lasers, while the Advanced Classes will go more in-depth on your specific laser models.

For more course details visit our website at WWW.LASERTRAINING.ORG

The website includes online registration, free “lasers in medicine: manual, free AAMI article on “Fundamentals of Laser Technology”, and details and pictures for facilities used for training. It also includes an application form for membership to the American Society for Laser Medicine & Surgery (ASLMS) and a link to their website. Links and explanations are also provided for the Code of Federal Regulations’ (CFRs) requirement that Service Manuals be made available to “anyone” upon request to the manufacturer.

Download the **FREE Lasers in Medicine & Surgery Manual** from our site to start studying for the course now.

