

Detailed information of content in Mastership Course:

Wavelengths of Erbium-, Nd:YAG- and Diode-lasers

Module 1: (1:st of 2 days) at ILSD Sweden

Laser Physics and Laser Safety Officer Course, Laser Physics and Laser Safety Officer Course

- Laser Safety Officer seminar
- Physics of lasers
- History of lasers
- Laser Wavelengths
- Photons
- Laser-Tissue-Interactions, Absorption and Emission of Photons
- Biophysics
- Absorption and Absorptions spectra
- Laws and Regulations
- Transformation of laws and regulations in the dental office
- Multiple choice test

Module 1: (2:nd of 2 day) at ILSD Sweden

Laser Construction and Handling, Laser Diagnostics

- Laser construction
 - Laser function
 - Operation manual and guidelines
- Hands-On training of biophysical interactions on hard and soft tissues on all laser types
- Oral Laser Diagnosis

Module 2: (4 days) at ILSD Sweden, in conjunction with module 1 possible

Er:YAG (2.940 nm)/ Er,Cr:YSGG (2.790 nm) in Soft Tissue

Biophysical background: absorption and transmission in soft tissue --> EBD literature

Hands-On Training, Skill Training and Live-Patient Demonstrations

Clinical indications

- Periodontology
 - Closed and open curettage
- Soft tissue surgery
 - Gingivectomy, Gingivoplastics

- Pericoronitis
- Incision/ Excision
- Implantology
 - Implant exposure
 - Peri-implantitis treatment

Er:YAG (2.940 nm)/ Er,Cr:YSGG (2.790 nm) in Hard Tissue

Biophysical background: ablation mechanism, temperature and pulp reaction, preparation speed, cavity sterilization, “sense of pain” during cavity preparation --> EBD literature

Clinical indications

- Cavity preparation
 - Minimal invasive caries removal
 - Fissure sealing
 - Cavity preparation methods for composite fillings and ceramic inlays
 - Veneer preparation
 - Creation of micro retentative sealings
 - Removal of old fillings (possibilities)
- Endodontics
 - Cleaning and disinfection of the root canal
- Hart tissue surgery
 - Apicectomy
 - Sinus lift
 - Depigmentation of the gingiva
 - Bone surgery: bone exostosis, crown enlargement, osteotomy

Module 3: (4 days) at ILSD Sweden

Nd:YAG Lasers (1.064 nm)

Biophysical background: ablation mechanisms, transmission, absorption in the tissues, temperature and tissue reactions --> EBD literature.

Hands-On Training, Skill Training and Live-Patient Demonstrations

Clinical indications:

- Endodontics
 - Root canal treatment
- Periodontology
 - Closed curettage
- Herpes treatment, Incision (Abscess fission), Sulcus enlargement, Aphthosis

Diode Laser High-Power (810/ 940/ 980 nm)

Biophysical background: ablation mechanisms, transmission, absorption in the tissues, temperature and tissue reactions --> EBD literature.

Hands-On Training, Skill Training and Live-Patient Demonstrations

Clinical indications:

- Endodontics
 - Root canal treatment
- Periodontology:
 - Closed curettage
 - Sulcus enlargement
- Soft Tissue Therapy
 - Frenectomy
 - Gingivectomy, Gingivoplastics, Gingiva hyperplasia
- Incisions (Abscess fission)
 - Exposure of retained teeth
- Hard tissue therapy
 - Hyper sensible teeth
- Oral mucosa diseases
 - Hemangioma
 - Herpes
 - Aphthosis

Diode Laser Low-Power (650 nm)

- Low Level Laser Therapy
- Photo Dynamic Therapy

Module 4: (2 days) at AALZ, Aachen

Oral and written exam (1 day)

Presentation of 5 clinical cases (1 day)

Official delivery of the certificates