KLE VK Institute of Dental Sciences, Belagavi

LASERS IN DENTISTRY – CERTIFICATE COURSE

- "Lasers In Dentistry" –Certificate Course
- 3 Modules – Theory Classes + Demonstrations on Animal models and Hands-on on Live patients
- 1 year University Certificate course

Introduction

Lasers have been proved to be beneficial in clinical procedures for dental practitioners. Lasers have various hard and soft tissue applications. Application of lasers by Photobiomodulation, Photodynamic therapy and Photothermal therapy has shown good results. Even though, lasers cannot replace conventional procedures in dentistry, it helps as an adjunct in clinical procedures giving quick and excellent results.

Dental lasers have various applications in dentistry like in wound healing, aphthous ulcers, aesthetic gingival recontouring, frenectomies etc. Soft tissue laser therapy has shown its efficiency in the treatment of small oral ulcers to temporomandibular disorders. With the advantage of being a non-surgical treatment modality, it helps in faster tissue healing and pain relief.

Need for the course

Patients prefer the most advanced treatment facilities which are painless, bloodless and quick recovery. The use of lasers has shown to be an effective mode to enhance the efficiency, cost and comfort to the patient. Hence, application of lasers will help in providing stress -free patient care. A thorough understanding and knowledge of lasers, their features, and mechanisms of action helps dental professionals apply lasers for different cases during clinical procedures. Hence educating the graduates in the applications of laser will help them use lasers in their routine clinical practice.

Aim of the Course

Education and training of participants, on applications of Soft tissue Lasers in Dentistry.

Objectives of the course

By the end of the course the learner will be able to

- Acquire knowledge and understand the basics of Lasers and laser therapy
- Have the knowledge and understand the applications of Lasers in dentistry.
- Perform laser-assisted clinical procedures

Eligibility criteria –

Participants must have completed BDS.
(Dental Graduates of KLE VK Institute of Dental Sciences)

Maximum Intake –10 students

Course fees – 20,000/- per participant

Course content and hours

Sl no	Topics	Hours	Mode of teaching
1	Introduction to lasers and History of Lasers	2 hours	Didactic lectures
2	Laser physics	4 hours	Didactic lectures
3	Types of dental lasers and Diode lasers	2 hours	Didactic lectures
4	Laser safety	2 hour	Didactic lectures
5	Photobiomodulation	2 hours	Didactic lectures + demonstration + case discussions
6	Photodynamic therapy and Photothermal therapy	2 hours	Didactic lectures + demonstration + case discussions
7	Lasers in oral lesions	2 hours	Didactic lectures + case discussions
8	Lasers in periodontics	2 hours	Didactic lectures + case discussions
9	Lasers in conservative dentistry and endodontics	2 hours	Didactic lectures + case discussions
10.	Lasers in prosthodontics	2 hours	Didactic lectures + case discussions
11.	Lasers in orthodontics, oral surgery and pediatric dentistry	2 hours	Didactic lectures + case discussions
12.	Lasers in Implantology	2 hours	Didactic lectures + case discussions
	Total theory hours	26 hours	+ 2 hours for tips and techniques

Demonstration and Hands on- 8 hours

- Surgical
- Non surgical

(Photobiomodulation - demonstration on patients

Photodynamic therapy – demonstration on patients and hands-on

Photothermal therapy – demonstration on patients and hands-on on models

Clinical hours – 44 hours

TOTAL HOURS OF THE COURSE

Theory – 28 hours

Practical's – 52 hours

Education strategies:

Instruction methods	Assessment Methods
1. Didactical lectures 2. Interactive lectures 3. Demonstration 4. Hands on	1. Formative Assessment *Assessment at the end of each module through Multiple choice questions using google forms.

Dr. Hema K
Course Co-ordinator

Criteria for the course certification

1. **80% Attendance**
2. **Score of assessments- (using google forms at the end of each module)**
3. **Completion of 12 cases at the end of 1 year and submission of log book.**
   - **Cases of Photobiomodulation**
   - **Cases of photodynamic therapy**
   - **Cases of photothermal therapy**

The eligibility for the course certification will be done based on credit points scored by the participant.

Expected outcome

By the end of this course, the learner will be able to:

- Practice recent modality of treatment and to provide more efficient clinical practice.
- Apply lasers in most of the cases to obtain faster and better treatment outcomes.
- To provide cost effective bloodless, painless treatment procedure
- Provide more efficient and comfortable treatment procedures for patients
- To generate more income than conventional techniques

Syllabus

1. Introduction to lasers

2. Laser physics

3. Laser tissue interaction
    - Photobiological effects of lasers

4. Types of lasers
    - Hard and soft tissue lasers

5. Laser healing triangle
    - Photobiomodulation
    - Photodynamic therapy
    - Photothermal therapy

6. Clinical applications of lasers
    - Lasers in oral lesions
    - Lasers in periodontics
    - Lasers in conservative dentistry and endodontics
    - Lasers in oral surgery
    - Lasers in prosthodontics
    - Lasers in orthodontics
    - Lasers in pediatric and preventive dentistry
    - Lasers in implantology

7. Laser safety

8. Protocol for common clinical cases

Time Table for Laser University Course

MODULES	TOPIC	STAFF
MODULE 1	• Introduction to lasers	Dr. Hema K
	• Laser Physics	Dr. Vilas Pattar
	• Laser tissue interaction	Dr.Neelamma Shetti
	• Laser safety	Dr. Hema K
	• Diode lasers	Dr. Vilas Pattar
	• Photobiomodulation and Clinical applications	Dr. Neelamma
	• Photodynamic therapy and Photothermal therapy	Dr. Vilas Pattar
	• Assessment	
MODULE 2	• Lasers in Oral lesions	Dr.Vilas Pattar
	Lasers in periodontics	Dr. Neelamma Shetti
	• Lasers in conservative dentistry and endodontics	Dr.Vilas Pattar
	• Lasers in Prosthodontics	Dr. Hema K
	• Lasers in orthodontics , oral surgery and paediatric dentistry	Dr. Hema K
	• Lasers in Implantology	Dr. Hema K
MODULE 3	• Assessment	
	• Demonstration and Hands- on	Dr. Neelamma Shetti Dr.Vilas Pattar Dr. Hema
	• Tips and Techniques	Dr.Vilas Pattar
	• Assessment	
	• Clinical cases	Internship
	• Log Book Submission	Evaluation of log book and awarding of certificates

PRINCIPAL
KLE V.K. Institute of Dental Sciences
Nehru Nagar BELAGAVI-590010

Preamble

Certificate course on Lasers in Dentistry is a meticulously planned, module based training programme for dental graduates.

Lasers are proven to be beneficial in clinical procedures as an adjunct offering quick and excellent results. Soft and hard tissue applications of lasers with distinct treatments by Photobiomodulation , Photodynamic therapy and Photothermal therapy have shown promising results.

Patients prefer lasers as it is painless, bloodless ,help in quick recovery and is an advanced treatment facility. Lasers while being efficient ensure a cost-effective treatment with an added benefit of comfort for the patient.

A thorough understanding and knowledge of lasers , their features and mechanism of action will help the participants use laser with ease in their routine clinical practice.

Objectives of the Course

By the end of the course the learner will be able to :

- ❖ Acquire knowledge and understand the basics of Lasers and laser therapy.
- ❖ Have the knowledge and understand the applications of Lasers in dentistry.
- ❖ Perform laser-assisted clinical procedures.

Eligibility Criteria

Dental graduates of KLE VK Institute of Dental Sciences

Maximum Intake : 10 students

Expected Outcome

By the end of this course, the learner will be able to:

- ❖ Practice recent modality of treatment enhancing the efficiency of clinical practice.
- ❖ Apply lasers in most of the cases to obtain faster and better treatment outcomes.
- ❖ To provide cost effective bloodless, painless treatment procedure
- ❖ Provide more efficient and comfortable treatment procedures for patients
- ❖ To generate more income than conventional techniques

Course Highlights

- ❖ 5 Modules
- ❖ Didactic Lectures
- ❖ Animal Model Demonstrations
- ❖ Hands-on on Live Patients
- ❖ One-on-one case mentoring for 12 cases

Course Contents

- ❖ Laser physics
- ❖ Laser tissue interaction
- ❖ Photobiological effect of laser
- ❖ Laser healing triangle
  - Photothermal therapy (PTT)
  - Photobiomodulation therapy (PBM)
  - Photodynamic therapy (PDT)
- ❖ Clinical applications of lasers
- ❖ Laser safety
- ❖ Protocol for common clinical cases

Committee monitoring the Course

Course Co-ordinator
Dr. Hema K., Prof. Dept. of Prosthodontics, KLEVKIDS

Advisors :
Dr. Alka Kale, Principal
Dr. Anjana Bagewadi, Vice Principal
Dr. Sonal Joshi, Dean
Dr Preeti Doddwad, Life Member, KLE Society, Belagavi

Resource Persons:
Dr. Vilas Pattar, Reader, Dept. of Periodontics
Dr. Hema K., Professor, Dept. of Prosthodontics
Dr. Neelamma Shetti, Reader, Dept. of Periodontics
Faculty of KLE VK IDS, Belagavi

For more Information

Contact : **Dr. Hema K.**
Co-ordinator, Lasers in Dentistry Course
Mobile No. : 9986950892

Registration Fees : 20,000/-

Mode of Payment : NEFT
Name of the SB Account :
Registrar KLE University for VKIDS
A/C No. : 05042170000081
Branch Code : 10504
IFSC Code : CNRB0010504
Canara Bank, Nehru Nagar, Belagavi - 590010.

KLE VK Institute of Dental Sciences
KLE Academy of Higher Education & Research
Belagavi

NAAC 'A+' Grade (3rd Cycle) & Placed in Category 'A' by MoE(GoI)

Lasers In Dentistry Certificate Course

Build your practice, transform your future.... By learning the science of LASER... THE MAGICAL LIGHT.

Organized by :
KLE VK Institute of Dental Sciences, Belagavi