IFDE
INTERNATIONAL
FOUNDATION FOR DENTAL EDUCATION

ONLINE COURSE
GENERAL OUTLINE

INTRODUCTION

This IFDE course is different from conventional orthodontic continuing education courses. Its main emphasis is placed on the importance of establishing a correct diagnosis, conducting in-depth case studies, and mastering sound biomechanical principles.

The most important aspect of this course is the acquisition of diagnostic knowledge that is evidence-based. Once this knowledge is acquired, specifically designed modules allow participants to practice their newly acquired skills.

Each module consists of lecture recordings, reading material, videos, and reference articles. The material in each module needs to be understood before proceeding to the next module. To verify that the knowledge is acquired, the modules may include quizzes, exercises, webinars, and live presentations.

As an online reference, the material in this course is not designed to coach on the management of specific malocclusions, but rather to give you the most appropriate orthodontic knowledge for your own everyday practice.

The course is divided into six online modules. Each module presents unique sets of topics that contribute to and reinforce your orthodontic knowledge.

MODULE 1: Diagnosis and Treatment Planning

Module 1 is separated in two modules: 1A Theoretical and 1B Applied. It is devoted to diagnosis, recognition of malocclusions, and general orthodontic diagnostic principles. The most appropriate method to conduct an orthodontic examination is also presented.

All orthodontic terms, their meanings, and their importance in the diagnostic process are explored. The different analyses necessary to conduct a correct orthodontic case presentation once the diagnostic data is gathered is presented, as well as the formulation of a problem list to treat the malocclusion presented adequately.

The assessment of the severity of the malocclusion studied, as well as the formulation of a differential diagnosis (that require different mechanical approaches) are emphasized. Practical exercises and quizzes are included in this module.

FROM A PRACTICAL PERSPECTIVE, MODULE 1 INCLUDES:

1. Orthodontic examination performed in a systematic manner
2. Orthodontic model analysis
3. 2D radiography analysis
4. Cephalometric analyses starting with simple analyses that allow for correct diagnosis, and more complex analyses for cases which require more attention
5. Dental photography course, or basics of dental photography in an online environment
6. Case presentations where the participants present orthodontic cases at the diagnosis level without the biomechanical considerations which are covered in Module 2.

AT THE END OF MODULE 1, PARTICIPANTS WILL BE ABLE TO:

1. Perform an orthodontic exam
2. Perform a dental study cast analysis
3. Trace and interpret a cephalometric radiograph
4. Analyze a panoramic radiograph
5. Diagnose a malocclusion
6. Produce a problem list
7. Present a differential diagnosis.

MODULE 2: Biomechanics

Module 2 is devoted to orthodontic biomechanics and all the fundamental principles that involve some form of tooth movement.

The response of the periodontium to tooth movement is addressed. Different methods of applying forces to the dentition are discussed, and an emphasis is made on the development of the occlusogram which allows participants to recognize, visualize, and design the most appropriate biomechanical system for the malocclusion presented. The notion of center of resistance, center of mass, and center of rotation, as well as simple force application, force equilibrium, equivalent force systems, and force couples are explored and explained extensively in order for the participant to fully understand the concept of force application to the dentition.

To illustrate the theoretical concepts, practical exercises and different wire bending techniques are used in order to deliver the adequate force system using the occlusogram as a guide.

Different orthodontic techniques are explained, with their advantages and disadvantages. No particular technique is prioritized. To efficiently correct malocclusions, a correct diagnosis must be obtained. A problem list must be created before the biomechanical system is developed and prior to bracketing or to the use of any type of orthodontic appliances.

Wire technology is also an important part of this module. The participant must understand the different physical characteristics of each type of wires and their force delivery system in order to ensure that the optimum amount of force is placed on the dentition for the most efficient tooth movement.

The straight wire system is presented and is complemented by several other techniques as the straight wire system is not always the most efficient system to correct all types of malocclusions.

In this module, practical exercises consist of learning the correct bracketing techniques to ensure that the appliance design is set according to the treatment plan designed by the practitioner. Once the correct bracketing techniques are mastered, several wire bending exercises are required from the participants in order to gain the correct insight in wire-to-bracket interactions.

The course is not limited to teaching the straight wire system, but is in large part devoted to this technique as it is the most popular technique in the orthodontic world at the moment. It however often needs some other form of therapeutic approach to get the best result in the minimum amount of time with a minimum amount of force applied. Orthodontic auxiliaries such as springs, attachments, and elastics are described, with their indications and contraindications.

AT THE END OF MODULE 2, PARTICIPANTS WILL BE ABLE TO:

1. Understand force systems

2. Locate the center of resistance on a specific tooth
3. Calculate the center of rotation
4. Describe the different types of tooth movement
5. Understand force systems such as simple forces, force couples, and moment of force
6. Calculate the moment to force ratio
7. Calculate or use the load deflection rate of wires to your advantage
8. Understand the importance of using the right systems to obtain the correct tooth movement.

MODULE 3: Interceptive Orthodontics

Module 3 is devoted to the field of interceptive orthodontics. Interceptive orthodontics is usually performed during the mixed dentition period when the patient is about 8 to 11 years of age and is in need of corrective orthodontics.

Growth and development lectures help the participant to understand the influence of growth on the development of the craniofacial complex and its influence in the severity of malocclusions.

Many interventions can be successfully performed during this period such as the eruption guidance, space maintenance, transverse dimension control, and anteroposterior correction if needed. Some form of growth modification, in case of severe malocclusions, may be contemplated.

Simple interventions providing the maximum amount of benefits are described in detail in this module. Descriptions of the correct appliances to be used are provided. There are many methods of intervention that are correct, but only the most commonly used are presented.

The main interventions presented are: space maintenance in case of early primary tooth loss, eruption guidance of the upper canines and upper molars, maxillary expansion to correct posterior crossbite, and protraction face mask or any form of anteroposterior correction for anterior crossbite.

During this module, the following is explained: design of removable appliances, fabrication of a headgear, fabrication of a utility arch, limited interior bracketing for anterior teeth intrusion and retraction of anterior teeth, and fabrication of a maxillary expander.

AT THE END OF MODULE 3, PARTICIPANTS WILL BE ABLE TO:

1. Analyze the occlusion in the primary and mixed dentition
2. Diagnose a developing malocclusion
3. Describe the etiology of the developing malocclusion

4. Recognize developing malocclusions in the three planes of space
5. Discuss growth patterns and the importance of growth prediction in orthodontic treatment
6. Understand normal versus ectopic permanent tooth eruption
7. Discuss interventions necessary to optimize eruption patterns
8. Apply the appropriate therapy to a developing malocclusion
9. Use utility arches effectively for upper and lower incisors control
10. Use growth modification appliances when indicated.

MODULE 4: Most Common Malocclusions

In this module, the most common malocclusions are described, as well as the most common and efficient approaches to deal with the problem presented. These descriptions are general in nature but help the practitioner better understand the correct sequence of treatment required to optimize the planned orthodontic treatment. The treatment approaches are based on the application of a sound diagnosis, a well-developed problem list, and a correctly formulated force system sequence. A mechanistic approach where all malocclusions are approached in the same manner with the same mechanics is not the most appropriate method to treat malocclusions of different etiologies, and these wire sequence concepts are not described in this course.

AT THE END OF MODULE 4, PARTICIPANTS WILL BE ABLE TO:

1. Diagnose the most common malocclusions
2. Correctly present a differential diagnosis of the most common malocclusions
3. Create a problem list to address these malocclusions
4. Understand the most appropriate biomechanical system to address these malocclusions
5. Prescribe the correct appliances needed
6. Describe the most appropriate technique to resolve the studied malocclusion.

MODULE 5: Adult Orthodontics - Aligner Therapy

The primary objective of Module 5 is to expose the dental professional to the systematic approach of malocclusions in non-growing patients. The secondary objective is to discuss the role of orthodontics in the management of the aging and restored dentition.

The adult patient presents unique challenges to the practitioner when orthodontics is contemplated. The dentition may be heavily restored, the periodontal condition may also be far from optimum, and partial edentulism may complicate the treatment options. Skeletal malocclusions that have been compensated by dentoalveolar response are also difficult to approach and may require orthognathic surgery or significant compensations.

Orthodontics may be of great benefit when a prosthetic rehabilitation is contemplated, but the treatment plan must be carefully established and executed to avoid disappointment at the end of treatment.

As aligner therapy has gained considerable momentum in the past 10 years, and a large amount of time is devoted to the selection, diagnosis, and treatment planning of malocclusions amenable to aligner therapy. Fundamental and important biomechanical principles of aligner force systems application specific to aligners, as well as their clinical implications are presented.

AT THE END OF MODULE 5, PARTICIPANTS WILL BE ABLE TO:

1. Differentiate between the adolescent and the adult dentition
2. Understand and recognize periodontal considerations in orthodontics
3. Correctly diagnose and approach the aging dentition
4. Describe orthodontics-periodontics treatment
5. Describe orthodontic-prosthodontic treatment
6. Understand the concept of the interconnected approach to treatment
7. Diagnose and create problem list for patients in need of aligner treatment.