



IFDE
INTERNATIONAL
FOUNDATION FOR DENTAL EDUCATION

LEVEL 1: TREATMENT OF SIMPLE TO MODERATE MALOCCLUSIONS

COURSE OUTLINE

COURSE NAME

“Orthodontic Management of Simple to Moderate Malocclusions: an Online and Onsite Course for Dentists”

This course is designed to improve the knowledge and ability of dentists from emerging countries to diagnose, select and treat patients with simple to moderate malocclusions. “Orthodontic Management of Simple to Moderate Malocclusions: an online and onsite course for Dentists” is an 18-month course that uses blended learning to provide general dentists with an opportunity to learn how to manage orthodontic treatment of patients with simple to moderately complex malocclusions at an internationally acceptable level. The online modules allow students to learn and study at home or work while onsite sessions (in dedicated cities) and online supervision allow students to learn and practice patient skills under the supervision of orthodontists recognized by the World Federation of Orthodontists (WFO). This course does not replace post-graduate specialist programs, but it is a step forward in teaching international level orthodontic care.

GOALS

This course is designed to improve the knowledge and ability of dentists to diagnose, select and treat patients with simple to moderate malocclusions. At the end of the course, the participants are expected to be able to recognize, diagnose, select and manage the treatment patients with simple to moderate malocclusions. Participating dentists will also learn to recognize and to refer more severe or complex cases to specialists or other dentists better- trained in orthodontics.

COURSE DIRECTOR

Dr. Jean-Marc Retrouvey

Director Division of Orthodontics
McGill University
President IFDE

CLINICAL DIRECTOR

Dr. Neil Kay

Orthodontist
Clinical Director IFDE
HVO Orthodontic Representative for Vietnam

LOCAL FACULTY

REFERENCE TEXTS, REFERENCES, AND MANUALS

- Orthodontic Diagnosis – Dr. J.-M. Retrouvey, McGill University. The website www.discoverortho.com is the main reference “manual” to be used. More lectures will be included during the course. These lectures will be given during the onsite portion and will be made available to the participants.
- Contemporary orthodontics. Proffit, W.R. and Fields, H.W. Mosby Year Book, Fourth, 2000.
- Biomechanics and Esthetic Strategies in Clinical Orthodontics. [Ravindra Nanda](#), W B Saunders Co. April 2005.
- Orthodontics – A Patient Education Guide, American Association of Orthodontists.
- Orthodontic Glossary – Glossary of dentofacial orthopedic terms. American Association of Orthodontists, 1993 Edition.
- Orthodontics – Current principles and techniques. Graber, T.B., Vanarsdall, R.I. Mosby Year Book. Second Edition, 1994.
- Burstone, Charles J., and Kwangchul Choy. *The biomechanical foundation of clinical orthodontics*. Quintessence Publishing Company, Incorporated, 2015.
- Biomechanics in Orthodontics. Dr Giorgio Fiorelli, Dr Birte Melsen <http://www.ortho-biomechanics.com/en/>

LECTURERS

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OBJECTIVES

UPON SUCCESSFUL COMPLETION OF THE COURSE THE PARTICIPANT WILL BE ABLE TO:

- Perform a comprehensive clinical examination including radiographic and study cast evaluations.
- Analyze the diagnostic records, provide a diagnosis and propose treatment plans.
- Understand the etiology of malocclusions, preventive/interceptive treatment.
- Understand the requirements for a normal functional occlusion and the orthodontic treatment objectives to obtain a functional occlusion.
- Further understand the use and limitation of removable appliances versus the advantages of the contemporary fixed appliances.
- Understand the need for extractions in orthodontic treatment.
- Differentiate between skeletal, dental and myo-functional problems.
- Perform a comprehensive clinical examination, provide a diagnosis and propose an ideal and at least one compromised (limited) treatment plan.
- Evaluate new patients and determine if the patients' malocclusions are within his/her competence to treat and end with a good result.
- Prescribe, insert, adjust and activate a removable appliance.
- Perform fixed orthodontic treatment for simple and moderate malocclusions:
 - Select, when indicated, and to cement orthodontic bands
 - Bond orthodontic brackets
 - Insert orthodontic wires and auxiliaries
- Monitor treatment progress to international standards.
- Remove orthodontic brackets and provide appropriate orthodontic retainer(s).

COURSE CURRICULUM

The course curriculum will have two components; online and clinical. Six online modules will cover theory and knowledge to prepare participants to examine, treat, and explain the pros and cons of treatment options for patients with simple to moderate malocclusions. Six onsite sessions will require participants to present and discuss orthodontic evaluation and management as well as to learn and practice the clinical skills used in orthodontic care. Each participant must also examine, treat, present and defend two patient cases under the supervision of orthodontists recognized by the WFO. Most importantly, participants will learn which malocclusions are too complex for them to treat competently.

The online and clinical components are closely matched for content and must be taken in the sequence given below. All preceding online modules and onsite sessions must be completed before the next session or module can be started.

COURSE MATERIALS

Course material will be distributed, and a necessary material list will be sent to registered participants in advance. Access to a typodont is essential for the completion of this course.

COURSE LENGTH

Participants should be able to complete the course's six online modules and six onsite sessions in 18 months. However, the time to complete treatment and retention for the two patient cases required for successful course completion will take longer; about 24 months.

SUCCESSFUL COURSE COMPLETION REQUIRES THAT PARTICIPANTS:

- Pass final examinations for online modules that will be given onsite
- Successfully participate in all onsite sessions by completing all skills, answering questions and participating in discussions about patient care
- Complete all patient records then present and defend the two patient cases to demonstrate successful examination, management, and retention of patients with simple to moderate malocclusions.

ASSIGNMENTS AND EVALUATIONS

- Quizzes during each online module: 20%
- Theoretical exams during each onsite visits: 30%
- Clinical Examination (OSCE): 20%
- Case presentations (2): 20%
- Laboratory Exercises: 10%

The first half day of each onsite module will be devoted to a review of the online material and an examination. The last half day of all onsite modules will be devoted to a review of the whole module and a final examination.

The online quizzes will consist of multiple choice questions.

The onsite examinations will consist of multiple choice and short essay question.

CLINICAL EXAMINATION (OSCE)

The first clinical exam will be held at the end of the first onsite module. It is a 2-hour examination. The format is based on the OSCE type. It will consist of case studies, elaboration of diagnostic procedures, clinical and laboratory procedures. The format of the questions is multiple choice and a short essay. The second one will be held at the end of the six modules.

CASE PRESENTATION

A case presentation is part of the first onsite module. Each student must present the treatment options, diagnosis and treatment objectives on every patient selected by them. Students are required to present a second case that will be marked at the end of the six modules. Students will be evaluated on the following:

- Data collection
- Quality of the presentation
- Interpretation of radiographs (performing a cephalometric analysis)
- Diagrams
- Treatment and Study models.

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MODULE 1: ORTHODONTIC DIAGNOSIS

This module will present the correct way to examine patients from an *orthodontic perspective*. We will view or review very important concept in orthodontic examination, and so you can learn to recognize signs of malocclusions and arrive at a correct diagnosis.

Once all the data have been gathered and analyzed, a thorough diagnosis of the observed malocclusion is obtained. To further validate the diagnosis, differential diagnosis procedures are done to differentiate between malocclusions, which appear similar but are of varying etiologies.

Malocclusions of varying severities will sometimes present similar clinical features (ex: increased overjet) *but will present different challenges depending on their underlying etiology*.

Being able to recognize simple to moderate malocclusions by obtaining a proper diagnosis and applying correct, simple but effective biomechanical concepts will dramatically increase your success rate and the quality of the orthodontic treatment you provide to your patients.

EDUCATIONAL OBJECTIVES

UPON SUCCESSFUL COMPLETION OF MODULE 1 OF THE ONLINE COURSE THE STUDENT WILL BE ABLE TO:

- Discuss the importance of timing of treatment and the early detection of malocclusion
- Classify occlusion according to Angle principles

- Discuss the effect that oral habits have on the dentition
- Recognize factors that contribute to the development of a malocclusion
- Discuss transverse, anteroposterior, vertical discrepancies
- Differentiate functional from non-functional discrepancies
- Discuss the goals of orthodontic treatment
- Recognize when orthodontic treatment should be initiated
- Discuss eruption problems
- Discuss the importance of orthodontics in multidisciplinary adult care
- Motivate patients to comply with treatment
- Motivate patients to maintain effective oral hygiene.

UPON SUCCESSFUL COMPLETION OF THE ONLINE CLINICAL COURSE, THE STUDENT WILL BE ABLE TO:

- Know how to fabricate dental casts
- Make an interocclusal record
- Interpret radiographs
- Perform a basic cephalometric analysis
- Perform an Orthodontic examination
- Prepare a treatment plan with the assistance of an instructor
- Present a treatment plan to a patient
- Perform a space analysis on Orthodontic casts
- Prescribe, insert, adjust and activate a removable appliance
- Place orthodontic brackets for simple malocclusions

QUIZZES

- All sections of each module will be assessed with quizzes. To obtain a certificate of participation, the student must take and pass all quizzes.
- A final examination will be available at the end of each module to verify that the student has completed the given module successfully.

CLASS TIME AND EXAM TIME

ONLINE SCHEDULED CURRICULUM TIME PER STUDENT

Lecture	Webinars	Seminar/Small Group	Reading
30 hrs	2	10	10 hrs

ONSITE EVALUATION TIME PER STUDENTS

Cases Preparation	Quizzes		Final Exam & OSCE
10 hrs	2		2

MODULE 2: BIOMECHANICS

This module will introduce the basics of biomechanics as applied to orthodontic tooth movement in malocclusions of moderate severity.

Basic concepts such as force systems, centre of resistance, simple vector mechanics and individualized tooth movement will be presented.

The straight wire system and some of its variations will be discussed.

UPON SUCCESSFUL COMPLETION OF MODULE 2 OF THE ONLINE COURSE THE STUDENT WILL BE ABLE TO:

- Understand the role of the periodontal ligament in orthodontic tooth movement
- Understand bone remodeling concepts
- Discuss the biology of tooth movement
- Understand force systems
- Understand forces and moment interactions
- Apply correct force systems

- Calculate force systems at the center of resistance
- Understand anchorage requirements
- Be exposed to the straight wire system
- Understand wire technology.

ONLINE SCHEDULED CURRICULUM TIME PER STUDENT

Lecture	Webinars	Seminar/Small group	Reading
30 hrs	4	10	10 hrs

ONSITE EVALUATION TIME PER STUDENTS

Exercises	Quizzes		Final Exam
10 hrs	2		2

MODULE 3: INTERCEPTIVE ORTHODONTICS

This module's content concentrates mainly on the orthodontics' approach for the growing patient. It is divided into several sections to allow for some review of currently known concepts, concepts that you may be aware of and concepts that you will discover to render the approach of your growing patients more systematic and predictable.

In this module, diagnosis and treatment planning about intercepting developing malocclusions will be presented. Normal and abnormal growth and development patterns, sequence of tooth eruption, trauma and oral habits will be discussed.

The most efficient treatment approaches to correct developing malocclusions in the mixed dentition will be discussed. The advantages and relevance of intercepting a malocclusion will also be presented.

The first part of the module is devoted to the development of the dentition until all permanent teeth are present. Normal development as well as most common alterations in the developmental process, which have a significant impact on the occlusion, will be discussed.

The following section will address simple concepts of normal growth as well as abnormal growth as related to the craniofacial complex. Abnormal growth patterns will be explained only in the normal patient as syndromes, and craniofacial aberrations are not covered in this course.

The third part will address each particular condition affecting the patient principally in the mixed dentition will be covered in the interceptive section. Leeway space control, ectopic eruption, crossbites will be reviewed, explained, and their treatment regimen explained in this section.

The last section will be relating to the most common appliances used to correct the type of malocclusions that this course allows participants to treat. The description of the malocclusion, the proper diagnosis and correct design of the appliance will be explained. The insertion, method of activation, principle benefits as well as side effects of each appliance will also be thoroughly explained.

UPON SUCCESSFUL COMPLETION OF THE MODULE 3 OF THE ONLINE COURSE THE STUDENT WILL BE ABLE TO:

- Recognize abnormal dental eruption patterns
- Recognize developing malocclusions
- Perform mixed dentition analyses
- Manage oral habits
- Intercept developing dento-alveolar malocclusions
- Manage posterior crossbites
- Manage anterior crossbites
- Place space maintainers when indicated.
- Use the most efficient appliances for developing malocclusions

ONLINE SCHEDULED CURRICULUM TIME PER STUDENT

Lecture	Webinars	Seminar/Small group	Reading
30 hrs	4	10	10 hrs

ONSITE EVALUATION TIME PER STUDENTS

Exercises	Quizzes		Final Exam
10 hrs	2		2

MODULE 4: MOST COMMON MALOCCLUSIONS

This module will highlight the most common malocclusions and their generic expressions treated by orthodontics alone and will emphasize the importance of differential diagnosis in proper assessment of the problem presented.

Different types of Class I, II and III malocclusions will be discussed with an emphasis placed on developing an ability to grade the malocclusion in term of severity to facilitate the selection process and the timely referral by the participant.

The diagnosis of and treatment planning for each type of malocclusion will be explained using the same parameters studied in our diagnosis module. The most common biomechanical approach for each type of malocclusion will be presented in its generic application. As all malocclusions are different in scope and severity, it is not possible to apply a generic treatment indiscriminately. It is important that you take the following as general guidelines and adapt the concepts presented here when you treat an individual's malocclusion. The malocclusions presented in this module are only a small sample of all possible malocclusions, as infinite variations exist in nature.

ONLINE SCHEDULED CURRICULUM TIME PER STUDENT

Lecture	Webinars	Seminar/Small group	Reading
30 hrs	2	10	10 hrs

ONSITE EVALUATION TIME PER STUDENTS

Exercises	Quizzes		Final Exam
10 hrs	2		1

MODULE 5: ADULT ORTHODONTICS

In this module, we will present selection criteria for adult orthodontic treatment. The interdisciplinary approach between orthodontics, periodontics, and prosthodontics will be discussed to approach the patient presenting challenging dental care.

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 dento-alveolar response are also difficult to approach and may require orthognathic surgery.

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 the treatment.

Onsite and online Module 5 will address all these concerns and will present different modalities of treatment to address the concerns and fulfill the expectations of the adult patient.

The concept of surgical orthodontics will be introduced in didactic online lectures to familiarize the participant with the existence of these procedures and their indications in severe skeletal malocclusions. Emphasis will be placed on avoiding attempting treating skeletal malocclusions with an orthodontic approach only.

ONLINE SCHEDULED CURRICULUM TIME PER STUDENT

Lecture	Webinars	Seminar/Small group	Reading
30 hrs	2	10	10 hrs

ONSITE EVALUATION TIME PER STUDENTS

Exercises	Quizzes		Final Exam
10 hrs	2		1

MODULE 6: FINISHING

This last module will be a summary of all the modules, final case presentation, and a final examination. Progress cases will be analyzed and discussed, and instructions on the most appropriate way to finish started cases will be given.

Retention and relapse will be discussed as well as iatrogenic effects of orthodontics.

A certificate of achievement will be given at the end of this module for students having completed all modules as well as successfully pass the exams.

ONLINE SCHEDULED CURRICULUM TIME PER STUDENT

Lecture	Webinars	Seminar/Small group	Reading
30 hrs	2	10	10 hrs

ONSITE EVALUATION TIME PER STUDENTS

Exercises	Quizzes		Final Exam
10 hrs	2		1

At the end of module 6, a final exam, a case presentation, and an oral examination will take place to ensure students have mastered the knowledge. This exam will be given by the faculty under guidance from Dr. Retrouvey and will last a whole day to allow sufficient time for the students to prepare.

APPLICATION TO COURSE

Practicing dentists can apply online at www.discoverortho.com via credit card or PayPal. Each class is limited to 20 students. Students must register and pay for the whole course. Installment payments are available.

CERTIFICATES OF COMPLETION

After successful completion of all online modules and onsite sessions, participants will be awarded a Certificate of Course Completion signed by representatives from each of the three sponsoring partners.

After successful defense of two complete patient cases that were approved in advance, the participant dentist will be awarded a Certificate of Clinical Completion. This certificate will be signed by representatives of the three sponsoring agencies including Dr. Neil Kay and supervising orthodontists. This certificate will verify that the patient cases met standards used by the American Association of Orthodontists (AAO) as applied to patients with simple to moderate malocclusions

COURSE SPONSORS

The development and implementation of this course is a joint effort of the (1) International Foundation for Dental Education, (2) Health Volunteers Overseas and the (3) partner university in the dedicated city. The respective contributions and responsibilities of each partner include:

INTERNATIONAL FOUNDATION FOR DENTAL EDUCATION (IFDE)

Description: IFDE is a non-profit organization based in Montreal, Quebec (Canada). Information about IFDE can be found at www.discoverortho.com

Responsibilities: IFDE, under the leadership of Dr. Retrouvey, is in charge of course development and the creation of all online modules including lessons and activities. Experienced teachers will contribute content under the guidance of Dr. Retrouvey.

Dr. Jean-Marc Retrouvey, Director of the Division of Orthodontics at McGill University in Montreal, Quebec; Canada has been teaching and developing curricula for diagnostic skills and treatment planning in orthodontics for the past 14 years. He is the author of the "Orthodontic Diagnosis" CD and creator of the Virtual Orthodontic Case Study (VOCS) interactive orthodontic treatment planning software.

HEALTH VOLUNTEERS OVERSEAS (HVO)

Description: HVO is a non-profit organization based in Washington, DC (USA). Information about HVO can be found at www.hvousing.org.

Responsibilities: HVO, under the project leadership of Dr. Kay, is responsible for leading and coordinating on-site sessions, recruiting and orienting orthodontists to mentor and

to supervise participants' patients, and to manage the final review of patient records required for course completion.

Dr. C Neil Kay owns and operates a private orthodontic practice in Illinois (USA). He managed an HVO orthodontic program in Vietnam from 1993-2011. For the past 20 years, Dr. Kay has been teaching orthodontics in Vietnam and seeing Vietnamese patients regarding the management of their malocclusions.

PARTNER UNIVERSITY

Description: The teachers in the partner university are responsible for teaching orthodontics to dental students and treating patients with malocclusions.

Responsibilities: The teachers in the Department of Orthodontics will coordinate all onsite sessions and provide an in-country contact for course participants and potential course students.