Final Report CTL Summer Student Employment Award

Project: “Develop multimedia lecture materials and App for DENT 530: Orthodontic Biomechanics and Techniques”

The course is designed to prepare the student for treating patients in a clinical setting. The aim of the course is to introduce the foundational concepts for understanding both the laws of mechanics and the typical tissue responses to force systems used in orthodontic appliances.

COURSE OBJECTIVES: The student will demonstrate an understanding of how orthodontic appliance systems are used to achieve treatment objectives. The student will demonstrate competence in wire bending and manipulating orthodontic fixed appliance/clear aligner system and will describe the concepts of skeletal anchorage in planning orthodontic tooth movement.

Based on these objectives, the program developed during summer months involved:

- Recruiting clinical cases from the University of Alberta Orthodontic Clinic treated with clear aligner system to develop a comprehensive multimedia lecture including all type of cases/malocclusions emphasizing the mechanics with clear aligners.
- Finding appropriate literature for seminar discussions. They are allocated to each session based on the topic. They consist of classic papers as well as evidence-based new advances in orthodontics. This will help students be exposed to old and new literature that will enhance the learning experience and prepare students for certification exams. The purpose of these exercises will be to reinforce in practical terms the basic concepts and principles taught during the course.
- Designing and prototyping the App using Justinmind software where students can find all the theoretical material, short videos to help master wire bending skills and links to relevant literature organized by topics/sessions.
- Developing the virtual platform of the course on Moodle using the information collected. Students enrolled in the course can access the information from their Moodle account. In addition, as Moodle from the Faculty of Medicine and Dentistry is improving its Mobile Application, it will be used as the first step for students to get access to the gathered information from their phones.