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Example of curated SIM content

Below is one of the curated content examples which might inspire you to start developing your own.

The screenshot shows a course page in UCREDs. At the top, there are navigation icons for home, search, and user profile, along with the text "ODL Program Course Learning Path Micro Course" and the user name "ZULISMAN BIN MAKSOM".

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CAD Modeling: Easy Modeling Vertebrae Bone using MRI Images

Introduction to CAD Modeling for Medical Technology

Advancing Engineering for Medical Technology

In recent years, the application commonly applied in engineering has been expanded in clinical and health studies. Computer Aided Design (CAD) in particular is a modelling technique synonymous to engineering students and practitioners. Very recently, the technique has been increasingly applied in medical technology as it allows researchers to understand the mechanical principle of the biological system in a less invasive nature. Establishing CAD model of human system allows specific customisation and the CAD model can be developed for subject-specific patient. Various application of CAD modelling in medical technology may benefit for 3D reconstruction, design of treatment device, design of implants and biomechanical evaluation from computational simulation. Figure 1 illustrate the CAD model of the L4-L5 lower spinal unit developed to evaluate the nerve impingement mechanic following spinal deformation.

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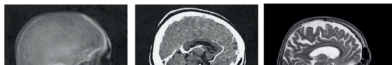
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Figure 1. CAD model of the L4-L5 lower lumbar spinal unit.

Medical Imaging

Medical imaging is the procedure to create slices of images from the parts of your body to evaluate the internal condition of the human system. Its primary purpose is to screen for possible health conditions before symptoms appear. Also, it is being used to diagnose the likely cause of existing symptoms while monitoring health conditions that have been diagnosed, or the effects of certain treatment for specific patient. Different imaging techniques are employed depending on its scanning method and image clarity. Figure 2 illustrate the different imaging quality attained from x-ray, CT Scan and MRI. Although certain technique showed higher clarity compared to other method, Unfortunately, the limitation of the medical images is that it is simply a projection of flat 2D-images in multiple slices. Therefore, building up the 3D-model of the 2D image slices requires additional segmentation process.



The following video illustrates the step-by-step guide on navigating through the database, its image specification, and later on we will download the required data set for our practise.

Video 2: Collecting Medical Images

