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PHYSICS IN THE DISCIPLINE OF MEDICAL RADIATIONS IN AN AUSTRALIAN UNIVERSITY

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X-ray imaging has become fundamental diagnostic tool in healthcare. More than four billion medical images are being captured globally in each year for clinical purpose by using ionizing radiations. There is an increasing demand for delivery of additional diagnostic and therapeutic services from medical radiations and imaging sectors worldwide as the population is growing. For high-quality healthcare a sustainable medical radiations and imaging technology workforce is absolutely important. Medical radiations and imaging are highly technologically driven professions. Adequate knowledge in physics is the basic requirement for any medical radiation technologists working in medical radiation centres where ionizing radiations are used. The purpose of this paper is to discuss courses of physics we teach and the challenges we face in teaching physics to the undergraduate students in the discipline of medical radiations in an Australian University. Although laws of physics are applied in the development and use of diagnostic and therapeutic medical equipment, the physics is not loved by the students as a subject as it should be. There are 13 medical radiations physics courses (including radiography, nuclear medicine, radiotherapy, CT, MRI, and Ultrasonography) are taught in undergraduate medical radiations program in our discipline. In this paper teaching methods of medical radiation physics will be discussed and students' approach to learn this subject in this department will be analysed. The teaching techniques and initiatives will be discussed along with their success and failure. It is evident that students in medical radiations program look at physics differently compared to the students in other physics programs. In medical radiations students are eager to see more direct applications of physics compared to the basic theory behind it. Some students believe that it is possible to be a good radiological technologist without having proper understanding of physics. Some students have a general repelling attitude toward learning physics in this discipline. But this attitude can be changed with the modification of traditional method of physics teaching by showing its application in the field of medicine.

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