

MODULE HANDBOOK

Module Name	:	Radiology Physics
Module Level	:	Bachelor
Abbreviation, if applicable	:	FI3151
Sub-heading, if applicable	:	
Semester/ term	:	5/third year
Module Coordinator(s)	:	
Lecturer(s)	:	
Language	:	Bahasa Indonesia
Classification within the curriculum	:	Elective Study
Teaching format/ class hours per week during the semester	:	2 hour lecture
Workload	:	2 hours lecture, 4 hours individual study, 15 weeks per semester, and total 90 hours per semester
Credits Points	:	2
Requirements	:	<ol style="list-style-type: none"> 1. FI2101 Mathematical Physics IA 2. FI2102 Mathematical Physics IIA 3. FI2204 Modern Physics
Learning goals	:	<p>Knowledge:</p> <ol style="list-style-type: none"> a) Ability to describe the classification of radiation used in medicine. b) Ability to understand radiation units and calculate their units and quantities used in medicine c) Ability to describe the interaction of radiation with matters used in medicine d) Ability to calculate parameters of radiation interaction with matters used in medicine e) Ability to describe the concepts of attenuation, penetration, stopping power and transfer energy linear f) Ability to calculate parameters of attenuation, stopping power and transfer energy linear g) Ability to identify kinds of radioactive sources and describes their productions h) Ability to calculate radioactive parameters i) Ability to describe the benefits and the drawbacks of medical imaging modalities j) Ability to describe image characteristics and qualities k) Ability to describe image reconstruction procedure l) Ability to analyze and point out the solution concerning utilization of radiation in medicine. m) Ability to generate scientific oral and written communication.

Content	: The course is provided for students of Physics Study Program or others who interested in medical physics as well as for students who want to be a medical physicist. This course is an optional course for student who have already taken some courses such as mathematical physics and modern physics. After following this course, the student will have some background knowledge in undstanding radition physics concept and basic principle which is used for medical aspect. Radiation clasification, radiation quantities and units, direct and indirect ionization radiation. Radiation interaction with matter. Interaction parameter concept such as attenuation, penetration, stopping power and transfer energy linear. Radioactive sources and productions. Radiation safety concept. Knowledge in imaging modalities, the benefits and the drawbacks. Image characteristics and qualities. Image reconstruction procedure.
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