

Module Handbook

Course:	Introduction to Radiology Physics and Dosimetry
Module Level:	Undergraduate
Code:	FIB 203
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	2 nd /First year
Module Coordinator:	Prof. Dr.Ir Suhariningsih,
Lecture(s):	Prof. Dr. Ir Suhariningsih, Dr. Suryani D Astuti, M.Si
Language:	Bahasa Indonesia
Classification within the Curriculum:	Compulsory Course / Elective Course
Teaching format /class hours per week during the semester:	2 hours of lecturers (50 minutes per hour)
Workload:	2 hours of lecturers, 1 hour (60 minutes) of tutorial dan structural activities, 1 hour of (60 minutes) individual study, 13 weeks per semester, and total of 78 hours per semester ~ 2.6 ECTS*
Credit Points:	2
Requirement(s):	(FID201) Modern Physics
Learning Goals/ Competencies:	<p>General Competence (Knowledge): To identify radiodiagnostic and radiotherapy facilities in hospitals, quality control processes, and dosimetry measurements</p> <p>Specific Competence:</p> <ol style="list-style-type: none"> 1. Students are able to understand the classification of radiation, magnitude and units of radiation, direct and indirect ionizing radiation, interaction between radiation with matter and attenuation exponential. 2. Students are able to understand the radioactive decay, radiation dosimetry and radioactive detector calibration.
Contents:	This course discusses the classification of radiation, magnitude and units of radiation, direct and indirect ionizing radiation, interaction between radiation with matter, attenuation exponential, radioactive decay, charged particles and the radiation balance, radiation dosimetry, cavity theory, ionization chamber, photon and electron calibration of ionization chamber, relative dosimetry technique, mechanical absolute dosimetry.
Study/Exam Achievements:	<p>Students are considered competent and eligible to pass the course upon obtaining at least 50% of maximum score for the midterm test, final examination, quizzes and home work.</p> <p>Final score is calculated as follow: 20 % homework + 10% Quizzes + 32.5% midterm test + 32.5% final exam + 5% soft skill.</p> <p>Final grade is defined as follow :</p> <p>A : 75 – 100 AB : 70 - 74.99 B : 65 - 69.99</p>

	BC : 60 - 64.99 C : 55 - 59.99 D : 40 - 54.99 E : 0 - 39.99
Forms of Media:	Powerpoint slides, LCD projectors and whiteboards
Literature(s):	1. F. H. Attix. <i>Introduction of Radiological Physics and Radiation Dosimetry</i> (John Willey and Sons, New York, NY, 1986) 2. H. E. Johns and J. R. Cunningham. <i>The Physics of Radiology</i> , 4 th ed. (Charles C. Thomas, Springfield, IL, 1983) 3. J. F. Knoll. <i>Radiation Detection and Measurement</i> . 3 rd ed. (John Willey and Sons, New York, NY, 2000).
Notes:	*Total ECTS= $\{(total\ hours\ workload \times 50\ min) / 60\ min\} / 25\ hours$ Each ECTS is equals with 25 hours