Module Handbook

Module Name:	Dosimetry and Radiation Protection
Module Level:	Bachelor
Abbreviation, if applicable:	FI3251
Sub-heading, if applicable:	
Courses included in the module, if applicable:	
Semester/term:	Third year
Module coordinator(s):	
Lecturer(s):	
Language:	Bahasa Indonesia
Classification within the curriculum:	~~General Studies~~ / ~~Major Subject~~ / Elective Studies
Teaching format / class hours per week during the semester:	2 hours lectures
Workload:	2 hours lectures, 4 hours individual study per week, 16 weeks per semester, and total 96 hours a semester
Credit Points:	2
Requirements:	FI2101 Mathematical Physics IA, FI2201 Mathematical Physics IIA, FI2204 Modern Physics
Learning goals/competencies:	Knowledge – Ability to describe basic principles of dosimetry and working principles of radiation detectors used in medicine. – Ability to describe the calibration process of ionization chamber for electron and photon beam – Ability to describe relation between microscopic interaction and cell responses, deterministic effects and stochastic radiation protection – Ability to describe staging needed to do protection radiation and able to plan processes to reduce radiation hazard.. – Ability to describe the concept protection radiation of non-ionization radiation. Skill – Ability to operate regulation and management of radiation's waste. – Ability to generate scientific communication in words and in print.
Content:	After having this course, the students have able to understand the dosimetric concept and also protection radiation. In addition,the students are also understanding the effect of radiation in human and can make a design to protect from the radiation. The course will provide some general topics including radiation dosimetry, cavity theory, ionization chamber, calibration of ionization chamber for electron and photon beam, relative and absolut dosimetrie technique, basic concept of protection radiation and ALARA, design and planning radiation shielding, regulation and management of radiation's waste and protection's concept of non-ionization radiation.
Study/exam achievements:	Students are considered to be competent and pass if at least get 50% of maximum mark of the exams, homework and research based learning.
Forms of Media:	Slides and LCD projectors, blackboards, lab.
Literature:	1. F. H. Attix. Introduction of Radiological Physics and Radiation Dosimetry (John Willey and Sons, New York, NY, 1986) 2. G. Shani, Radiation Dosimetry: Instrumentation and Methods, 2nd Edition, CRC press, 2001

	3. H. Cember: Introduction to Health Physics, 4th Edition, Mc Grow Hill Medical, 2009 4. Podgorsak, Radiation Oncology Physics: Handbook for Teacher and Student. (IAEA, 2005) 5. H. E. Johns and J. R. Cunningham. The Physics of Radiology, 4th ed. (Charles C. Thomas, Springfield, IL, 1983)
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