UIN SUNAN KALIJAGA YOGYAKARTA
FACULTY OF SCIENCE AND TECHNOLOGY
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Undergraduate Programme in Physics

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MODULE HANDBOOK

Module Name	Medical Physics
Module level, if applicable	Bachelor
Code, if applicable	FIS424045
Subtitle, if applicable	-
Courses, if applicable	-
Semester(s) in which the module is taught	5th (Fifth)
Person responsible for the module	Dr. Nita Handayani, M.Si
Lecturer(s)	Dr. Nita Handayani, M.Si
Language	Indonesia
Relation to curriculum	compulsory course in the third year (6th semester) Bachelor Degree
Type of teaching, contact hours	150 minutes lectures, and 180 minutes structured activities per week.
Workload	Total workload is 136 hours per semester, which consists of 150 minutes lectures per week for 14 weeks, 180 minutes structured activities per week, 180 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam
Credit points	3
Requirements according to the examination regulations	Minimal attendance 75% All assignments are submitted Come to class on time
Recommended prerequisites	Atomic and Nuclear Physics
Module objectives/intended learning outcomes	After completing this course, the students: CO 1. Able to explain the concepts of classical physics and modern physics which can be applied in the field of medical physics such as biomechanics, biofluids and electrophysiological signals. CO 2. Able to explain the working principles of various technologies and instruments used in the medical field (such as mammography, ultrasound, CT scan, MRI, PET scan, SPECT, Gamma camera) and apply them for diagnostics and therapy. CO 3. Able to formulate and analyze scientific studies and research related to medical physics and its applications.
Content	Scope of Medical Physics, Roles and Responsibilities of Medical Physicists, Biomechanics, Biofluid Mechanics, Electrophysiological Signals, Biomedical Instrumentation, Radioisotopes and Introduction to Nuclear Medicine, Ionizing Radiation: Dosage and Exposure, Radiation Standards and Protection, Non-Ionizing Electromagnetic Radiation, Applications of Radiation in Radiotherapy , Introduction to Radiation Applications in Radiodiagnostics, Radiation Applications in Nuclear Medicine.

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Study and examination requirements and forms of examination

The final mark will be weighted as follows:

NO	Assessment methods (components, activities)	Weight (percentage)
1	Final Examination	30%
2	Mid-Term Examination	30%
3	Class Activities : Quiz, Homework, etc.	20%
4	Project Based Learning (PBL)	20%

The final assessment is expressed in the form of a letter value converted from a number value with the following categories:

NO	Number Value	Letter Value	NO	Number Value	Letter Value
1	≥ 95	A	7	65-69.99	B/C
2	90-94.99	A-	8	60-64.99	C+
3	85-89.99	A/B	9	55-59.99	C
4	80-84.99	B+	10	50-54.99	C-
5	75-79.99	B	11	55-34.99	D
6	70-74.99	B-	12	<35	E

Media employed: White-board, LCD Projector, e-learning (https://daring.uin-suka.ac.id/)

Reading list

1. Muhammed Maqbool, *An Introduction to Medical Physics*, Springer International Publishing, 2017
2. B.H. Brown, R.H. Smallwood, D.C. Barber, P.V. Lawford and D.R. Hose, *Medical Physics and Medical Engineering*, Institute of Physics Publishing, 1999
3. Herman Chamber, Thomas Johnson, *Introduction to Health Physics: Fourth Edition*, McGraw-Hill Medical, 2008

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
CO 1		√							
CO 2				√					
CO 3							√		