Course:	**Nuclear Physics**
Module Level:	Undergraduate
Code:	FIN401
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	6th / Third Year
Module Coordinator:	Febdian Rusydi, Ph.D
Lecturer(s):	Febdian Rusydi, Ph.D, Herri Trilaksana, Ph.D., Andi H. Zaidan, Ph.D., and Prof. Surhariningsih
Language:	English
Classification within the Curriculum	Compulsory Course / ~~Elective Course~~
Teaching format / class hours per week during semester:	3 hours of lectures (50 minutes/hour)
Workload:	3 hours of lectures, 3 hours of structural activities, 3 hours of individual study, 14 weeks per semester, and total of 126 hours per semester 4.2 ECTS*
Credit Points:	3
Requirement(s):	FIT301 Quantum Physics
Learning Goals/Competencies:	**General Competence (Knowledge) :** Students are explain radioactive phenomena based on quantum physics **Specific Competence:** 1. Ability to explain the nuclear model. 2. Ability to explain the detection of alpha, beta, and gamma decay. 3. Ability to explain the origin of alpha, beta, and gamma decay.

Contents:	There are two topics in FIN401 Nuclear Physics: (1) nuclear structure and (2) nuclear decay. Students learn three models of nuclear structure, Liquid drop model, Fermi gas model, and Shell model. While the first two are empirical approach, the last one requires the understanding of quantum physics (FIT301). Student use the nuclear structure to understand the origin of nuclear decay (alpha, beta, and gamma) and the method to detect them. ——————————————————— Competence Literature Chapter ——————————————————— 1 1 15 2 3 ——————————————————— 2 2 7 ——————————————————— 3 1 16 2 6, 8 ,9, 10 ———————————————————
Soft Skill Attribute	Effort and ethic.
Study/Exam Achievements:	Passing grade is D (equivalent of score 40.0 of 100.0). The score is determined by ten time quizzes in each quiz is scored maximal 10 points. Score to grade conversion: A : 75.00 — 100.00 AB : 70.00 — 74.99 B : 65.00 — 69.99 BC : 60.00 — 64.99 C : 55.00 — 59.99 D : 40.00 — 54.99 E : 00.00 — 39.99
Learning Methods:	Lecturing, homework, tutorial
Form of Media:	Whiteboard, projector.
Literature(s):	1. Robert Eisberg and Robert Resnick, Quantum Physics of Atomcs, Molecules, Solid, Nuclei, and Particles, 2nd edition, John Wiley and Sons, 1985 2. Kenneth Krane, Introductory Nuclear Physics, John Wiley and Sons, 1987

Notes:	*Total ECTS={(total hours workloadx50 min)/60 min}/25 hours Each ECTS is equals with 25 hours