UIN SUNAN KALIJAGA YOGYAKARTA
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Undergraduate Programme in Physics

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MODULE HANDBOOK

Module Name	Solid State Physics
Module level, if applicable	Bachelor
Code, if applicable	FIS414038
Subtitle, if applicable	-
Courses, if applicable	Solid State Physics
Semester(s) in which the module is taught	6rd (sixth)
Person responsible for the module	Dr. Widayanti, M.Si
Lecturer(s)	Dr. Widayanti, 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	Minimum attendance 75% All assignments submitted Attendance on time
Recommended prerequisites	
Module objectives/intended learning outcomes	After completing this course, the students: CO 1. Able to explain the basic concepts of structure, lattice, symmetry, and bonding in crystals CO 2. Able to explain concept of X-ray diffraction for characterizing crystal systems. CO 3. Able to explain the fundamental theory in Solid State Physics, which is then expanded to show its relevance to important applications in technology, industry, and current research. CO 4. able to apply the basic concepts provided in the form of examples or cases that illustrate solid state systems
Content	Crystal Structure, Crystal Diffraction and Reciprocal Lattice, Crystal Bonding, Crystal Vibrations, Thermal Properties, Free Electron Fermi Gas, Energy Bands and Semiconductor Crystals

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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	40%
2	Mid-Term Examination	30%
3	Class Activities : Quiz, Homework, etc.	30%

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. Beiser, Arthur. 1992. *Konsep Fisika Modern*. Jakarta: Erlangga
2. Krane, Kenneth. 1992. *Fisika Modern*. Jakarta: Universitas Indonesia
3. Kittel, Charles. 1996. *Introduction to Solid State Physic*. New York: John Wiley & Son, Inc.

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			√	√	√				
CO 4			√	√	√				