UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF PHYSICS EDUCATION
PHYSICS STUDY PROGRAM
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Bachelor of Physics **MODULE HANDBOOK**

Module name:	Statistical Physics
Module level, if applicable:	Bachelor Program
Code:	FSK6218
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	Odd
Module coordinator:	Wipsar Sunu Brams Dwandaru, M.Sc., Ph.D
Lecturer(s):	Wipsar Sunu Brams Dwandaru, M.Sc., Ph.D
Language:	Indonesian English
Classification within the curriculum:	Compulsory Course
Teaching format/class hours per week during the semester:	150 minutes lectures and 180 minutes structured activities per week.
Workload:	Total workload is 136 hours per semester, which consists of 150 minutes lectures, 180 minutes structured activities, and 180 minutes individual study per week for 16 weeks.
Credit points:	2 SKS (3.25 ECTS)
Prerequisites course(s):	Calculus
Course Outcomes	CO1. To show an understanding of the concepts of classical and quantum Statistical Physics: Maxwell-Boltzmann, Fermi-Dirac, and Bose-Einstein statistics. CO2. To show a connection between Statistical Physics and Thermodynamics. CO3. To be able to apply the techniques of Statistical Physics

<table>
<tr><td></td><td>for selected cases.</td></tr>
<tr><td>Content:</td><td>The content of this subject includes: a) Probability distribution; b) Microcanonical, canonical, and grand canonical ensembles; c) Connection of statistical physics to Thermodynamics; d) Ideal gas; e) Interacting classical; f) Simple spin systems; g) Fermion and Bosons; h) Bose-Einstein condensation.</td></tr>
<tr><td>Study/exam achievements:</td><td>The achievements of this study are that students are able to understand i) the overall concepts of Statistical Physics, both for classical and quantum systems; ii) the connection between Statistical Physics and Thermodynamics; and iii) apply the concepts of Statistical Physics to selected cases.

The final mark of the subject may be given as follows:

<table>
<tr><th>No.</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr>
<tr><td>1</td><td>CO1, CO2, and CO3</td><td>a. Individual Assignment
b. Mid Exam
c. Final Exam</td><td>a. Presentation
b. Written</td><td>30%

30%
40%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
</table>
</td></tr>
<tr><td>Forms of media:</td><td>Whiteboard, LCD Projector, Laptop/Computer</td></tr>
<tr><td>Literatures:</td><td>A. Mandl, F. 1998. Statistical Physics, 2nd Ed. Wiley.
B. Reif, F. 1965. Fundamentals of Statistical and Thermal Physics. McGraw-Hill.</td></tr>
</table>

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
CO1		✓							
CO2		✓							
CO3					✓				