

MODULE HANDBOOK

Course:	Statistical Physics
Module Level:	Bachelor
Code:	FIT302
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	5 th / Third Year
Module Coordinator(s):	Drs.Siswanto, M.Si.
Lecturer(s):	Drs.Siswanto, M.Si. and Drs.Djony Izak Rudyardjo,M.Si.
Language:	Bahasa Indonesia
Classification within the Curriculum	Compulsory Course / Elective Studies
Teaching format / class hours per week during semester:	3 hours lectures (50 min / hour)
Workload:	3 hours lectures, 3 hours individual activities, 3 hours structured tasks, 13 weeks per semester, and total 117 hours per semester ~ 3.9 ECTS*
Credit Points:	3
Requirement(s):	(FIT202) Mathematical Physics II and (FIT204) Thermodynamics
Learning Goals/Competencies:	<p>General Competence (Knowledge): Demonstrate knowledge of various statistic distributions, their significances in physics, and their properties. Application of Statistical Physics on simple systems.</p> <p>Specific Competence:</p> <ol style="list-style-type: none"> 1. The Ability to apply probability and distribution functions to solve basic and simple/straightforward problems 2. The Ability to identify and/or formulate each of the statistical distributions 3. The Ability to apply the statistical distributions to determine the thermodynamics properties of the system
Contents:	Probability and distribution functions, Statistical Physics: energy levels, energy states, macro states, micro states, Maxwell-Boltzmann statistics: thermodynamics probability, distribution function, partition function, entropy, Gibb's paradox, semi-classical perfect gas: entropy, Helmholtz function; Bose-Einstein statistics: thermodynamics probability, distribution function; Fermi-Dirac statistics: thermodynamics probability, distribution function. Application of Statistical physics on simple systems
Soft Skill Attribute:	Effort and logic
Study/Exam Achievements:	<p>Students are considered to be competent and passed if at least get 55% of maximum mark of the exams, homework, quizzes.</p> <p>Final score is calculated as follow: 20% Homework + 10% Quizzes + 35% midterm exam + 35% final exam.</p> <p>Final index is defined as follow:</p> <p>A : 75 - 100 AB : 70 - 74.99 B : 65 - 69.99 BC : 60 - 64.99</p>

	C : 55 - 59.99 D : 40 - 54.99 E : 0 - 39.99
Learning Methods:	Lectures & discussion
Form of Media:	Slides and LCD projectors, whiteboards
Literature(s):	<ol style="list-style-type: none"> 1. Sears, F. W. and Salinger. 1986. <i>Thermodynamics, Kinetic Theory, and Statistical Thermodynamics</i>, Addison Wesley. 2. Guénault, T. 1995. <i>Statistical Physics</i>, 2nd Chapman & Hall. 3. Pointon, 1967. <i>An introduction to Statistical Physics for Students</i>, Longman.
Notes:	*Total ECTS = {(total hours workload × 50 min) / 25 hours Each ECTS is equals with 25 hours.