

Module Handbook

Module Name:	Basic Physics I
Module Level:	Bachelor
Abbreviation, if applicable:	FID103
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/term:	1st / First Year
Module coordinator(s):	Drs. Arif Wibowo, M.Si
Lecturer(s):	Drs. R. Arif Wibowo, M.Si.; Prof. Dr. Suhariningsih; Dr. Moh. Yasin, M.Si.; Dr. Suryani D Astuti, M.Si.; A H Zaidan, S.Si., M.Si., Ph.D.; Drs. Adri Supardi, M.S.; Drs. Pujiyanto, M.S.; Drs. Siswanto, M.Si; Drs. Bambang, M.Si.; Suprijanto, M.Si.; Drs. Djoni Izak R., M.Si.; Supadi. S.Si., M.Si.; Imam S. S.Si., M.Si.; Jan Ady. S.Si., M.Si.; Samian. S.Si., M.Si.; and Dyah H., S.Si., M.Si
Language:	Indonesian Language
Classification within the curriculum	Compulsory Course / Elective Studies
Teaching format / class hours per week during semester:	2 hours lecturers (50 min per hours)
Workload:	2 hours lectures, 2 hours structured activity , 2 hours individual activity, 13 weeks per semester, total 78 hours per semester ~ 2.6 ECTS
Credit Points:	2
Requirements:	-
Learning goals/competencies:	<p>General Competence (Knowledge): To understand the concept of vectors and basic concepts and principles in mechanics, fluid, elasticity and oscillatory, sound waves, and thermodynamics.</p> <p>Specific Competence:</p> <ol style="list-style-type: none"> 1. To have an ability to apply the concept of vectors and Newton's laws for a single particle and for a system of particles in 1, 2, and 3 dimensions. 2. To understand and able to apply the concept of work-energy for solving simple problems in mechanics. 3. To have an ability to formulate, solve and analyze problems of statics and dynamics of rigid body systems. 4. To understand and have an ability to solve problems in statics and dynamics of fluids. 5. To understand and have an ability to solve problems in sound waves. 6. To understand and have an ability to solve problems in thermodynamics.
Content:	Introduction of Physics, Measurement and Unit system, Vectors, Kinematics of Point Objects, Dynamics of Point Objects, Dynamics of Point Objects System, Rotational motion (angular momentum, rigid body rotation) Statics and dynamics of fluid, Elasticity and Oscillations, sound waves, and thermodynamics (Temperature, Kinetic theory of gases, Heat and Work, Laws of thermodynamics, Efficiency, and Carnot cycle).

Soft skill	Discipline and effort
Study/exam achievements:	<p>Students are considered to be competent and pass if at least get 55</p> <p>The final value is calculated as follows: 35% Middle examination (UTS) , 35% Final examination (UAS), 20% assignment, 10% <i>Softskill</i></p> <p>Final index is defined as follows : A : $100 > NA \geq 75$ AB: $74,9 > NA \geq 70$ B : $69,9 > NA \geq 65$ BC : $64,9 > NA \geq 60$ C : $59,9 > NA \geq 55$ D : $54,9 > NA \geq 40$ E : $39,9 \geq NA$</p>
Learning Methods	Lectures, assignment
Forms of Media:	LCD projectors, whiteboard, slides
Literature:	<ol style="list-style-type: none"> 1. Alonso and Finn, <i>Fundamental University Physics, Vol. 1</i>, Addison Wesley, 1992, 2. Tipler, P.A., Mosca G. Physics for scientists and engineers (5ed., extended version) 3. Halliday, D., Resnick, R., and Walker, J., Principle of Physics, 9th edition (extended), John Wiley & Sons, 2011 4. Jewet, J.W. and Serway, R. A., 2006, <i>Serway's Principles of Physics, A Calculus Based Text</i>, 4th Edition, Thomson & Brooks/Cole, Australia
Notes:	<p>*Total ECTS = {(total hours workload x 50 min) / 60 min } / 25 hours</p> <p>Each ECTS is equals with 25 hours</p>