

MODULE HANDBOOK

Module Name:	Mechanics
Module Level:	Undergraduate
Abbreviation, if applicable:	FIT203
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	4 th / Second Year
Module Coordinator:	Drs. Pujiyanto, M.Si
Lecturer(s):	Drs. Pujiyanto, M.Si.; Samian, S.Si., M.Si.; Drs. R. Arif Wibowo, M.Si. and A. H. Zaidan, M.Si., Ph.D.
Language:	Bahasa Indonesia
Classification within the Curriculum:	Compulsory Course / Elective Course
Teaching format / class hours per week during semester:	4 hours of lectures (50 min / hour)
Workload:	4 hours of lectures, 4 hours of structural activities, 4 hours of individual study, 13 weeks per semester, and total of 156 hours per semester ~ 5.2 ECTS*
Credit Points:	4
Requirement(s):	(FID 101) Basic Physics I, (FID 104) Basic Physics II, (FID 107) Basic Physics III, (MAA 103) Calculus II and (FIT 201) Mathematical Physics I.
Learning Goals/Competencies:	<p>General Competence (Knowledge) : Students are able to describe mechanics interaction on single particle and particle system in inertia and non inertia framework mathematically with Newton formulation, and also understand the simple physics system using Lagrange and Hamilton formulations.</p> <p>Specific Competence:</p> <ol style="list-style-type: none"> 1. The ability to solve Newton mechanics standard problems such as particle dynamics and oscillating system. 2. The ability to analyze particle movement using Newton formulation such as central force and coupled force. 3. The ability to solve Newton mechanics problems on non inertia framework. 4. The ability to apply and solve simple physics problems using Lagrange formulation and Hamiltonian equations.
Contents:	Introduction to Newtonian Mechanics, Rectilinear Motion of a Particle, Harmonic Oscillation, General Motion of a Particle in Three Dimensions, Non inertial Reference Systems, Gravitation and Central Forces, Dynamics of Systems of Particles, Mechanics of Rigid Bodies and motion in three dimensions, Lagrangian Mechanics, and Dynamics of Oscillating
Soft Skill Attribute:	Effort and ethic
Study/Exam Achievements:	Students are considered competent and eligible to pass the course upon obtaining at least 55 of maximum mark for the midterm test, final exam, quizzes and homework. Final score is calculated as follow: 30% Midterm Test + 30% Final Exam + 15 % Quizzes + 25% Structure Activity (homework)

	<p>Final grade is defined as follow:</p> <p>A : 75 - 100</p> <p>AB : 70 - 74.99</p> <p>B : 65 - 69.99</p> <p>BC : 60 - 64.99</p> <p>C : 55 - 59.99</p> <p>D : 40 - 54.99</p> <p>E : 0 - 39.99</p>
Learning Methods:	Lecture, assessments and group discussion
Form of Media:	Powerpoint slides, LCD projectors and whiteboards
Literature(s):	<ol style="list-style-type: none"> 1. Fowles, G. R., Cassiday, G.L., <i>Analytical Mechanics</i>, Harcourt College Publishing, 1999 2. Arya, A. P., <i>An Introduction to Classical Mechanics</i>, PrenticeHall, 1990. 3. Symon, K. R., <i>Mechanics</i>, Addison Wesley, 1980.
Notes:	<p>*Total ECTS = {(total hours workload × 50 min) / 25 hours</p> <p>Each ECTS is equals with 25 hours.</p>