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Undergraduate Programme in Physics

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MODULE HANDBOOK

Module Name	Mechanic 1
Module level, if applicable	Bachelor
Code, if applicable	FIS414009
Subtitle, if applicable	-
Courses, if applicable	Mechanic 1
Semester(s) in which the module is taught	2nd (second)
Person responsible for the module	Andi, M.Sc.
Lecturer(s)	Andi, M.Sc
Language	Indonesia
Relation to curriculum	Compulsory course in the first year (2nd 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 regulation	Minimum attendance 75% All assignments submitted Attendance on time
Recommended prerequisites	No prerequisites stated on
Module objectives/intended learning outcomes	After completing this course, the students: CO 1. Apply the concepts of vector analysis to various cases of particle motion kinematics. CO 2. Explain Newton's Laws of Motion and their applications in everyday life. CO 3. Analyze the motion of particles in two-dimensional and three-dimensional space under the influence of conservative forces. CO 4. Explain the non-inertial frame of reference and its application. CO 5. Analyzing oscillatory motion CO 6. Analyze the regularity of planetary motion based on Newton's Law of Gravity and Kepler's Laws.
Content	1. Fundamental Concepts: Vectors 2. Newtonian Mechanics: Rectilinear Motion of a Particle 3. Oscillations 4. General Motion of a Particle in Three Dimensions 5. Noninertial Reference Systems 6. Gravitation and Central Forces

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<table>
<tr><td>Study and examination requirements and forms of examination</td><td>The final mark will be weighted as follows:
<table>
<tr><th>NO</th><th>Assessment methods (components, activities)</th><th>Weight (percentage)</th></tr>
<tr><td>1</td><td>Final Examination</td><td>40%</td></tr>
<tr><td>2</td><td>Mid-Term Examination</td><td>30%</td></tr>
<tr><td>3</td><td>Class Activities : Quiz, Homework, etc.</td><td>30%</td></tr>
</table>
The final assessment is expressed in the form of a letter value converted from a number value with the following categories:
<table>
<tr><th>NO</th><th>Number Value</th><th>Letter Value</th><th>NO</th><th>Number Value</th><th>Letter Value</th></tr>
<tr><td>1</td><td>≥ 95</td><td>A</td><td>7</td><td>65-69.99</td><td>B/C</td></tr>
<tr><td>2</td><td>90-94.99</td><td>A-</td><td>8</td><td>60-64.99</td><td>C+</td></tr>
<tr><td>3</td><td>85-89.99</td><td>A/B</td><td>9</td><td>55-59.99</td><td>C</td></tr>
<tr><td>4</td><td>80-84.99</td><td>B+</td><td>10</td><td>50-54.99</td><td>C-</td></tr>
<tr><td>5</td><td>75-79.99</td><td>B</td><td>11</td><td>55-34.99</td><td>D</td></tr>
<tr><td>6</td><td>70-74.99</td><td>B-</td><td>12</td><td><35</td><td>E</td></tr>
</table></td></tr>
<tr><td>Media employed</td><td>White-board, Lcd Projector, e-learning (https://daring.uin-suka.ac.id/)</td></tr>
<tr><td>Reading list</td><td>1. Analytical Mechanics, G.L.Fowles and G.L.Cassiday, 7th edition, Thomson Brooks/Cole
2. Classical Mechanics, H.Goldstein, C.Poole, and J.Safko, 3rd edition, Addison Wesley
3. Introduction to Classical Mechanics, Atam P.Arya, Allyn and Bacon
4. An Introduction To Mechanics, D.Kleppner and R.J.Kolenkow, McGraw-Hill</td></tr>
</table>

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		√		√					
CO 5		√		√					
CO 6		√		√					