

Course Code	TKIE161202											
Course Name	Engineering Physics											
Course Instructors	Priyatmadi; F Danang Wijaya; Oyas Wahyunugroho; Bambang Sugiyantoro; Yusuf Susilo Wijoyo;											
Course Type	Required											
Course Classification	Basic Science & Math											
Credit / Contact Hour per Week	4 / 200 minutes per Week											
Course Description	Engineering Physics Course learns concepts and theories related to Unit System, Kinematics, Statics, Dynamics, Mechanics, Heat, Fluid Mechanics, Waves, Light and Optical Systems, Light Particle Properties											
Prerequisites Courses	Physics for Electrical Engineering (TKIE161102)											
Covered Student Outcome	Fundamental and Engineering Knowledge (a) Development of Engineering Solution (b)											
Learning Outcome	<ol style="list-style-type: none"> 1. Students are able to understand and know the aspects related to kinematics, mechanics and able to apply Newton's laws in dynamic static and spinning motion. 2. Students are able to understand and know the characteristics of heat, thermodynamic laws and thermal properties of objects. 3. Students are able to understand and analyze the mechanics and flow of non viscous and viscous fluids, as well as cohesive forces in the liquid 4. Students are able to understand the wave characteristics, their properties and energies, and finally their application to sound waves. 5. Students are able to understand and analyze light as a wave and its application to the optical system. 6. Students are able to understand and analyze light as particle and quantum mechanics principle with their application. 											
Topic	<ol style="list-style-type: none"> 1. Unit system 2. Law of movement - Linear movement, Movement on plane, Movement in space, Law of motion 3. Statics Dynamics and (Newton's Law), Circular motion 4. Work, Energy, and Power 5. Linear Momentum and Angular Momentum 6. Wave and Sound 7. Heat and temperature 8. Thermodynamics 9. Fluid 10. Light and Fiber Optic 11. Special Relativity 12. Quantum Mechanics 13. Nuclear Physics 											
Direct Assessment	<table border="1"> <thead> <tr> <th>Direct Assessment Plan</th> <th>Measured Learning Outcome</th> </tr> </thead> <tbody> <tr> <td>Group Task</td> <td>LO2, LO4</td> </tr> <tr> <td>Quiz</td> <td>LO3</td> </tr> <tr> <td>Mid Exam</td> <td>LO1, LO4</td> </tr> <tr> <td>Final Exam</td> <td>LO5, LO6</td> </tr> </tbody> </table>		Direct Assessment Plan	Measured Learning Outcome	Group Task	LO2, LO4	Quiz	LO3	Mid Exam	LO1, LO4	Final Exam	LO5, LO6
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Final Exam	LO5, LO6											
Indirect Assessment	Questionnaire (EDOM)											
References	<p>[1] Sternheim MM., Kane JW., 1991, General Physics, John Wiley & Sons. New York</p> <p>[2] Ohanian, 1994, Principles of Physics, W. W. Norton & Company, New York</p> <p>[3] Young & Freedman, 2000, University Physics, Addison-Wesley Publishing Co.</p>											