Course Code	TKIE161102
Course Name	Physics for Electrical Engineering (Course + Tutorial)
Course Instructors	F. Danang Wijaya; Eka Firmansyah; Oyah Wahyunggoro; Yusuf Susilo Wijaya; Bambang Sugiyantoro; Suharyanto
Course Type	Required
Course Classification	Basic Science & Math
Credit / Contact Hour per Week	4 / 200 minutes per Week
Course Description	This course is a physic freshman course with emphasis in the fundamental concepts, laws and theories of electromagnetism. The explanation of these concepts is tailored to be relevant in the context of electrical engineering and information technology.
Prerequisites Courses	-
Covered Student Outcome	**Fundamental Engineering Knowledge (a)**

Learning Outcome	1. Students are able to understand and explain the laws of physics related to electricity and magnetism. 2. Students are able to translate natural phenomena related to electricity and magnetism into the principles of physics. 3. Students are able to analyze and solve simple problems in the field of electrical and magnetic using the method of integral-differential calculus 4. Students are able to analyze and interpret data or graphs related to electricity and magnetism and draw conclusions related to the laws of electrical and magnetic physics.
Topic	1. Introduction and electrostatics 2. Electric Field 3. Gauss Law 4. Electric potential 5. Capacitance and dielectric 6. Current and resistance 7. Electric circuit 8. Magnetic Field 9. Magnetic field sources 10. Electromagnetic induction 11. Inductance 12. Electric material
Direct Asessment	

Direct Asessment Plan	**Measured Learning Outcome**
Mid Exam	LO1, LO2
Final Exam	LO3, LO4
Quiz	LO1, LO2

Indirect Assesment	Questionnaire and direct communication
References	[1] Halliday, D., Resnick R., 2013, Physics 9th Edition, John Wiley & Sons, Inc, [2] Ohanian, 1994, *Principles of Physics,* W. W. Norton & Company, New York [3] Young & Freedman, 2000, *Universitry Physics,* Addison-Wesley Publishing Co.