MINISTRY OF EDUCATION AND CULTURE
UNIVERSITAS NEGERI SURABAYA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF NATURAL SCIENCES
Ketintang Campus, Jl. Ketintang C12 Building, Surabaya 60231
Phone (031)18296427
Website http://pendidikan-sains.fmipa.unesa.ac.id

Module Name:	*Kelistrikan dan Kemagnetan* Electricity and Magnetism
Module Level:	Bachelor degree/Undergraduate Programme
Course Code:	8420103068
Abbreviation, if applicable:	KK
Courses included in the module, if applicable:	Not applicable
Semester/term	5 / fourth year (senior)
Module coordinator(s):	Mohammad Budiyanto
Lecturer(s):	An Nuril Maulida F Eny Susiyawati M. Arif Mahdiannur
Language:	*Bahasa Indonesia* (Indonesian Language)
Classification within the curriculum:	Compulsory / ~~Elective~~
Teaching format/class hours per week during the semester:	3 contact hours of lectures (Indonesia credit semester or *sks**)
Workload:	3 x 50 minutes lectures, 3 x 60 minutes structured activity, 3 x 60 minutes individual activity, 14 weeks per semester, 119 total hours per semester ~ 4.77 ECTS**
Credit point:	3 *sks* (4.77 ECTS)
Requirements:	General Physic
Learning goals/competencies:	**Course Learning Outcomes (CLOs):** After taking this course, students will be able to: 1. Tracing data and information about electricity and magnetism and its use in everyday life 2. Analyzing the symptoms of static electricity in objects and living things and their application by utilizing science and technology 3. Analyzing the symptoms of dynamic electricity in objects and living things and their application by utilizing science and technology 4. Analyzing the symptoms of magnetism, magnetic induction, and electromagnetic induction in living things and living things and their application by utilizing science and technology 5. Analyzing resistance, inductors and capacitors in alternating current circuits
Content:	Electric and magnetic properties, electric charge, Coulomb's Law, electric field strength, Gauss's law, Electric Potential, Capacitance capacitors, symptoms of static electricity in objects and living things, direct electrical circuits, Kirchoff's Law, dynamic electrical symptoms in objects and living things, magnetic and electromagnetic induction, symptoms of magnetism in living things and being, symptoms of

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<tr><td></td><td>magnetic and electromagnetic induction in living things and being, RC and RL circuits, Resistance and capacitance, and current and voltage in AC circuits</td></tr>
<tr><td>Attribute Soft skill:</td><td>Discipline, collaboration, responsibility, and argumentation in the natural classroom setting</td></tr>
<tr><td>Study/exam achievements:</td><td>Students are considered to be competent and pass if at least get 40% of the maximum final grade. The final grade (NA) is calculated based on the following weight:

<table><tr><th>Assessment Components</th><th>Percentage Contribution</th></tr><tr><td>Participation</td><td>20%</td></tr><tr><td>Assignment</td><td>30%</td></tr><tr><td>Mid-semester test</td><td>20%</td></tr><tr><td>Final semester test</td><td>30%</td></tr><tr><td>Total</td><td>100%</td></tr></table></td></tr>
<tr><td>Learning Methods</td><td>Student-centered approach, deductive learning, lecturing, discussion, and presentation (structured activities), and flip learning</td></tr>
<tr><td>Form of Media:</td><td>LCD, PowerPoint, hand out, simulation, e-learning Vinesa, and whiteboard</td></tr>
<tr><td>Literature (primary references):</td><td>1. Halliday & Resnick. 2013. Fundamental of Physics, 10th Edition. John Wiley & Sons Inc.
2. Giancoli, Douglas. 2016. Physics: Principles with Applications II Global Edition. California: Addison-Wesley.
3. Young, Hugh D., Freedman, Roger A., Ford, Albert Lewis. 2016. Sears and Zemansky's University Physics: With Modern Physics. Pearson.</td></tr>
<tr><td rowspan="2">Notes:</td><td>*1 sks in learning process = three contact hours that consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes) according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018.</td></tr>
<tr><td>**1 sks = 1,59 ECTS</td></tr>
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