

Module Descriptions

Module designation (kode MK)	8420304294
Semester(s) in which the module is taught	1
Person responsible for the module	Tim Dosen
Language	Indonesian
Relation to curriculum	Compulsory /elective/ specialisation
Teaching methods	Lecture, Lesson, Discussion, case study lab works, project, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 136 work hours per-semester Contact hours: a) Lecture, exercise: 26.7 work hours per-semester , b) Laboratory session: 45.3 work hours per-semester Private study including examination preparation: 64 work hours per-semester
Credit points	4.77 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	Key question: what learning outcomes should students attain in the module? E.g. in terms of: - Attitude: - - Competences: - - Knowledge: a) Masters and demonstrates the principles of classical and modern physics theory. b) Formulates physical symptoms and problems based on the results of observations and experiments, and model them using mathematics and computing for appropriate decision making in both familiar and new problems. - Skills: a) Develops logical, critical, systematic and creative thinking in carrying out specific work in the field of expertise and in accordance with the work competency standards in the relevant field.

Content	<i>This course examines quantities, units, significant figures, and vectors, particle kinematics: 1D and 2D motion; particle dynamics; work and energy: work and energy conservation and their applications; conservative forces; impulse and momentum; rigid body equilibrium; static and dynamic fluids; vibrations and waves; thermometry; temperature and heat; the kinetic theory of ideal gases; and the laws of thermodynamics through observation of physical phenomena with simple mathematical analysis by applying case studies and learning experiences in laboratory activities.</i>
Examination forms	Essay
Study and examination requirements	Requirements for successfully passing the module: a) Minimum attendance of 75% b) Minimum score of 55 out of 100
Reading list	a) Nowikow, I. and Heimbecker, B. 2017. <i>Physics: concepts and connections: Book 1.</i> Toronto, Canada: Irwin Publ., pp. 1-720. b) Heimbecker, B., Nowikow, I., Howes, C. T., Mantha, J., Smith, B. P., van Bommel, H. M. 2002. <i>Physics: concepts and connections: Book 2.</i> Toronto, Canada: Irwin Publ., pp. 1-816. c) Serway, R. A. 2018. <i>College Physics.</i> Belmont, US: ThomsonLearning Publ., pp. 1-1058. d) Halliday, R. Resnick, J. Walker. <i>Fundamental of Physics</i>, 10th Edition. Wiley: 2014.