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	*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.*
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. Physics: concepts and connections: Book 1. Toronto, Canada: Irwin Publ., pp. 1-720.* *b) Heimbecker, B., Nowikow, I., Howes, C. T., Mantha, J., Smith, B. P., van Bemmel, H. M. 2002. Physics: concepts and connections: Book 2. Toronto, Canada: Irwin Publ., pp. 1-816.* *c) Serway, R. A. 2018. College Physics. Belmont, US: ThomsonLearning Publ., pp. 1-1058.* *d) Halliday, R. Resnick, J. Walker. Fundamental of Physiscs, 10th Edition. Wiley: 2014.*