MODULE HANDBOOK

Course:	**Biophysics**
Module Level:	Undergraduate
Code:	FIB101
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	3th / Second Year
Module Coordinator(s):	Prof.Dr.Ir. Suhariningsih
Lecturer(s):	Prof.Dr.Ir. Suhariningsih and Dr. Suryani Dyah astuti, M.Si
Language:	Bahasa Indonesia
Classification within the Curriculum	Compulsory Course / ~~Elective Course~~
Teaching format / class hours per week during semester:	3 hours of lectures (50 min / hour)
Workload:	3 hours of lectures, 3 hours of structural activities, 3 hours of individual study, 13 weeks per semester, and total of 117 hours per semester ~ 3.9 ECTS*
Credit Points:	3
Requirement(s):	(FID 101) Basic Physics I, (FID 104) Basic Physics II and (FID 107) Basic Physics III
Learning Goals / Competencies:	**General Competence (Knowledge):** Capable of linking the biophysics processes in living organisms with the basic theory of Physics **Specific Competence :** 1. Able to describe and explain Physics in the human body 2. Able to describe and explain muscle contraction in the physical changes of the striated muscle 3. Able to describe the structure and function of ear in the hearing process 4. Able to describe the structure and function of eye in the vision process 5. Able to describe and explain impuls conduction in nervous system to analyse passive/active transport 6. Able to describe the structure and function of cardio in the blood circulation system 7. Able to describe the structure and function of respiratory system 8. Able to describe ultrasonic radiation and electromagnetic radiation as well as their effects on biological system 9. Able to describe and explain radioactive
Contents:	The course is consist of general topics including; **Biomechanics:** center of mass, torsi, physical change in the muscle, fluid; **Biocalor:** heat transfer; **Bioacoustic:** ears and hearing, ultra sonic radiation; **Biooptic:** eyes and vision; **Bioelectric:** impuls conduction in nervous system, the physical aspect of the lungs and respiratory, cardiovascular, electromagnetic radiation, radioactive, interaction of radiation and matter, energy transfer process.
Soft Skill Attribute:	Effort and ethic

Study/Exam Achievements:	Students are considered competent and eligible to pass the course upon obtaining at least 40 of maximum score for the exams (midterm exam and final exam), structured activity (group discussion). Final score is calculated as follow: 15% quiz (essay test) + 15% structure activity (home work) + 35% midterm test (essay test) + 35% final exam (essay test) Final grade is defined as follow: A : 75 – 100 AB : 70 - 74.99 B : 65 - 69.99 BC : 60 - 64.99 C : 55 - 59.99 D : 40 - 54.99 E : 0 - 39.99
Forms of Media:	Power point, whiteboards
Learning Methods	Lecture, assessments and group discussion
Literature(s):	1. Abdulbasir, R. 1988. *Ilmu Biofisika*. Airlangga University Press, Surabaya. 2. Ackerman, E. Ellis, L. William, L. 1979. *Biophysical Science*. Prentice Hall Inc. 3. Davidovits, P. 2001. *Physics in Biology and Medicine*. A Harcourt and Technology Company, USA. 4. Hobbi, R.K. 1978. *Intermediate Physics for Medicine and Biology*. John Wiley and Sons. 5. Cameron, J.R. and Skrofonick, J. G. 1978. *Medical Physics*. John Wiley and Son.
Notes:	*Total ECTS = {(total hours workload × 50 min) / 25 hours Each ECTS is equals with 25 hours.