

Module Handbook

Module Name:	Electrophysiology and Bioenergetics
Module Level:	Bachelor
Abbreviation, if applicable:	FI3252
Sub-heading, if applicable:	
Courses included in the module, if applicable:	
Semester/term:	6/ Third year
Module coordinator(s):	
Lecturer(s):	
Language:	Bahasa Indonesia
Classification within the curriculum:	General Studies / Major Subject / Elective Studies
Teaching format / class hours per week during the semester:	2 hours lectures
Workload:	2 hours lectures, 2 hours individual study
Credit Points:	2
Requirements:	FI2151 Biophysics
Learning goals/competencies:	<p>Knowledge</p> <ol style="list-style-type: none"> 1. Ability to describe biological cell model for studying substance transport in the cell 2. Ability to identify the characteristics of light as biosystem energy source 3. Ability to describe the photosynthesis proses as the mechanism to convert light energy to become energy available for life in biosystems <p>Skill</p> <ol style="list-style-type: none"> 1. Ability to calculate transport parameters of water as main solvent in biological system 2. Ability to calcuate parameters of solutes transport between compartments in biological systems 3. Ability to calculate parameters involed in chloroplast and mitochondria bioenergetics in biosystems <p>Competence</p> <ol style="list-style-type: none"> 1. Ability to apply electrophysiology and bioenergetics in understanding various mechanism exist in other biological systems, such as animals, human body 2. Ability to keep abreast of the state of the art in electrophysiology and bioenergetics in order to discover the application
Content:	The topics discussed in this subject includes biological cell model, transport of water as main solvent in biological systems, transport of solutes including ions in biological systems, light as main energy source in biological systems, photosynthesis process, chloroplast and mitochondria bioenergetics
Study/exam achievements:	Students are considered to be competent and pass if at least get 50% of maximum mark of the mid-term test, final examination, quizzes and home work.
Forms of Media:	Slides and LCD projectors, blackboards, lab.
Literature:	<ol style="list-style-type: none"> 1. P.S. Nobel, Introduction to Biophysical Plant Physiology, Freeman 1985 2. Ackerman et al., Biophysical Science, Prentice-Hall, 1979 3. R.K. Hobbie, Intermediate Physics for Medicine and Biology, John Wiley and Sons, 1978 4. Coster, Themodynamics of Life, NSW University Press., 1981
Notes	

