

Module Handbook

Modul Name	Biosystematics (Practical Work)
Modul Level	Bachelor
Abbreviation, if applicable:	BIC 201
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester	Even (4 th Semester)
Module Coordinator	Prof. Bambang Irawan
Lectures	Prof. Bambang Irawan Hamidah Rosmanida Tri Nur Hariyati Thin Soedarti M. Hilman Fuadhil Amin Intan Ayu Pratiwi
Language	Bahasa Indonesia
Classification within the curriculum:	Compulsory Course / Elective Studies
Teaching format/ class hours per week during semester	300 minutes/ week
Workload per semester	100 min lecture + 100 min structural assignment + 100 min self-assignment x 13 weeks; total 3900 min = 65 hours 65/25 = 2.6 ECTS
Credit point	1
Requirements	Vertebrate Comparative Anatomy (Practical Work) and Plant Taxonomy (Practical Work)
Learning goals/competencies	<p>General Competence (Skill)</p> <p>This practical work is designed in order for students to be able to explain the three-main school of taxonomy (evolutionary, phonetics, and cladistics), construct a phonogram and cladogram base on morphological characteristics, analyzing the phylogenetic relationship, and writing a good taxonomical description (analytic, diagnostic and deferential)</p> <p>Specific Competence</p> <ol style="list-style-type: none"> 1. Students are able to understand biosystematics 2. Students are able to describe plant correctly 3. Students are able to describe Protista and thallophytes group correctly 4. Students are able to describe tracheophyte group correctly 5. Students are able to understand how to make phylogeny tree 6. Students are able to make plant phylogeny correctly 7. Students are able to describe and characterize types of animals correctly 8. Students are able to understand the body structure of radiata group correctly 9. Students are able to make the cladistics analysis of anthropoids group correctly 10. Students are able to differentiate members of craniate group 11. Students are able to make animal phylogeny tree correctly.

Content	<p>a. Exploring taxonomical characteristic in unicellular, paracellular, and multicellular organisms both of plant and animal. Writing taxonomical description and construct key determination for given organisms. Determining genetic differentiation among five animal taxa and five plant taxa. Construct the phylogenetic tree base on genetic data</p> <p>b. Plant Understanding the morphological character of Bryophyta and Tracheophyta. Writing down its existing classification. Writing description of each given taxa and construct determination key for given plants. Identify pleiomorphic and apomorphic characters and construct the phonogram and cladogram.</p> <p>c. Animal Differentiate among acoelomata, pseudocoelomata, schizocoelomata, and enterocoelomata base on the structures and embryogenic, and decide its status (pleiomorphic and apomorphic). Comparing the structures of fishes and the four classis of tetrapod and identify pleiomorphic and apomorphic characters and construct the phonogram and cladogram.</p>
Soft skill Attribute	Discipline and Team Work
Study/ exam achievements	<p>Students are considered to be competent and pass if at least get 40% of maximum. Final score (NA) is calculated as follow: Paper project (30%) + Quiz (20%) + final exam (40%) + soft skill (10%)</p> <p>Final index is defined as follow:</p> <p>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</p>
Form of media	Laboratory equipment
Learning Method	Practical Work
Literature	<p>a. Collins, J.T. (Eds). 1984. <i>Principles and Methods of Phylogenetic Systematics: cladistics workbook</i>. Special Competence Publication No. 12. University of Kansas, Museum of Natural History..</p> <p>b. De Vogel, E.F. (Eds.). <i>Manual of Herbarium Taxonomy, theory and practice</i>. UNESCO</p> <p>c. Ross, H.H.1973. <i>Biological Systematics</i>. Addison Wesley Publishing Company, Inc. Massachysetts.</p> <p>d. Skelton, P. 1993. <i>Evolution; a biological and palaeontological approach</i>. Prentice Hall, London.</p>
Note	Requirement of animal taxonomy (Practical Work)