Modern Taxonomy

Undergraduate Programme In Biology Education　　　　　　　　　**Module Handbook**

Module Name	Modern Taxonomy (Taksonomi Modern)
Module level	Undergraduate Programme
Course Code	02013152023
Abbreviation, if applicable	-
Courses included in the module, if applicable	-
Semester/Term	5th
Module coordinator (s)	Dr. Muzzazinah., M.Si
Lecturer (s)	Prof Drs Suranto, M.Sc, Ph.D Dr. Muzzazinah., M.Si
Language	Bahasa Indonesia (Indonesian Language)
Classification within the Curriculum	Compulsory/~~Elective~~
Teaching format/class hours per week during the Semester	**Direct instruction /flipped classroom** (blended learning)/(1.5 x 50 x 16 / 60) **20 hours**/week/semester; **Project-based activities**/ (8 x 170 / 60) **22.67** hours/week/semester; **Tasks assignment/structured tasks**/ (10 x 170 /60) **28.3** hours/week/semester **Self Study** (4 x 60 x 1.5) 6 hours/week/semester
Workload	<table><tr><th>Type</th><th>CSU</th><th>Face to Face</th><th>Structured Activities</th><th>Self-study</th></tr><tr><td>T</td><td>1.5</td><td>(1,5 sks x 50 x 16)/60 = 20 h (0.779 ECTS)</td><td>10 x 170 / 60 = 28.3 h (1.103 ECTS)</td><td>4 x 60 x 1.5 sks / 60 = 6 h (0.233 ECTS)</td></tr><tr><td>P</td><td>0.5</td><td colspan="3">16 x 170 x 0.5 / 60 = 22.667 h (0.883 ECTS)</td></tr><tr><td>Total 3</td><td></td><td colspan="3">76.967 h (3 ECTS)</td></tr></table>
Credit Point	2 CSU (3 ECTS)
Requirements	Has taken courses in General Biology, Plant Anatomy and Morphology, Diversity and Classification of Invertebrates, Diversity and Classification of Phanerogamae, Diversity and

	Classification of Vertebrate
Learning goals/competencies	PLO 2 They are able to apply the basic advance knowledge in biology to solve the problem in biology. PLO 5 They are able to select and analyse the proper technology and information or data in accomplishing tasks. CLO 1 Explaining the history and development of modern taxonomy CLO 2 Explaining the basis for the formation of a classification system based on phylogenetics CLO 3 Designing plant diversity exploration research CLO 4 Conducting analysis of plant kinship relationships

CLO/PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CLO1		*								
CLO2		*								
CLO3					*					
CLO4					*					

Content:	Modern Taxonomy is a course which includes the following studies: 1. Provides theoretical knowledge about taxonomic development 2. The basis for applying phylogenetic classifications in plants (APG I, APG II, APG III, and APG IV) 3. How to determine traits and character 4. Knowledge of taxonomic data collection 5. Determination of specific traits in plant taxa 6. Analyzing data from exploration and experimentation with taxonomy software 7. Planning exploration and experimentation on diversity and communicating orally and in writing with scientific principles.
	The Modern Taxonomy practicum examines: 1. Arrange characters and state characters every OUT. 2. Coding each category on the character. 3. Analysis Phylogenetic

Attribute Soft skill	1. Have good communication skills 2. Problem solving
Study/exam achievements:	Students are considered to complete the course and pass if they obtain at least 60% of maximum final grade. The final grade (FS) is calculated based on the following ratio: <table><tr><td>Aspect</td><td>(%)</td></tr><tr><td>Task/quiz/presentation / laboratory activity</td><td>30</td></tr><tr><td>Participation</td><td>10</td></tr><tr><td>Mid-Term Test/ Team Based Project</td><td>30</td></tr><tr><td>Final Exam</td><td>30</td></tr><tr><td>Final Score</td><td>100</td></tr></table>
Form of Media	Power point slide, plant specimen, video, film
Literature (primary references)	1. Simpson MG. 2010. Plant Systematics Second Edition. Amsterdam: Academic Press. 2. Ratnam SV. 2009. Plant Biosystematics. New Delhi: MD Publication. 3. Diniz-filho and tôrres, N M. 2004. Phylogenetic autocorrelation and evolutionary interPretation of the higher-taxon aPProach for biodiversity analyses. Departamento de biologia, Mcas/ProPe, universidade católica de goiás, goiânia, go, Brazil 4. Hilde N,. Kurt W, Byorn R. 2014. DNA Fingerprinting in botany: past, present, future. Investigation Genetic 5(1). 5. Yi GS, Ying L, Hong,HM, Yana F, Bin-Jie,GS,Hamed Y,Sebastian B, Gregory K. 2020. Article Phylogeny, Taxonomy, and Biogeography of Pterocarya (Juglandaceae). Plant 9:1524. 6. Winzel John. 2002. Phylogenetic Analysis: The Basic Method. https://www.researchgate.net/publication/279399164. 7. Hong Qian and Yi Jin. 2016. an updated megaphylogeny of plants, a tool for generating plant phylogenies and an analysis of phylogenetic community structure. Journal of Plant Ecology 9(2). P: 233-234. https://academic.oup.com/jpe/article/9/2/233/2928108

.

Example of Final Exam

1. Explain what is meant by character and state character, give an example
2. Explain the difference between rank and taxon
3. Explain why morphological characteristics are still the main basis for classifying plants?
4. Describe the types of cytological data that can be used as a source of taxonomic evidence
5. Why can today's molecular studies be considered to provide an overview of the relationship between living things?

Assessment

Rubric For Creating Paper

Report	Aspect	Criteria				Grade
		4	**3**	**2**	**1**	
A. Content 60 %	1. Introduction	Systematic. The introduction and purpose of writing are appropriate.	Not systematic. The introduction and purpose of writing are appropriate	Systematic. The introduction and purpose of writing are not appropriate.	Not systematic. The introduction and purpose of writing are not appropriate.	
	2. Discussion	Complete, appropriate and comprehensive	Complete, unappropriate and not comprehensive	Uncomplete, unappropriate and comprehensive	Uncomplete, unappropriate and not comprehensive	
	3. Conclusion	Answer the goal, short and concise	Answer the goal, not short and concise	Can't answer the goal, short and concise	Can't answer the goal, not short and not concise	
	4. Bibliography	Alphabetical arrangement (Harvard system), last 10 years reference, 3 journals included	Alphabetical arrangement (Harvard system), references more than 10 years, included 2 journals	Not alphabetical arrangement (Harvard system), last 10 years reference, 1 journals included	Non-alphabetical arrangement (Harvard system), references more than 10 years, not included the journal	
Grade Point A (60%) = A Scor x 60%						
B.General 40 %	1. Systematic	complete and systematic	complete but not systematic	Systematic but not complete	incomplete and not systematic	
	2. Content	Detailed discussion, using communicative language,	Detailed discussion, but not communicative	Communicative but un detailed discussion	Undetailed discussion Not communicative	
	3. Collection time	According to the specified time	1 day late from the specified time	2 or 3 days late from the specified time	late > 3 days from the specified time	
Grade Point B (40%) = B Scor x 40%						
Final Grade = ((Grade A + Grade B) / 14,4) x 100						