UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF MATHEMATICS EDUCATION

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Bachelor of Education in Biology

MODULE HANDBOOK

Module name:	Laboratory work in Plant Diversity
Module level, if applicable:	Undergraduate
Code:	BIP 6107
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	Even
Module coordinator:	Dra. Budiwati, M.Si.
Lecturer(s):	Dra. Budiwati, M.Si., Dra. Ratnawati, M.Sc.
Language:	Indonesian
Classification within the curriculum:	Compulsory subject
Teaching format / class hours per week during the semester:	100 minutes lectures, 70 minutes structured activities, per week
Work load:	Total workload is 45,3 hours per semester which consists of 100 minuteslectures, 70 minutes structured activities, per weekfor 16 weeks.
Credit points:	1 SKS (2 ECTS)
Prerequisites course(s):	-
Perogram Learning Outcomes:	PLO 4. Mastering basic Biology and other relevant knowledge with mathematics and natural sciences. PLO 7. Being able to do independent laboratory work and fieldwork.
Course Outcomes	After taking this course, the students have ability to: CO1. identify, describe and classify the types of microscopic algae in freshwater habitats CO2. identify, describe and classify the types of algae that form symbiosis with other organisms CO3. identifying, describing and classifying macroscopic algae types in coastal habitats

	CO4. identify, describe and classify mosses, and recognize their habitat
	CO5. identify, describe and classify nail plants, and recognize their habitat
	CO6. identifying, describing, and classifying seed plants
	CO6. describe the structure of strobilus in Gymnosperms
	C07. describe the structure of the dicotyledonous flowers and arrange the flower formula and make the flower diagram
	C08. describe the flower structure of the monocot group, arrange the flower formula and make a flower diagram
	CO9. make a herbarium from plant
	CO10. make a flower determination
	CO11. compile a simple determination key
Content:	In this laboratory work, students identify and describe the characteristics of plant objects which include: Schizophyta, Thallophyta, Bryophyta, Pteridophyta and Spermatophyta, reviewing the nomenclature system and the use of determination keys in determining plant names, and compiling simple determination keys.
Study/examachievements:	The final mark will be weight as follow: <table><tr><th>No</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr><tr><td>1</td><td>CO1 to CO11</td><td>Observed attitudes , knolwedge, and skills</td><td>Survey, test, rubrics and manuals</td><td>100%</td></tr><tr><td colspan="4">Total</td><td>100%</td></tr></table>
Forms of media:	Real objects, model, multimedia
Reference:	A. Bell, R.P. and C.L.F.Woodcock1971. *Diversity of Green Plants.* 2nd ed. Whitstable Litho Ltd. B. Bold, H.C. and M.J. Wynne. 1985. *Introduction to the Algae: Structure and Reproduction.* Prentice-Hall Inc. United States of America. C. Davis, PH & Heywood V.H. 1995. *Principles of Angiosperm Taxonomy*. London : Oliver & Boyd. D. Gupta, J.S. 1981. *Text book of Algae.* New Delhi: Mohan Primlani & IBH Publishin,Co. E. Hsuan Keng. 1987. *Malayan Seed Plants*. Singapore : University Press Singapore. F. Lawrence, G.H.M. 1968. *Taxonomy of Vascular Plants.* New York: The Macmillan Company G. Raven, P.H., *et al*. 1992. *Biology of Plants.* New York : Worth Publishers. H. Tjitrosoepomo, G, 1989. *Taksonomi Tumbuhan*

(Spermatophyta). Yogyakarta : Gadjah Mada University Press.

I. _____, 1986. *Taksonomi Tumbuhan (Taksonomi Khusus)*. Jakarta : Bhratara Karya Aksara.

J. _____, 1993. *Taksonomi Umum (Dasar-dasar Taksonomi Tumbuhan)*. Yogyakarta : Gadjah   Mada University Press.

K. Van Steenis, C.G.G.J. 1981. *Flora untuk Indonesia*. Jakarta : Pradnya Paramita.

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
CO1				✓			✓					
CO2				✓			✓					
CO3				✓			✓					
CO4				✓			✓					
CO5				✓			✓					
CO6				✓			✓					
CO7				✓			✓					
CO8				✓			✓					
CO9				✓			✓					
CO10				✓			✓					
CO11				✓			✓					