Email: biologi.fmipa@um.ac.id
Website: http://biologi.fmipa.um.ac.id/

Module designation	Plant Structure and Development 1
Module level, if applicable	Undergraduate
Code, if applicable	NBIOUM6110
Subtitle, if applicable	-
Courses, if applicable	-
Semester(s) in which the module is taught	Even semester
Person responsible for the module	Dr.Murni Sapta Sari MSi
Lecturer	Dr.Murni Sapta Sari MSi Andik Wijayanto, S.Si, M.Si Rahmi Masita,S.Si.,M.Sc.
Language	Bahasa Indonesia
Relation to curriculum	Undergraduate degree program, compulsory, 2nd semester.
Type of teaching, contact hours	Undergraduate degree program: cooperative learning, presentation, laboratory work, 2 x 50 = 100 minutes and 1 x 170 minutes
Workload	1. Lectures: 2 x 50 = 100 minutes (1.67 hours) per week. 2. Exercises and Assignments: 2 x 60 = 120 minutes (2 hours) per week. 3. Laboratory work: 1 x 170 minutes (2.83 hours) per week. 4. Private study: 2 x 60 = 120 minutes (2 hours) per week.
Credit points	3 credit points (~5 ECTS-eq)
Requirements according to the examination regulations	A student must have attended at least 80% of the lectures to be eligible for the final examination.
Recommended prerequisites	NBIOUM6101 General Biology NBIOUM6106 Laboratory Technique
Module objectives/intended learning outcomes	Students are able to: (LO2) Master basic biological theoretical concepts in an integrated manner, logically, critically, systematically and innovatively through the science and technology approach to analyze various problems in the field of biology.
Course learning outcomes	

Content	This course covers the following main topics: ● Introduction: Terms of internal morphology and outer morphology ● Plant cell structure ● Network structure and function ● Structure and development of root, stem and leaf organs ● Leaf phylogeny ● Talus and corm plant bodies. ● Problems and coverage of studying the form, arrangement, and function of plant organs. ● The formation and development of the organs concerned. ● Terminology of vascular plant organ coverage. ● Forms of life based on the length of life, based on adaptation to the environment, and based on how to survive against less profitable machines. ● The composition of the plant body, including parts of the plant body, internal organization. ● The development of the plant body including the origin of the plant body, primary growth, secondary growth. ● Nutrient tools, including roots, stems, leaves. ● Reproductive organs including flower structure, development of flowers.
Learning activity	Week 1
	Week 2
	Week 3
	Week 4
	Week 5
	Week 6
	Week 7
	Week 8
	Week 9
	Week 10
	Week 11
	Week 12
	Week 13
	Week 14
	Week 15
	Week 16

Study and examination requirements and forms of examination	Assignment, midterm examination, final examination, Performance
Media employed	LCD, Whiteboard, Sipejar
Reading list	1. e-learning: http://e-learning.um.ac.id/course/category.php?id=34 klik Anatomi Tumbuhan Some courses may allow guest access klik Login as a guestn http://e-learning.um.ac.id/login/index.php http://e-learning.um.ac.id/course/view.php?id=98 2. Cutter, E.G. 1979. *Plant Anatomy: Part 1 Cells and Tissues*. Second Edition. London: The English Language Book Society and Edward Arnold (Publishers) Ltd. 3. Cutter, E.G. 1979. *Plant Anatomy: Experiment and Interpretation Part 2 Organs*. London: The English Language Book Society and Edward Arnold (Publishers) Ltd. 4. Esau, K. 1977. *Anatomy of a Seed Plant*. New York: John Wiley and Son Inc. 5. Fahn, A. 1990. *Plant Anatomy*. 4th Ed. New York: Pergamon Press. 6. Hajati, S.W. *Morfologi Bagian Tubuh Tumbuhan Berbunga*. Jurusan Biologi ITB 7. Hidayat, E.B. 1994. *Morfologi Tumbuhan*. Jakarta: Dikti. 8. Hidayat, E.B. 1995. *Anatomi Tumbuhan Berbiji*. Bandung: Penerbit ITB. 9. Kartini, E. *Sitologi Tumbuhan*. Malang: FMIPA UM 10. Kartini, E. A. M. 2003. *Anatomi Organ Vegetatif*. Malang: F MIPA UM 11. Esau, K. 1977. *Anatomy of a Seed Plant.* 2 nd Ed. New York: John Wiley & Sons Inc. 12. Setjo, S., Kartini, E., Saptasari, M., & Sulisetijono. 2000. *Jaringan Tumbuhan*. Malang: FMIPA UM 13. Setjo, S., Kartini, E., Saptasari, M., & Sulisetijono. 2003. *Anatomi Tumbuhan*. Malang: IMSTEP JICA FMIPA UM 14. Sulisetijono, Kartini, E., Sulasmi, E.S., Sunarmi, Saptasari, M. 2013. *Bahan Ajar: Struktur & Perkembangan I*. Malang: Jurusan Biologi FMIPA UM 15. Tjitrosoepomo, G. 1985. *Morfologi Tumbuhan*. Yogyakarta : Gadjah Mada University Press.
Date of Class Amendment Made	January, 2022