



THE MODULE HANDBOOK

DEPARTMENT OF BIOLOGY
FACULTY OF SAINS AND MATHEMATICS
DIPONEGORO UNIVERSITY

PLANT ANATOMY

1. Module designation	PLANT ANATOMY
2. Semester(s) in which the module is taught	2 nd semester of program studi Biologi
3. Person responsible for the module	Dr. Yulita Nurcahayati, M.Si Dr. Nintya Setiari, M.Si Dr. S.W. Agung Suedy, M.Si Dra. Sri Haryanti, M.Si.
4. Language	Indonesia
5. Relation to curriculum	Compulsory
6. Teaching methods	lecture, lesson, small project
7. Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 100 minutes Contact hours (lecture and exercise) 2 hours (, assignment.) 2 hours private study including examination preparation,
8. Credit points	2 sks
9. Required and recommended prerequisites for joining the module	Plant Morphology
10. Module objectives/intended learning outcomes	<ol style="list-style-type: none">1. Be able to describe and describe the anatomical structure of plant cells and relate them to the process of cell growth2. Able to describe and describe the anatomical structure of plant tissue and its derivatives3. Able to describe and describe the anatomical structure of dicot and monocot plant stem organs and their modifications and anomalies4. Be able to describe and describe the anatomical structure of root organs and the structure of root-to-stem linkage5. Able to describe and describe the anatomical structure of the leaf organs of dicotyledonous and monocotyledonous plants, C3, C4 and CAM plants as well as their modifications and anomalies6. Able to describe and describe the anatomical structure of flower, fruit and seed organs and their modifications7. Able to describe and describe the anatomical structure of plant organ adaptation to various environmental conditions8. Able to analyze the potential and optimize the benefits of plants as a whole based on their anatomical properties



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11. Content	<p>This course is a basic course that studies the concept of the cell as the smallest structural unit, the anatomical structure of cells, division, growth and differentiation of cells, the structure and development of tissues and their derivatives, the structure and development of plant organs including stems, leaves, roots, flowers, fruits, seeds, anatomical structure of root-stem linkage, modification of organ structure due to environmental influences and potential optimization of plant benefits as a whole based on their anatomical characteristics. Presentation and discussion of assignments using small group discussion, discovery learning, and problem base learning/case study methods. In the long term, through discussion, it is hoped that there will be cooperative and collaborative communication between students/groups in learning.</p>															
12. Exams and assessment formats	<p>e.g. one official mid semester exam (90 minutes) and one official final oral exam (90 minutes), one take-home written assignments</p>															
13. Study and examination requirements	<p>Requirements for successfully passing the module e.g. the mid semester exam grade in the module is composed of 25% performance on exams, the final exam is 25%. take-home assignments, 50% Students must have a final grade of 70% or higher to pass</p> <table border="1" data-bbox="655 1137 1198 1375"> <thead> <tr> <th>Kisaran nilai</th> <th>Score</th> <th>Bobot nilai</th> </tr> </thead> <tbody> <tr> <td>≥ 80</td> <td>A</td> <td>4,00</td> </tr> <tr> <td>≥ 70 - 79</td> <td>B</td> <td>3,00</td> </tr> <tr> <td>≥ 60 - 69</td> <td>C</td> <td>2,00</td> </tr> <tr> <td>≤ 59</td> <td>D</td> <td>1,00</td> </tr> </tbody> </table>	Kisaran nilai	Score	Bobot nilai	≥ 80	A	4,00	≥ 70 - 79	B	3,00	≥ 60 - 69	C	2,00	≤ 59	D	1,00
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14. Reading list	<ol style="list-style-type: none"> Pandey B.P. 1982. Plant Anatomy. S. Chand & Company LTD. New Delhi. Fahn A. 1990. Plant Anatomy. Pergamon Press. New York. Mauseth J. D. 1988. Plant Anatomy. The Benjamin / Cummings Publishing Company, Inc. California. Hidayat E. B. 1995. Anatomi Tumbuhan Berbiji. Penerbit ITB. Bandung. Buvat, R.(1989), Ontogeny, Cell Differentiation and Structure of Vascular Plant, Springer – Verlag, Berlin, Tokyo 															