



# THE MODULE HANDBOOK

## FACULTY OF BIOLOGY

### Plant Anatomy

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| <b>Module code</b>  | BIO 30602  |
| <b>Module level</b>   | 2 <sup>nd</sup> year of Undergraduate Program in Biology   |
| <b>Abbreviation, if applicable</b>                              | -  |
| <b>Sub-heading, if applicable</b>                               | -  |
| <b>Courses included in the module, if applicable</b>            | -  |
| <b>Semester/term</b>  | Odd and Even   |
| <b>Module coordinator(s)</b>                                    | Prof. Dr. Laurentius Hartanto Nugroho, M.Agr.  |
| <b>Lecture(s)</b>   | 1. Prof. Dr. Laurentius Hartanto Nugroho, M.Agr.<br>2. Dr. Suharyanto, M.S., M.Sc.   |
| <b>Language</b>   | Indonesia  |
| <b>Classification within the Curriculum</b>                     | Elective course  |
| <b>Teaching format/class hours per week during the semester</b> | This course is organized into one class and planned to have 14 teaching weeks and 2 weeks of examination.  |
| <b>Workload</b>   | Estimated working hour: 10,5 hours/week.   |
| <b>Credit points</b>  | 2-1 credits  |
| <b>Requirements</b>   | Plant Structure and Development (BIO 20601)  |
| <b>Learning goals/ competencies</b>                             | After completing this course, students can understand various constituent organ tissues of plants from various taxon especially higher plants as well as its development.  |
| <b>Content</b>  | Plant anatomy is a subject that studies the composition of six kinds of tissue (meristem, epidermis, parenchyma, vascular, mechanic, and secretory) in both vegetative and generative organs of Angiosperm plants and organ structures of plants which have high economic value. Because of plant anatomy course is an advanced course with prerequisite plant structure and development, the subject matter is emphasized on the comparison of the structure of the plant organs in various taxon of higher plants especially the plant with high economic value. This course is given in odd and even semester as an elective course for students of the Faculty of Biology who has an interest in the structure of the plant body. This course is equipped with a practical work that conducted in the laboratory with the aim to allow students to |



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|                                | understand and explore the theory and concepts given in the course.  |
| <b>Study/exam achievements</b> | <b>1. Theory:</b> <ul style="list-style-type: none"><li>a. Midterm: 30 %</li><li>b. Final examination: 45 %</li><li>c. Tasks/quiz: 20 %</li><li>d. Presentation: 15 %</li></ul> <b>2. Laboratory work:</b> <ul style="list-style-type: none"><li>a. Pretest: 25 %</li><li>b. Slide quality: 15 %</li><li>c. Laboratory work report: 20%</li><li>d. Laboratory work examination: 40 %</li></ul>   |
| <b>Forms of media</b>          | White board, notebook, LCD   |
| <b>Literature</b>              | <ol style="list-style-type: none"><li>1. Bhojwani, S.S. and S.P. Bhatnagar, 1999, The Embryology of angiosperms, Vikas Publishing House PVT. LTD.</li><li>2. Cutter, E.G., 1970. Plant Anatomy: Experiment and interpretation. Part I: Cell and Tissues. Addison Wesley Publ. Co. Ontario.</li><li>3. Eames, A.J. and L. H. MacDaniel. 1981. An introduction to plant anatomy. TMH Edit. Tata McGraw-Hill Publ. Comp. Ltd. Bombay</li><li>4. Esau, K., 1965, Plant Anatomy, 2<sup>nd</sup> edition, Wiley Eastern Private United, New Delhi.</li><li>5. Esau, K., 1979, Anatomy of seed plants, Wiley Eastern LTD.</li><li>6. Fahn, A., 1990, Plant anatomy, 4<sup>th</sup> edition, Pergamon Press.</li><li>7. Hidayat, E.B., 1995, Anatomi tumbuhan berbiji, Penerbit ITB Bandung</li><li>8. Johansen, D.A., 1950, Plant embryology: Embryology of the spermathophyta, Chronica Botanica Co.</li><li>9. Maherwari, P., 1955, An introduction to the embryology of angiosperms. 1<sup>st</sup> edition, Mc Grow-Hill Book Co.Inc. New York.</li><li>10. Pandey, B.P., 1982, Plant anatomy, 3<sup>rd</sup> edition, S. Chan and Company Ltd. New York.</li></ol> |