# THE MODULE HANDBOOK
## DOCTOR BIOLOGICAL SCIENCES STUDY PROGRAM
## FACULTY OF BIOLOGY

# SELECTED TOPIC FOR DISSERTATION
# Experimental Systematics

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| **Course code** | BIDB203006 |
| **Course level** | Doctoral Program |
| **Semester/ term** | Odd/even |
| **Course coordinator** | Prof. Dr. Ratna Susandarini, M.Sc. |
| **Lecture(s)** | Prof. Dr. Ratna Susandarini, M.Sc.<br>Prof. Rina Sri Kasiamdari, Ph.D.<br>Abdul Razaq Chasani, Ph.D. |
| **Language** | Indonesian/English |
| **Classification within the Curriculum** | Compulsory Specialization Courses |
| **Teaching format/ class hours per week during the semester** | This course is planned to have 14 teaching weeks and 2 weeks of examination. |
| **Workload** | 1,125 hours/day<br>5 days/week<br>5,625 hours/week<br>16 Weeks/Semester<br><br>total workload : 90 hours/3,6 ECTS |
| **Credits** | 2-0 credits / 3.6 ECTS |
| **Requirements** | - |
| **Program Learning Outcome** | CPL 1.2. After completing this program, the graduates will be able to demonstrate honesty, responsibility, self-confidence, emotional maturity, ethics, and awareness of being a lifelong learner;<br>CPL 2.2. After attending this program, graduates demonstrate an understanding of substantial and leading theory in the field of biology/biological resources in order to support education for sustainable development;<br>CPL 3.1. After completing this program, the graduates will be able to discover or develop new scientific theories/concepts/ideas in biology;<br>CPL 3.3. After completing this program, the graduates will be able to manage and formulate valid and accountable research data |

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| | by upholding academic integrity and prioritizing anti-plagiarism;<br>CPL.4.3. After completing this program, the graduates will be able to apply the philosophy of biological systems in developing biological concepts in the areas of food, health, bioenergy, biomaterial and/or the environment. |
| **Course Learning Outcome** | BIDB203006.1 By the end of this course, students will be able to accurately apply the concepts and working principles of Plant Biosystematics and Experimental Systematics methods in exploring biodiversity through research at the doctoral level.<br>BIDB203006.2 By the end of this course, students will be able to determine the type of data and appropriate data collection methods in accordance with the objectives of a Dissertation research within the scope of Plant Biosystematics.<br>BIDB203006.3 By the end of this course, students will be able to develop, modify, or innovate research methods to achieve the objectives of Dissertation research within the scope of Plant Biosystematics.<br>BIDB203006.4 By the end of this course, students will be able to determine and apply appropriate data analysis methods and interpret the results to address research problems and achieve the objectives of Dissertation research within the scope of Plant Biosystematics, including proficiency in utilizing software for phenetic and phylogenetic analyses. |
| **Course Description** | This course covers the study of diversity, variation, and taxonomic relationships among plant taxa, with content tailored to the specific dissertation topics of the students. The course materials generally include: diversity and classification of taxa at the levels of family, genus, species, and intraspecific categories; phenotypic and genotypic variation at both inter- and intra-specific levels; morphological, anatomical, phytochemical, and molecular characterization; methods of data collection in plant systematics; and data analysis methods employing phenetic and phylogenetic approaches. |

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| **Assessments** | The assessment for Selected Topic for Dissertation (Experimental Systematics) is based on five components, with the respective criteria and weights:<br>A. Assignment (10%)<br>B. Presentation (10%)<br>C. Mini Project (30%)<br>D. Mid-term Exam (20%)<br>E. Final-term Exam (30%) |
| **Study Media and Literature** | **Main:**<br>• Mekonnen G, Dessalegn Y. 2012. Plant Taxonomy and Systematics: Concepts ,Sources, Botanical Nomenclature, Plant Collecting and Documentation, Herbaria and Data Information Systems. LAP Lambert Academic Publishing<br>• Rana TS, Nair KN, Upreti DK. 2020. Plant Taxonomy and Biosystematics: Classical and Modern Methods. NIPA Publishing.<br>• Judd WS, Campbell CS, Kellogg EA, Stevens PF, Donaghue MJ. 2016. Plant systematics: a phylogenetic approach. Fourth edition. Sinauer Assoc. Sunderland, MA.<br>• Heywood VH,. Brummitt RK, Culham A, Seberg O. 2007. Flowering plant families of the world. Firefly Books. Buffalo, NY.<br>**additional:**<br>• Watson, L. & M. J. Dallwitz. 1997. The families of flowering plants: descriptions and illustrations. <http://muse.bio.cornell.edu/delta/angio/www/index .htm><br>• Scientific journals on Plant Taxonomy, Systematics, and Evolution (Journal of the Arnold Arboretum, Kew Bulletin, Plant Systematics and Evolution, Rhodora, Systematic Botany, Taxon, Watsonia). |