THE MODULE HANDBOOK
FACULTY OF BIOLOGY
MASTER PROGRAMME

PLANT NUTRITION

Module code	BIO 60301
Module level	1st year of Master Program in Biology
Abbreviation, if applicable	-
Courses related	-
Semester	Even
Course coordinator(s)	Prof. Dr. Santosa
Lecture(s)	1. Prof. Dr. Santosa 2. Dr. Diah Rachamawati, M.Si
Language	Bahasa Indonesia and English
Classification within the Curriculum	Compulsory Courses for Specific Field of Interest
Teaching format/class hours per week during the semester	This course is organized into one class and planned to have 14 teaching weeks and 2 weeks of examination. This course also has laboratory works credits.
Workload	Estimated working hour: 10.5 hours/week.
Credit	2-1 credits
Requirements	-
Course Learning Outcome	1. Able to master basic concepts, principles, theories, processes, and applications related to plant nutrition. 2. Able to plan, conduct, report, and analyze researches about the plant nutrition. 3. Able to correctly plan, design, conduct, and analyze researches about the plant nutrition.

Syllabus	Plant nutrition is a compulsory subject learning about plant nutrients and related things. Dynamics of nutrients in the soil and plant body, Nutrient availability, Nutrient absorption, transport, and metabolism, Role of essential and beneficial nutrients in metabolism, Reciprocal influence between nutrients, Organic matter in the soil, Nutrient supply and growth quality (source-sink, pests and diseases, hormonal), Adaptation of plants to the supply of unbalanced nutrients, Fertilizer and fertilization.
Study/exam achievements	a. Midterm: 30% b. Final examination: 30% c. Personal assignments:20% d. Group assignments: 20%
Forms of media	White board, notebook, LCD
Reference	1. Bargagli, R. 1998. Trace elements in terrestrial plants. An ecophysiological approach to biomonitoring and biorecovery. Springer, Berlin 2. Bennet, W.F. (Ed.) 1993. Nutrient deficiencies and toxicities in crop plants, APS Press, St Paul, Min. 3. Fageria, N.K., V.C. Baligar & C.A. Jones 1997. Growth and mineral nutrition of field crops. Marcel Dekker Inc., N. York 4. Foth, H.D. & B.G. Ellis. 1997. Soil fertility. CRC- Lewis Publ., Boca Raton 5. Marschner, H. 1995. Mineral nutrition of higher plants. Acad Press, London 6. Rengel, Z. (Ed.) 1998. Nutrient use in crop production. Food product Press-The Haworth Press, Inc., N. York 7. Rengel, Z (Ed.) 1999. Mineral nutrition of crops. Fundamental mechanism and implications. Food Product Press-The Haworth Press, Inc., N. York 8. Srivastava, P.C. & U.C. Gupta 1996. Trace elements in crop production. Sience Publ., Inc., Lebanon, USA