Module designation	Plant Physiology
Semester(s) in which the module is taught	*3th*
Person responsible for the module	*Prof. Dr. Ir. Dwi Hapsoro, M.Sc*
Language	*Indonesian language*
Relation to curriculum	*Compulsory*
Teaching methods	*Lectures (100 minutes)* *Practicum sessions (170 minutes)*
Workload (incl. contact hours, self-study hours)	*Contact hours : 14 weeks x 100 minutes* *Structured learning: 14 weeks x 120 minutes* *Independent study: 14 weeks x 120 minutes* *Practicum sessions: 14 weeks x 170 minutes*
Credit points	*3 (2-1) CP or 4.76 (ECTS)* *((14 weeks x 100 minutes) + (14 weeks x 120 minutes) +* *(14 weeks x 120 minutes) + (14 weeks x 170 minutes)) :* *60 minutes/hour* *= 119 hours : 25 study hours/ECTS* *= 4.76 (ECTS)*
Required and recommended prerequisites for joining the module	*- Completion of course: Agricultural Biology*
Module objectives/intended learning outcomes	- *Students are able to apply the basic concepts and principles of cultivation technology and the development of sustainable agriculture technology* - *Students are able to identify, formulate, solve problems, and apply plant science, plant protection, soil science, socio-economic agriculture, and plant production engineering principles that are oriented towards good agricultural practices (GAP)* - *Students are able to to plan, design, implement, and develop plant production with the latest and environmentally friendly technology in creatively and innovatively*

Content	*The Plant Physiology course is a 3 (2-1) credit course. This course contains studies on: plant cells, the properties of water and thermodynamics, diffusion, osmosis, water potential, plant transpiration, mineral nutrients, and nutrient uptake, transport in phloem, enzymes, proteins, and amino acids, photosynthesis, respiration and lipids, nitrogen and sulfur assimilation, growth and development, growth regulators, and plant responses to environmental factors (photoperiodism, phototropism etc.).*
Examination forms	*oral presentation, essay*
Study and examination requirements	*Participants are evaluated based on their performance in class (lectures) (70%) and lab (practicum) (30%).* *Performance in theory (100%):* *Mid Exam (20%)* *Final Exam (20%)* *Assignments (40%)* *Class participation (10%)* *Individual quiz (10%)* *Performance in practicum (100%):* *Practicum exam (30%)* *Pre-test or post-test (10%)* *Experiment reports (60%)*
Reading list	1. *Salisbury, F.B. and C. W. Ross. Plant Physiology. 1992. Wadsworth Publishing Company. 682 p.* 2. *Taiz, L. and E. Zeiger. 2002. Plant Physiology. 3rd edition. ISBN: 0878938230. Sinauer Associates. 690 p.* 3. *Hopkins, W.G. and N.P.A. Huner. 2009. Introduction to Plant Physiology. 4th edition. John Wiley & Sons, Inc.* 4. *Fageria, N.K.,V. C. Baligar, R. B. Clark. 2010. Physiology of Crop Production. Routledge 711 Third Avenue, New York, NY 10017, USA* 5. *Abbas, Z., A.K. Tiwari, and P. Kumar. 2018. Emerging trends of plant physiology for sustainable crop production. Apple Academic Press, Wareton NJ.*