Module designation	*Greenhouse Construction and Microclimate*
Semester(s) in which the module is taught	*7th*
Person responsible for the module	*Ir. Yohannes C Ginting, M.S*
Language	*Indonesian language*
Relation to curriculum	*elective*
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	-
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 plan, design, implement and develop plant production with the latest and environmentally friendly technology creatively and innovatively*
Content	*Greenhouse construction and design, plant microclimate, microclimate characterization in greenhouses, microenvironmental influences on plantings, control systems, automation and integration of monitoring of environmental factors, plant management in greenhouses*
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. *Collier, K. 2022. Greenhouse Gardening for a Sustainable Future. Independently published. 189p* 2. *Mefferd, A. 2017. The Greenhouse and Hoophouse Grower's Handbook. Chelsea Green Publishing. 288p.* 3. *Reen, G. 2022. Greenhouse Gardening: 3 In 1: Greenhouse, Raised Bed Gardening and Companion Planting To Grow Organic Vegetables And Plants All-Year-Round. Independently published. 199p* 4. *Suhardiyanto, H. 2009. Teknologi Rumah Tanaman untuk lklim Tropika Basah Pemodelan dan Pengendalian Lingkungan. IPB Press 115p.*