Subject Module
Department of Agrotechnology
Faculty of Agriculture
University of Islam Malang

Module Handbook

Module Title	Cultivation of Horticulture Crops
Module Level, if available	Undergraduate Study Program of Agrotechnology
Course Code	MKW60622
Headings, if available	-
Course (MK)	Cultivation of Horticulture Crops
Semester	3
Course Coordinator	Dr. Ir. Mahayu Woro Lestari, MP.
Teaching Team	- Ir. Indiyah Murwani,M.P.
Language of instruction	Indonesian language/English
Linkages with the Curriculum	Study Program : Agrotechnology Specialization: Agrotechnology Type: Compulsory/~~elective~~
Learning Methods and Duration	1. Lecture: 100 minutes/meeting (14 meetings) 2. Research Based Learning through Practice in greenhouse experiment : 170 minutes/meeting (8 meetings) 3. Structured Assignments/individual and group Assigments presentation
Student Study Load	1. Lecture: 100 minutes/meeting (14 meetings) 2. Practice: 170 minutes/meeting (8 meetings) 3. Structured Assignments/quiz/group presentation 4. Attendance: 75% of total attendance
Credit Weight	3 credits or 5.1 ECTS
Requirements for Passing the Course	• Attendance >75% • The final score of all the components of the learning evaluation >44 The final score component: • 20% Midterm Exam • 20% Final Exam • 30% Practice • 20% Structured Assignments (individual and group) • 10% Presence
Prerequisite Courses	Agronomy Basic
Learning Outcomes	The expected learning outcomes are: 1. Have an attitude of creative and innovative thinking in their work in accordance with professional ethics in the field of agriculture (ILO 1) 2. Have good and deep knowledge in the field of basic agricultural science that supports Agrotechnology (ILO 3) 3. Able to solve problems that arise in the field of agrotechnology and related fields of science (ILO 5)

	4. Able to manage plant production system (ILO 9). 5. Able to create business opportunities in the field of plant production (ILO 10).
Learning Content	After completing this course students are able to: 1. Demonstrate a working knowledge and appreciation of the diversity of plants, their culture and utilization. 2. Apply horticultural principles to the successful growth and production of horticultural plants. 3. Demonstrate the knowledge, skills and attributes to be successful the horticulture profession. 4. Recognize and apply ethical professional practices to horticultural applications. 5. Synthesize and integrate information to solve horticultural problems. The topics include: **1. Introduction to Horticulture** • Principles and practices in the development • Classification of horticulture • Production and use of horticultural crops **2. Land preparation** • Selection of land • Tillage and land preparation • Fertilization and liming • Irrigation **3. Plant propagation** • Principles and practices of sexual and asexual propagation of plants used in the horticulture industry. (includes work with seeds, cuttings, grafting, micropropagation, special structures and layering). **4. Micro climates** • Optimization of the plant microclimate, • Mulching • Shading **5. Cropping pattern** • Preparation of planting material • Planting techniques • Cropping patterns **6. Pest and Disease Control** • A type of plant enemy • Loss of yield due to natural enemies • Means of control • Impact of pesticide use • Integrated management **7. Phisical Plant Growth Regulation** • The purpose of regulating plant growth • Plant vine framework • Pruning • Depletion **8. Chemical Plant Growth Regulation**

	• The purpose of regulating plant growth using hormones • Types of hormones **9. Harvest** • Estimated harvest time • Harvesting techniques **10. Post Harvest** • Post-harvest physiology • Preparation before the product is marketed • Transportation • Efforts to maintain the freshness of the results **11. Damage to Horticultural Products** • A type of mechanical damage • Prevention and handling of mechanical damage • Types of physiological damage • Prevention of physiological damage **12. Nutritional Content of Horticultural Plants** • Vegetable and fruit nutritional components • Factors that affect nutritional content • Decrease in nutritional content before consumption • Types of poison in horticultural plants **13. Vegetables Production** • Leaf vegetables • Tuber vegetables • Flower Vegetable • Fruit Vegetable **14. Fruit Production** • Seasonal fruit • Annual fruit
Test Terms and Forms	Examination requirements: A minimum of 75 % attendance to attend the final exam Forms of examination: Essay
Learning Media	Projector and screen, Zoom application, Google Classroom, e-book, WA Group, Practical guide book, soil and plant samples for research-based learning
References	**Main References :** 1. Cultivation of Horticulture Crops, Hajime Araki, 2015 2. Fundamentals of Horticulture, Dr. G. S. K. Swamy Dr. J. Auxcilia, 2016 3. Processing of Horticultural Crops, Dr. P. C. Sharma Dr. I. P. Sudhakar Sh. Mohinder Singh, 2016 **Supporting References :** 1. https://www.cod.edu/catalog/current/courses/horticulture/index.aspx 2. Inovasi Hortikultura Pengungkit Peningkatan Pendapatan Rakyat, Badan Penelitian dan Pengembangan PertanianKementerian Pertanian, 2015 3. Pengelolaan Komoditas Hortikultura Unggulan Berbasis Lingkungan, Tri Wahyudie, 2020.