

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



Module Handbook

Module Title	Basic of Agronomy
Module Level, if available	Undergraduate Study Program of Agrotechnology
Course Code	MKD 60603
Headings, if available	-
Course (MK)	Basic of Agronomy
Semester	3
Course Coordinator	Ir.Siti Muslikah,MP/Dr.Siti Asmaniyah MARDiyani,SP.MP
Teaching Team	-
Language of instruction	Indonesian language/English
Linkages with the Curriculum	Study Program : Agrotechnology Specialization: Agrotechnology Type: Compulsory/elective
Learning Methods and Duration	<ol style="list-style-type: none"> 1. Lecture: 100 minutes/meeting (14 meetings) 2. Practicum 100 minutes/meeting (7 meetings) 3. Structured Assignments/individual and group Assignments presentation
Student Study Load	<ol style="list-style-type: none"> 1. Lecture: 100 minutes/meeting (14 meetings) 2. Practicum: 100 minutes/meeting (14 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	<ul style="list-style-type: none"> • Attendance >75% • The final score of all the components of the learning evaluation >44 <p>The final score component:</p> <ul style="list-style-type: none"> • 20% Midterm Exam • 20% Final Exam • 30% Practicum • 20% Structured Assignments (individual and group) • 10% Presence
Prerequisite Courses	
Learning Outcomes	<p>The expected learning outcomes are:</p> <ol style="list-style-type: none"> 1. Having a good and deep knowledge in the disciplines of basic agricultural sciences that support Agro-technology field (ILO 1) 2. Having the ability to identify and formulate problems that arise in the field of Agro-technology and science-related fields (ILO 3) 3. Able to plan, solve problems, and manage crop production systems (ILO 6)

Learning Content

After completing this course students are able to:

1. capable of comprehending agronomy, its breadth, and many components both directly and indirectly,
2. capable on implanting principles of managing plants and their environment in order to maximise productivity

The topics include:

1. INTRODUCTION

- Understanding Agronomy
- Agricultural Revolution

21st Century Agricultural Technology Development

2. PLANT ORIGIN AND CLASSIFICATION

- Plant Origins
- Systematics of Plants
- Classification of Plants

3. GROWTH AND DEVELOPMENT OF VEGETABLES

- Definition of Growth and Development in Plants
- Growth regulators regulators and plant development
- Growth Phases of Plants
- Balancing the Reproductive and Vegetative Phases

4. AGRONOMIC CULTIVATION TECHNIQUES

- Climate
- Land
- Seeds

5. MAINTENANCE OF PLANTS

- Watering
- Weeding
- Fertilization
- Control of pests and diseases

6. INCREASE CROP PRODUCTION

Cropping pattern, intensification, diversification, extensification

7. PLANT REPRODUCTION

- Sexual reproduction
- Advantages and Disadvantages of Seed Reproduction
- Vegetative Reproduction

8. ENERGY AND AGRICULTURAL PRODUCT PRODUCTION

- Solar Energy to Chemical Energy Conversion
- Plant Functions and Their Relationship to Solar Energy

9. PHOTOSYNTHESIS

- Efficiency of Photosynthesis
- Factors influencing photosynthesis's rate
- Limitations on Plant Growth

10. PLANT AND ENVIRONMENTAL FACTORS

- Abiotic factors that affect plant growth
- Biotic factors that affect plant growth

11. HARVESTING

- Determine the Right Harvest Time
- Harvesting Techniques

12. POST-HARVESTING

- Pre-harvest factors that affect quality
 - Post-harvest Handling Techniques

	<p>13. HUMANS AND FOOD:</p> <ul style="list-style-type: none"> • Carbohydrates, proteins, fats, vitamins, minerals, and water are all classified as macronutrients. • Food as an Energy Source • Indonesia's Food Crisis • Meeting the World's Food Needs
Test Terms and Forms	<p>Examination requirements: A minimum of 75 % attendance to attend the final exam</p> <p>Forms of examination: Essay</p>
Learning Media	<p>Projector and screen, Zoom application, Google Classroom, e-book, WA Group</p>
References	<p>Main References :</p> <ol style="list-style-type: none"> 1. Harjadi. 2019. Basics of Agronomy. Gramedia Pustaka Tama. Jakarta 2. Jetkins. 2016. Agronomi: Food,Crops and Environment. Syrawood Publishing House.268 p <p>Supporting References :</p> <ol style="list-style-type: none"> 1. Sheaffer and Moncada. 2012. Introduction to Agronomy. Larsen and Keller Education.608p

