

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



Module Handbook

Module Title	Biochemistry
Module Level, if available	Undergraduate Study Program of Agrotechnology
Course Code	MKK 30521
Headings, if available	-
Course (MK)	Biochemistry
Semester	3
Course Coordinator	Ir.Siti Muslikah,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	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	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 The final score component: <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	The expected learning outcomes are: <ol style="list-style-type: none"> Having the ability to identify and formulate problems that arise in the field of Agro-technology and science-related fields (ILO 3) Able to work independently or in a team, and use various methods of communication. (ILO 4) Able to solve problems that arise in the field of agrotechnology and related fields of science (ILO 5)
Learning Content	After completing this course students are able to: capable of comprehending agricultural organisms' structure, molecules, chemical systems, and physiology

	<p>The topics include:</p> <ol style="list-style-type: none"> 1. INTRODUCTION <ul style="list-style-type: none"> • Definition and scope of biochemistry 2. CARBOHYDRATES <ul style="list-style-type: none"> • Classification of Carbohydrates • Carbohydrate Function. 3. PROTEIN <ul style="list-style-type: none"> • Peptide Bond • Protein Structure • Protein Function 4. AMINO ACIDS <ul style="list-style-type: none"> • Amino Acid Structure • Amino Acid Classification • Different types of amino acids 5. NUCLEIC ACID <ul style="list-style-type: none"> • Nucleic Acid Structure • Nucleic Acid Function 6. LIPID (FAT) <ul style="list-style-type: none"> • Elemental structure of lipids • Type and classification of Fat • Lipid Function • Lipid analysis 7. ENZYME <ul style="list-style-type: none"> • The Role of Enzymes • Enzyme Nomenclature • Enzyme Activity • Enzyme Test • Enzyme Properties 8. VITAMINS <ul style="list-style-type: none"> • Types of Vitamins • Vitamin Function 9. Minerals <ul style="list-style-type: none"> • Kinds of Minerals • Mineral function 10. METABOLISM <ul style="list-style-type: none"> • Overview of metabolism, the arrangement and breakdown of substances • Purpose of Metabolism (Catabolism and Anabolism) • Relationship between carbohydrate, fat and protein metabolism 11. Growth growth regulator/Plant Hormones <ul style="list-style-type: none"> • Understanding Plant Hormones • Kinds and Function of Plant Hormones 12. The role of macro and micro molecules in plant metabolism 13. DNA and RNA <ul style="list-style-type: none"> • Overview of DNA and RNA • Structure of DNA and RNA • Difference between DNA and RNA 14. Presentation
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
References	<p>Main References :</p> <ol style="list-style-type: none"> 1. J.M. Chesworth, T. Stuchbury, J.R. Scaife · 2012. An Introduction to Agricultural Biochemistry. Springer Netherland.512p 2. Thayumanavan. 2019. Biochemistry (for Agricultural Sciences).New Delhi <p>Supporting References :</p> <ol style="list-style-type: none"> 1. Aungsumbono. 2012. Biokimia Pangan dasar. Deeppublish. 616 hal.

