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

Module Handbook

Module Title	Plant Breeding
Module Level	Undergraduate Study Program of Agrotechnology
Course Code	MKB 40528
Headings	-
Course (MK)	Plant Breeding
Semester	IV
Course Coordinator	Ir. Maria Ulfah. 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. Practicum170 minutes/meeting (14 meetings) 3. Structured Assignments/individual and group Assigments presentation
Student Study Load	1. Lecture: 100 minutes/meeting (14meetings) 2. Practicum: 170minutes/meeting (14meetings) 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% Practicum • 20% Structured Assignments (individual and group) • 10% Presence
Prerequisite Courses	-
Learning Out comes	The expected learning out comes are: 1. Have good and deep knowledge in the field of basic agricultural science that supports Agrotechnology (ILO 3) 2. Able to work independently or in a team, and use various methods of communication (ILO 4) 3. Able to solve problems that arise in the field of agrotechnology and related fields of science (ILO 5) 4. Able to use tools, methods, and processes to solve various field problems in agriculture (ILO 6) 5. Able to design enterprise opportunities in the field of plant production (ILO 10)
Learning Content	After completing this course students are able to: 1. Study the science of plant breeding 2. correctly master the genetic basis and basic techniques of improving plant trait

	3. Manage germplasm as plant breeding material 4. Create a plant breeding program based on how to reproduce plants with appropriate breeding methods 5. Cary out self-pollinating and cross- pollinating plant breeding methods The topics include: 1. Intrudction; Definition, Purpose and Science of Plant Breeding, targeted plant breeding program. 2. Plant reproduction 3. Management and conservation of germplasm 4. Genetic Diversity; Plant introduction, hybridization, segregation, mutation, and polyploid 5. Pollen Sterility 7. Heritability 8. Heterosis 9. Self-pollinating plant breeding methods 10. Cross-pollinating plant breeding methods
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, LMS of UNISMA (Daring UNISMA), e-book, Whatsapp Group
References	Main References : 1. Acquaah, G. 2012. Principles of Plant Genetics and Breeding (2nd Edition). Wiley-Blackwell 2. Allard, R.W. 2000. Principles of Plant Breeding. 2nd. Edition. Academic Press. 3. Falconer, D.S. 1961. Introduction to Quantitative Genetics. Edinburgh: Oliver 7 Boyd 4. Permentan No. 16 Tahun 2011 tentang Pengujian, Penilaian, Pelepasan, dan Penarikan Varietas. 5. Permentan No. 38 Tahun 2011 tentang Pendaftaran Varietas Tanaman Hortikultura 6. Poehlman JM, Sleeper DA. 1995. Breeding Field Crops. Fourth Edition. Iowa (US): Iowa State University Press. 7. Poespodarsono S. 1988. Dasar-dasar Ilmu Pemuliaan Tanaman. Bogor (ID): PAU. 8. Syukur M. Sujiprihati S, Yunianti R. 2012. Teknik Pemuliaan Tanaman. Jakarta (ID): Penebar Swadaya. Supporting References : 1. Plant Breeding Journal