

Module Name	Applied Plant Breeding
Module Level, if applicable	Intermediate
Code if Applicable	0420206003
Subtitle, if applicable	-
Courses, if applicable	0420206003 (Applied Plant Breeding)
Semester(s) in which the module is taught	6 (CoE)
Person responsible for the module	Dr. Ir. Erny Ishartati MP.
Lecturer	Dr. Ir. Erny Ishartati MP. Dr. Ir. Agus Zainudin, MP.
Language	Indonesian
Relation to curriculum	Compulsory Courses for undergraduate program in Department of Agrotechnology, Faculty of Agriculture and Animal Science.
Type of teaching, contact hours	Type of teaching: Lecture, Student Presentation, Practical, Project Base Learning, Contact hours: 3 hours x 16 weeks = 48 hours
Workload	Class: 3 hours x 14 weeks = 32 hours Practical class: 0 hours x 14 weeks = 0 hours Examination 2 hours x 2 time = 4 hours Total 32 Hours
Credit points	SKS 3 SCH x (1.5) = 4.5 ECTS
Requirements according to the examination regulations	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	No prerequisites
Module Objectives (Intended learning outcomes)	This course contains the development of plant breeding throughout the world, including Indonesia. Studying strategies and steps in breeding activities, starting from providing genetic diversity, selecting parents, selecting offspring to releasing new cultivars, both in self-pollinated and cross-pollinated plants. In addition, knowing the benefits and applications of breeding activities in solving problems at the genetic and environmental levels that are oriented towards the use of living natural resources to support the development of environmentally sound industries in the scope of optimization, diversification and conservation to improve the welfare of the community.
Module Content	<ul style="list-style-type: none"> • Development of Plant Breeding Science, Strategies and Steps in plant breeding activities • Qualitative and Quantitative Properties • Hybridization • Heterosis, Inbreeding, Heritability • Environmental Genotype X Interaction • Selection Method and Heredity Test • Self-Cross pollinating Plant Breeding • Open Pollination Cultivars Assembly Strategy and Procedure • Strategy and Procedure for Assembling Hybrid Cultivars, Clonal, and Biotechnology plant • Strategy and Procedure for release of new varieties.
Study and examination requirements and forms of examination	Cognitive: Midterm exam, Final exam, Quizzes, Assignments

	Affective: Assessed from the element/variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board, power point presentation, video, practicum, and field study
Recommended Literature	<p>A. Compulsory:</p> <ul style="list-style-type: none"> - Acquaaah, G. 2020. Principles of Plant Genetics and Breeding 3rd Edition. Wiley-Blackwell - Allard, R.W. 1999. Principles of Plant Breeding, 2nd Edition. John Wiley & Sons. 264 Pages. - Arnel R. Hallauer, A.R. Carena, M.J. Miranda Filho, J.B. 2010. Quantitative Genetics in Maize Breeding (Handbook of Plant Breeding, 6) 3rd ed. Springer. 680 Pages. - Bos,I. Caligari, P. 2007. Selection Methods in Plant Breeding. Springer Science & Business Media. 461 Pages. - Brown, J. Caligari, P, 2013. An Introduction to Plant Breeding. John Wiley & Sons. 224 Pages. - Brown,J. Caligari, P. Campos, H. 2014. Plant Breeding 2nd edition. John Wiley & Sons. 256 Pages. - Poehlman, J.M. 2013. Breeding Field Crops 3rd Edition. Springer. 1094 Pages. - Shrestha, J. Chaudhary, A. and Pokhrel, Dipesh. 2019. Introduction to Genetics and Plant Breeding. AgriTech Publishing New Delhi. - Singh, D. P. Singh, A. K. Singh A. 2021. Plant Breeding and Cultivar Development 1st Edition . Academic Press is an imprint of Elsevier - Yadav,R.K. Krishna, R. 2018. Objective Breeding of Field Crops 2nd Edition. Kalyani Publishers - Hedrick, P.W., 2011, Genetic of Population [fourth edition], Jones and Barlets Publisher, LL. - Laird, N.M. Lange, C. 2011. The Fundamentals of Modern Statistical Genetics. Springer Nature Neal C. Stoskopf, Dwight T. Tomes, B. R. Christie. 201 <p>B. Option Plant Breeding Research Journals</p>
Date of Last Amendment	23 rd August 2022

