



**SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA
SHRI VAISHNAV INSTITUTE OF AGRICULTURE, INDORE**

Generic Elective Course

AGGE 402: FUNDAMENTALS OF GENETICS AND PLANT BREEDING 4 (4+0)

Course Code	Course Name	TEACHING & EVALUATION SCHEME								
		THEORY			PRACTICAL			L	P	CREDITS
		END SEMI University Exam	Two term exam*	Teachers Assessment*	END SEMI University Exam	Teachers Assessment*				
AGGE402	Fundamentals of Genetics and Plant Breeding	60	20	20	00	00	4	0	4	

1. **Legends:** L - Lecture; P - Practical; C-Credit.

2. *Teacher Assessment shall be based on following components: Quiz / Assignment / Project / participation in class.

Course Objective: To enable students to understand the basic principles of genetics, sources of genetic variation, and fundamental plant breeding methods for crop improvement.

Course Outcomes:

Unit-1: Understand the basic history, scope, and importance of genetics along with Mendel's laws of inheritance.

Unit-2 Define plant breeding and describe its aims, objectives, and scope in agricultural development.

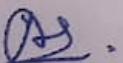
Unit-3: Breeding methods for self- and cross-pollinated crops: A brief outline of pure line selection and mass selection; the pedigree method and its modifications.

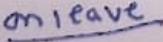
Unit-4: Explain the concept of heterosis and describe its genetic basis through dominance, over-dominance, and epistasis hypotheses along with their limitations.

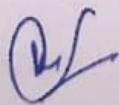
Unit-5: Concept of plant ideotype and its role in crop improvement, concept of marker assisted Selection.

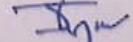
Suggested Reading

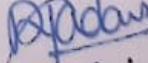
1. Singh, B.D. (2018). Plant Breeding: Principles and Methods. Kalyani Publishers, New Delhi.
2. Allard, R.W. (2017). Principles of Plant Breeding. Wiley India Pvt. Ltd.
3. Gupta, P.K. (2019). Genetics. Rastogi Publications, Meerut.


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