COURSE: GENETICS AND PLANT BREEDING
Course Code: BOT(N) 220

Syllabus

- Mendel's law of Inheritance: Mendel's experiment and Law of inheritance- Principle of segregation, Principle of independent assortment, Incomplete dominance
- Gene interactions and extra-chromosomal aberrations: Test cross, back cross, epistasis, dominant, recessive, complementary, supplementary, duplicate; multiple alleles (blood groups in humans, self-incompatibility in plants), pleiotropy, penetrance and expressivity. characteristics of extrachromosomal inheritance; cytoplasmic inheritance in *Mirabilis jalapa*; mitochondria in Yeast
- Linkage and crossing over: Complete and incomplete linkage, linkage group
- Polyploidy and Mutation: Spontaneous, induced
- Sex determination and sex-linked inheritance
- Plant breeding: Aims, objectives and basics techniques
- Crop Improvement: Selection, hybridization, plant introduction and acclimatization mutational breeding: mutational breeding and breeding for disease resistance

Unit Schedule

BLOCK-1: GENETICS

Unit-01 : Mendel's law of inheritance
Unit-02 : Gene interactions and extra chromosomal aberrations
Unit-03 : Linkage and crossing over
Unit-04 : Polyploidy and mutations
Unit-05 : Sex determination and sex-linked inheritance

BLOCK-2: PLANT BREEDING

Unit-06 : Basic techniques of plant breeding
Unit-07 : Crop improvement
Unit-08 : Mutational breeding

COURSE: GENETICS AND PLANT BREEDING (LABORATORY)

Course Code: BOT(N) 220L

Unit Schedule

Unit -01	:	To solve the problems based on Mendel's law
Unit -02	:	To solve the problems based on aberrations
Unit -03	:	To study of the floral biology of some of the locally available crops specially the crops as mentioned above
Unit -04	:	To study emasculation techniques in the field along with bagging and labelling