**PLANT MOLECULAR GENETICS CREDIT HOURS 2+1**

**LEARNING OUTCOMES:**

**The students will able to:**

1. Know about cloning and gene manipulation techniques in plants
2. Do genome mapping

**COURSE CONTENTS:**

The use of comparative genome mapping in the identification, cloning and gene manipulation of important plant genes, molecular marker in plant conservation, identifying links between genotype and phenotype using marker loci and candidate gene. Economic importance of plant molecular genetics. Arabidopsis and its importance in recent molecular genetic studies. Arabidopsis genome project: achievements and future prospects. Other plant genome projects.

**PRACTICALS:**

1. Determination of molecular marker for plant biotechnology
2. Identification of genes for phenotypic and genotype expression of plants
3. Plant transformation techniques
4. Determination of recombinant products.
5. Arabgen, Iplant and Iclouds with reference to molecular biology of plants.

**RECOMMENDED BOOKS:**

1. Bahadur, B., In Rajam, M. V., In Sahijram, L., & In Krishnamurthy, K. V. 2015. Plant biology and biotechnology: Volume II, Springer.
2. Buchanan, B. B., In Gruissem, W., & In Jones, R. L. 2015. Biochemistry & molecular biology of plants. West Sussex ; Hoboken, NJ : Wiley Blackwell
3. Clark, M. S. 2014. Plant Molecular Biology. Springer Verlag

Gelvin, Stanton B., Schilperoort, Robbert A., & Verma, Desh Pal S. 2014. Plant Molecular Biology Manual. Springer Verlag