



ADVANCES IN PLANT BIOTECHNOLOGY (Prof. Haseena Khan and Dr. Ananda Mustafiz) (2 credits)

1. Silencing of the endogenous target genes
2. Analysis of the plant gene expression
3. Isolation and Characterization of plant promoters
4. Activation tagging: a tool for plant gene discovery.
5. Plant protein-protein interaction
6. Genome wide analysis of plant gene families.
7. Tilling and eco-tilling.
8. Plant transcriptomics, proteomics and metabolomics.
9. Abiotic/biotic stress response in plants and approaches towards achieving tolerance towards various stresses.
10. Functional validation of plant genes in yeast system (yeast complementation).
11. High throughput plant phenotyping.
12. Successful case studies in plant biotechnology.
13. Urban myths and real concern about genetically modified crops.

*Suggested Readings:*

1. Introduction to Plant Biotechnology: H.S. Chawla, 3<sup>rd</sup> Ed.
2. Plant, Genes, and Crop improvement: Maarten J. Chrispeels & David E. Sadava, 2<sup>nd</sup> Ed.