

The Islamia University of Bahawalpur
Department of Biochemistry & Biotechnology

Course: **Plant Biotechnology**

Course code & credit hours: BTCH-03702 3(3-0)

Instructor: **Dr. Rozina Aslam**

COURSE CONTENTS

Week	Contents
1	Introduction and scope of plant biotechnology, applications in modern world
2	Plant tissue culture, nutrient media, sterilization techniques
3	Types of plant tissue culture
4	In vitro production of haploids, protoplast isolation and fusion
5	Somaclonal variation, germplasm storage and cryopreservation
6	Organization of DNA in plants
7	Review of basic techniques in molecular biology
8	<i>Mid Term Examination</i>
9	Gene cloning, plasmids, cosmids, phages, YAC, shuttle vectors, expression vectors
10	Isolation of DNA from plant material
11	Gene transfer in plants, marker genes, reporter genes, chimeric gene vectors
12	Gene transfer methods; agrobacterium mediated transfer, viruses mediated transfer
13	Physical and chemical methods of gene transfer, gene transfer by biolistic method
14	Chloroplast and mitochondrial DNA transformation
15	Transgenics in crop improvement
16	<i>Final Term Examination</i>

PRESCRIBED BOOKS:

1. Lehninger, A. L., Nelson, D.L. and Co. N.M., (2008). Principles of Biochemistry. W. H. Freeman; 5th Edition.

2. Purohit, S.S. (2006). A Laboratory Manual of Plant Biotechnology. Second revised edition. Agrobios, India.