

The Islamia University of Bahawalpur

Department of Biochemistry & Biotechnology

Course: **Plant Biochemistry**

Course code & credit hours: BCBT-02603 3(3-0)

Instructor: Dr. Rozina Aslam

PURPOSE OF THE COURSE AND APPROACH TO THE SUBJECT:

The aims of the course are: to introduce key concepts of plant biochemistry. To impart knowledge regarding plant pigments, photosynthetic systems and pathways, phytohormones and naturally occurring compounds. Upon successful completion of the course, the student will be able to: acquire basic knowledge of plant biochemistry, understand the nature of metabolic pathways relevant to plants.

COURSE CONTENTS

Week	Contents
1	Structure and functions of plant cell
2	Plastids, chlorophyll, photosynthesis, Rubisco.
3	Photosynthetic pigments
4	Photosynthetic reaction center, photosystem-I, photosystem-II
5	Hill's reaction, electron transport chain, ATP pathways
6	C3 and C4 pathways
7	CAM photosynthetic pathways
8	CO ₂ fixation (Calvin Benson cycle)
9	<i>Mid Term Examination</i>
10	Hatch Slack pathway and photorespiration
11	Nitrogen fixation, GS/GOGAT cycle
12	Biochemistry of seed dormancy, germination, growth, senescence and flowering
13	Mitochondrial genome and biogenesis
14	Introduction and classification of plant secondary metabolites
15	Biosynthesis of secondary plant metabolites and their biological functions
16	Signal transduction in plant cells; Phytohormones and related compounds
17	<i>Final Term Examination</i>

PRESCRIBED BOOKS:

1. Biochemistry and Molecular Biology of Plant Hormones (1999). Edited by P. J. J., Haykaas, M. A. Hall, & K.R. Libbenga, Science Pub. Co.
2. Lehninger, A. L., Nelson, D.L. and Co. N.M., (2008). Principles of Biochemistry. W. H. Freeman; 5th Edition.
3. Plant Biochemistry by T. Wood & Mercer