

Plant & Microbial Biology 135

PHYSIOLOGY AND BIOCHEMISTRY OF PLANTS

Fall Semester 2016

Course Control Number: 26099

M,W,F 10-11 AM, 103 GPB

Instructors:

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Office hours: 11 am - 12 noon, M, W, F or by appointment)

Absolute Prerequisites:

Bio 1A, 1B, and Chem 3B, or equivalent.

Lectures: MWF 10-11 am, 103 GPB Building

Textbook: Plant Physiology, L. Taiz & E. Zeiger,
2015, 6th Edition, Sinauer Associates, Inc., Publishers.

Exam schedule:

To be defined

PMB 135 TOPICS

- I. PLANTS AND WATER
 - Plant Structure
 - Factors Affecting Water Movement
- II. PHYSIOLOGY OF PHOTOSYNTHESIS
 - Photosynthetic Responses to CO₂, Light and Temperature
- III. PLANT TRANSPORT MECHANISMS
 - Diffusive Transport
 - Carriers and Channels
 - Ion Transport Pathways
 - Phloem Transport
- IV. ASSIMILATION OF SULFUR
 - Sulfate Reduction and Assimilation Reactions
- V. ASSIMILATION OF N, P, Fe, & NUTRIENT CATIONS
 - Nitrate Reduction
 - Uptake and Assimilation of Other Nutrients
- VI. NITROGEN METABOLISM
 - Nitrogen Fixation of Legume Nodules
 - Nitrogen Fixation in Cyanobacteria
- VII. LIGHT AND LIFE
 - Irradiance, Atmosphere and Evolution of Life
- VIII. PORPHYRINS AND TERPENOIDS
 - Chlorophylls, Hemes, Carotenoids
- IX. PHOTOSYNTHESIS
 - Light Reactions, Carbon Reactions
- X. SPECIALIZED FORMS OF PHOTOSYNTHESIS
 - C₄, CAM
- XI. PLANT EVOLUTIONARY ASPECTS
 - Intracellular Protein Import, Isozymes, Endosymbiosis

*Topics subject to change at the discretion of the instructor/department.