

PLANT BIOLOGY (GRADUATE GROUP) (PBI)

Graduate Studies

PBI 200A – PBGG Core Course Series–Fall quarter (5 units)

Course Description: The first of three PBGG graduate core courses.

Coverage includes (1) plant genes, (2) biotechnology, (3) genomes and gene flow, (4) principles of plant systematics, and (5) the evolution of flowering plants.

Prerequisite(s): Graduate standing; a broad background of undergraduate level coursework in Plant Biology is recommended.

Learning Activities: Lecture 3 hour(s), Discussion 2 hour(s).

Grade Mode: Letter.

PBI 200B – PBGG Core Course Series–Winter quarter (5 units)

Course Description: The second of three PBGG graduate core courses.

Coverage includes (1) embryo development, (2) cytoskeleton and vesicle trafficking, (3) cell walls, (4) cell growth, (5) secondary metabolism, (6) plastids and (7) senescence.

Prerequisite(s): PBI 200A.

Learning Activities: Lecture 3 hour(s), Discussion 2 hour(s).

Grade Mode: Letter.

PBI 200C – PBGG Core Course Series–Spring quarter (5 units)

Course Description: The third of three PBGG graduate core courses.

Coverage includes (1) plant water relations, (2) cellular & long distance transport processes, (3) mineral nutrition, (4) environmental impacts on growth & development, (5) stress perception & responses, (6) canopy processes, and (7) plant interactions with other organisms.

Prerequisite(s): PBI 200A; PBI 200B.

Learning Activities: Lecture 3 hour(s), Discussion 2 hour(s).

Grade Mode: Letter.

PBI 203N – Biology of the Plant Cell (4 units)

Course Description: Recent progresses in plant cell biology. Intracellular motility in plant cells. Common techniques associated with the progress of plant cell biology.

Prerequisite(s): PLB 111 or BIS 104; or the equivalent.

Learning Activities: Lecture 3 hour(s), Discussion/Laboratory 2 hour(s).

Enrollment Restriction(s): Open to senior undergraduate students in Plant Biology major.

Grade Mode: Letter.

PBI 210 – Plant Ecophysiology (3 units)

Course Description: Study of the mechanisms of physiological adaptation of plants to their environment.

Prerequisite(s): PLB 111; PLB 112; PLB 117.

Learning Activities: Lecture 3 hour(s).

Grade Mode: Letter.

PBI 212 – Physiology of Herbicidal Action (3 units)

Course Description: Study of the fundamental processes involved in the physiological action of herbicides. Detailed consideration of the fate of herbicides in plants.

Prerequisite(s): PLB 112.

Learning Activities: Lecture 3 hour(s).

Grade Mode: Letter.

PBI 214 – Higher Plant Cell Walls (3 units)

Course Description: Lectures focus on the structure, analysis, synthesis, and development-related metabolism of cell walls. Discussions center on analysis of scientific papers related to lecture topics.

Prerequisite(s): PLB 112; A course in Biochemistry.

Learning Activities: Lecture 2 hour(s), Discussion 1 hour(s).

Grade Mode: Letter.

PBI 220 – Plant Developmental Biology (4 units)

Course Description: A survey of the concepts of plant development and organization. Examines plant cells, tissues, and organs with special emphasis on experimental evidence for mechanisms regulating developmental processes.

Prerequisite(s): Plant Anatomy, Physiology, and Biochemistry.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s), Term Paper.

Grade Mode: Letter.

PBI 223 – Special Topics in Scientific Method (2 units)

Course Description: Examine the historical and philosophical background of the scientific method. Analyze the rational, perceptual, causal, creative and social aspects of scientific knowledge. Clarify the roles of reason, experimentation and creativity in scientific research.

Learning Activities: Discussion 2 hour(s).

Grade Mode: Satisfactory/Unsatisfactory only.

PBI 227 – Plant Molecular Biology (4 units)

Course Description: Molecular aspects of higher plant biology with emphasis on gene expression. Plant nuclear and organelle genome organization, gene structure, mechanisms of gene regulation, gene transfer, and special topics related to development and response to biological and environmental stimuli.

Prerequisite(s): MCB 121 or MCB 161.

Learning Activities: Lecture/Discussion 4 hour(s).

Grade Mode: Letter.

PBI 229 – Molecular Biology of Plant Reproduction (3 units)

Course Description: Molecular genetic basis of plant reproduction. Emphasis on understanding developmentally regulated gene expression as it relates to the major changes that occur during plant reproduction and on the genetic control of flowering.

Learning Activities: Lecture 3 hour(s).

Grade Mode: Letter.

PBI 290A – Faculty Seminar (1 unit)

Course Description: Discussion of research area of seminar speakers in Plant Biology Graduate Group Seminar Series.

Learning Activities: Discussion 1 hour(s).

Enrollment Restriction(s): Restricted to Plant Biology (PBGG) graduate students.

Repeat Credit: May be repeated 6 time(s).

Grade Mode: Satisfactory/Unsatisfactory only.

PBI 290B – Seminar (1 unit)

Course Description: Seminars presented by visiting scientists on research topics of current interest.

Learning Activities: Seminar 1 hour(s).

Repeat Credit: May be repeated.

Grade Mode: Satisfactory/Unsatisfactory only.

PBI 290C – Research Conference in Botany (1 unit)

Course Description: Presentation and discussion by faculty and graduate students of research projects in botany.

Prerequisite(s): Graduate standing and/or consent of instructor.

Learning Activities: Discussion 1 hour(s).

Repeat Credit: May be repeated.

Grade Mode: Satisfactory/Unsatisfactory only.

PBI 291 – Graduate Student Seminar in Plant Biology (1 unit)

Course Description: Student-given seminars on topics in plant biology, with critiques by instructor and peers. How to give a seminar, including preparation of visual and other teaching aids. Topic determined by instructor in charge.

Prerequisite(s): Graduate student standing.

Learning Activities: Seminar 1 hour(s).

Repeat Credit: May be repeated.

Grade Mode: Satisfactory/Unsatisfactory only.

PBI 292 – Seminars in Plants Biology (1 unit)

Course Description: Review of current literature in botanical disciplines. Disciplines and special subjects to be announced quarterly. Present and analyze assigned topics.

Prerequisite(s): Consent of instructor.

Learning Activities: Seminar 1 hour(s).

Repeat Credit: May be repeated.

Grade Mode: Satisfactory/Unsatisfactory only.

PBI 293 – Seminar in Postharvest Biology (1 unit)

Course Description: Intensive study of selected topics in the postharvest biology of fruits, vegetables, and ornamentals.

Prerequisite(s): Consent of instructor. Open to advanced undergraduates.

Learning Activities: Discussion 1 hour(s).

Repeat Credit: May be repeated.

Grade Mode: Satisfactory/Unsatisfactory only.

PBI 297T – Tutoring in Plant Biology (1-5 units)

Course Description: Offers graduate students, particularly those not serving as teaching assistants, the opportunity to gain teaching experience.

Learning Activities: Tutorial 3-15 hour(s).

Grade Mode: Satisfactory/Unsatisfactory only.

PBI 298 – Group Study (1-5 units)

Course Description: Group study.

Learning Activities: Variable.

Repeat Credit: May be repeated 4 time(s).

Grade Mode: Satisfactory/Unsatisfactory only.

PBI 299 – Research (1-12 units)

Course Description: Research.

Prerequisite(s): Consent of instructor. Graduate standing.

Learning Activities: Variable.

Grade Mode: Satisfactory/Unsatisfactory only.

PBI 390 – The Teaching of Plant Biology (2 units)

Course Description: Consideration of the problems of teaching botany, especially of preparing for and conducting discussions, guiding student laboratory work, and the formulation of questions and topics for examinations.

Prerequisite(s): Graduate standing; concurrent appointment as a teaching assistant in Plant Biology.

Learning Activities: Discussion 2 hour(s).

Grade Mode: Satisfactory/Unsatisfactory only.