PLANT BIOLOGY (PLB)

College of Biological Sciences

PLB 005 — Foundations in Plant Biology (1 unit)

Course Description: Active areas of research in the Plant Biology department. Navigation of the Plant Biology major, campus resources, and career perspectives.
Learning Activities: Discussion 1 hour(s).
Grade Mode: P/NP only.

PLB 010 — Plant Biology (3 units)

Course Description: The social and natural science of plants. Cultural history and socioeconomic importance of plants. Biology of plants reproduction, including flowers, seeds and fruits. Historical, cultural, religious and medicinal uses of plants. Plants in the visual arts, music and literature.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE); Scientific Literacy (SL).

PLB 090X — Plant Science Seminar (1-4 units)

Course Description: Examination of a special topic in a small group setting.
Prerequisite(s): Consent of instructor.
Learning Activities: Variable.
Credit Limitation(s): Not open for credit to students who have completed PLS 090X.
Grade Mode: Letter.

PLB 092 — Internship (1-12 units)

Course Description: Technical and/or professional experience on or off campus. Supervised by a member of the Plant Biology faculty.
Prerequisite(s): Consent of instructor.
Learning Activities: Internship 3-36 hour(s).
Grade Mode: Pass/No Pass only.

PLB 098 — Directed Group Study (1-5 units)

Course Description: Primarily for lower division students.
Prerequisite(s): Consent of instructor.
Learning Activities: Variable.
Grade Mode: Pass/No Pass only.

PLB 099 — Special Study for Undergraduates (1-5 units)

Course Description: Special study for undergraduates.
Prerequisite(s): Consent of instructor.
Learning Activities: Variable.
Grade Mode: Pass/No Pass only.

PLB 105 — Developmental Plant Anatomy (5 units)

Course Description: Structural anatomy of vascular plants. Training in basic tissue sectioning, staining, and use of the compound microscope.
Prerequisite(s): BIS 002C; or other similar preparation in plant biology.
Learning Activities: Lecture 3 hour(s), Laboratory 6 hour(s).
Enrollment Restriction(s): Restricted to 50 students; split equally into two lab groups.
Grade Mode: Letter.
General Education: Science & Engineering (SE).

PLB 111 — Plant Physiology (3 units)

Course Description: Plant cell as a functional unit. The processes of absorption, movement, and utilization of water and minerals. Water loss, translocation, photosynthesis, respiration.
Prerequisite(s): (BIS 002A, BIS 002B, BIS 002C); (CHE 008B (can be concurrent) or CHE 118B (can be concurrent)); PHY 007C (can be concurrent); PLB 105 recommended.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.

PLB 111D — Problems in Plant Physiology (1 unit)

Course Description: Discussion of problems and applications relating to principles presented in PHY 111. Problems assigned weekly showing novel applications of principles described in PHY 111; repare answers to be delivered orally during the class period.
Prerequisite(s): PLB 111 required concurrently.
Learning Activities: Discussion 1 hour(s).
Grade Mode: Pass/No Pass only.

PLB 112 — Plant Growth & Development (3 units)

Course Description: Introduction to the mechanisms and control systems that govern plant growth and development and the responses of plants to the environment. Strong emphasis on vegetative development of flowering plants.
Prerequisite(s): (BIS 002A, BIS 002B, BIS 002C); (CHE 008B or CHE 118B); (BIS 101 or BIS 101V).
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE).

PLB 112D — Problems in Plant Growth & Development (1 unit)

Course Description: Discussion of problems and applications relating to principles presented in PLB 112. Students will be assigned problems each week showing novel applications of the principles described in PLB 112 and will prepare answers to be delivered orally during class period.
Prerequisite(s): PLB 112 required concurrently.
Learning Activities: Discussion 1 hour(s).
Grade Mode: Pass/No Pass only.

PLB 113 — Molecular & Cellular Biology of Plants (3 units)

Course Description: Molecular and cellular aspects of the growth and development of plants and their response to biological and environmental stresses. Primary focus on processes unique to plants. Experimental approaches will be emphasized.
Prerequisite(s): (BIS 002A, BIS 002B, BIS 002C); (BIS 101 or BIS 101V).
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.
General Education: Quantitative Literacy (QL); Scientific Literacy (SL); Visual Literacy (VL).

PLB 113D — Problems in Molecular & Cellular Biology of Plants (1 unit)

Course Description: Discussion of topics and applications related to principles presented in PLB 113. Assigned topics each week show novel applications of the principles described in PLB 113; discussion of topics during class period.
Prerequisite(s): PLB 113 required concurrently.
Learning Activities: Discussion 1 hour(s).
Grade Mode: Pass/No Pass only.

PLB 116 — Plant Morphology & Evolution (5 units)

Course Description: Structure and evolution of terrestrial plants. Evolutionary and developmental origins and adaptive significance of both reproductive and vegetative structures, in the context of current understanding of phylogenetic relationships.
Prerequisite(s): Introductory Plant Biology; e.g., BIS 002C, PLS 002.
Learning Activities: Lecture 3 hour(s), Laboratory 4 hour(s).
Credit Limitation(s): Not open for credit to students who have completed PLS 116.
Cross Listing: PLS 116.
Grade Mode: Letter.
General Education: Science & Engineering (SE).

PLB 117 — Plant Ecology (4 units)

Course Description: The study of the interactions between plants, plant populations or vegetation types and their physical and biological environment. Special emphasis on California. Four full-day field trips and brief write-up of class project required.
Prerequisite(s): (BIS 001A, BIS 001B, BIS 001C) or (BIS 002A, BIS 002B, BIS 002C); PLB 111 recommended.
Learning Activities: Lecture 3 hour(s), Fieldwork 3 hour(s).
Cross Listing: EVE 117.
Grade Mode: Letter.

PLB 119 — Population Biology of Invasive Plants & Weeds (3 units)

Course Description: Origin and evolution of invasive plant species and weeds, reproduction and dispersal, seed ecology, modeling of population dynamics, interactions between invasive species, native species, and crops, biological control. Laboratories emphasize design of competition experiments and identification of weedy species.
Prerequisite(s): (BIS 001A, BIS 001B, BIS 001C) or (BIS 002A, BIS 002B, BIS 002C); introductory statistics recommended.
Learning Activities: Lecture 2 hour(s), Laboratory 3 hour(s).
Cross Listing: EVE 119.
Grade Mode: Letter.
General Education: Science & Engineering (SE).

PLB 123 — Plant-Virus-Vector Interaction (3 units)

Course Description: Analysis of interactions necessary for viruses to infect plants.Interactions among insect vectors and host plants involved in the plant-virus life cycle. Evolutionary aspects of the molecular components in viral infection and modern approaches to the interdiction of viral movement.
Prerequisite(s): BIS 002A; (BIS 101 or BIS 101V); PLB 105, PLP 120, and ENT 100 recommended.
Learning Activities: Lecture 3 hour(s).
Cross Listing: ENT 123, PLP 123.
Grade Mode: Letter.
General Education: Science & Engineering (SE); Scientific Literacy (SL); Writing Experience (WE).

PLB 126 — Plant Biochemistry (3 units)

Course Description: The biochemistry of important plant processes and metabolic pathways. Discussion of methods used to understand plant processes, including use of transgenic plants.
Prerequisite(s): BIS 103 or BIS 105.
Learning Activities: Lecture 3 hour(s).
Cross Listing: MCB 126.
Grade Mode: Letter.
General Education: Science & Engineering (SE); Scientific Literacy (SL).

PLB 127 — Systematics of Vascular Plants (5 units)

This version has ended; see updated course, below.
Course Description: Diversity, phylogeny, and taxonomy of lycophytes, ferns, and seed plants (gymnosperms and angiosperms), emphasizing relationships and distinguishing characteristics of families and genera represented in the California flora. Principles and methods of phylogeny reconstruction, classification, and plant nomenclature. Practice identifying plants to species using taxonomic keys.
Prerequisite(s): BIS 002C or PLS 002; or consent of instructor.
Learning Activities: Lecture 3 hour(s), Laboratory 6 hour(s).
Credit Limitation(s): No credit if student has taken PLB/PLS 102 or EVE/PLB 108.
Grade Mode: Letter.
General Education: Science & Engineering (SE); Visual Literacy (VL).

PLB 127 — Systematics of Vascular Plants (5 units)

Course Description: Diversity, phylogeny, and taxonomy of lycophytes, ferns, and seed plants (gymnosperms and angiosperms), emphasizing relationships and distinguishing characteristics of families and genera represented in the California flora. Principles and methods of phylogeny reconstruction, classification, and plant nomenclature. Practice identifying plants to species using taxonomic keys.
Prerequisite(s): BIS 002C or BIS 070 or PLS 002 or BIO 001; or consent of instructor.
Learning Activities: Lecture 3 hour(s), Laboratory 6 hour(s).
Credit Limitation(s): No credit if student has taken PLB/PLS 102 or EVE/PLB 108.
Cross Listing: EVE 127, PLS 127.
Grade Mode: Letter.
General Education: Science & Engineering (SE); Visual Literacy (VL).
This course version is effective from, and including: Spring Quarter 2026.

PLB 143 — Evolution of Crop Plants (4 units)

Course Description: Origins of crops and agriculture, including main methodological approaches, centers of crop biodiversity, dispersal of crops, genetic and physiological differences between crops and their wild progenitors, agriculture practiced by other organisms, and role and ownership of crop biodiversity.
Prerequisite(s): PLS 002 or BIS 001C or BIS 002C.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE) or Social Sciences (SS); Scientific Literacy (SL); Writing Experience (WE).

PLB 148 — Introductory Mycology (4 units)

This version has ended; see updated course, below.
Course Description: Systematics, ecology, evolution, and morphology of fungi. Importance of fungi to humans.
Prerequisite(s): BIS 002A; BIS 002B; BIS 002C.
Learning Activities: Lecture 2 hour(s), Laboratory 6 hour(s).
Enrollment Restriction(s): Limited enrollment.
Cross Listing: PLP 148.
Grade Mode: Letter.
General Education: Science & Engineering (SE).

PLB 148 — Introductory Mycology (4 units)
Course Description: Systematics, ecology, evolution, and morphology of fungi. Importance of fungi to humans.
Prerequisite(s): (BIS 002A or (BIO 002, BIO 002L)), (BIS 002B or (BIO 001, BIO 001L)), (BIS 002C or BIO 003).
Learning Activities: Lecture 2 hour(s), Laboratory 6 hour(s).
Enrollment Restriction(s): Limited enrollment.
Cross Listing: PLP 148.
Grade Mode: Letter.
General Education: Science & Engineering (SE).
This course version is effective from, and including: Spring Quarter 2026.

PLB 189 — Experiments in Plant Biology: Design & Execution (3 units)

Course Description: Provides an opportunity for undergraduate students to formulate experimental approaches to current questions in plant biology and to carry out their proposed experiments.
Prerequisite(s): (BIS 001A, BIS 001B, BIS 001C) or (BIS 002A, BIS 002B, BIS 002C); or the equivalent courses in Plant Sciences, and consent of instructor.
Learning Activities: Discussion/Laboratory 6 hour(s).
Repeat Credit: May be repeated 12 unit(s).
Grade Mode: Pass/No Pass only.

PLB 190C — Research Conference in Plant Biology (1 unit)

Course Description: Introduction to research methods in plant biology. Design of field or laboratory research projects, survey of appropriate literature, and discussion of research by faculty and students.
Prerequisite(s): Consent of instructor; upper division standing in Plant Biology or related discipline.
Learning Activities: Discussion 1 hour(s).
Repeat Credit: May be repeated.
Grade Mode: Pass/No Pass only.

PLB 192 — Internship (1-12 units)

Course Description: Technical and/or professional experience on or off campus. Supervised by a member of the Plant Biology Department faculty.
Prerequisite(s): Consent of instructor; completion of 84 units.
Learning Activities: Internship 3-36 hour(s).
Repeat Credit: May be repeated.
Grade Mode: Pass/No Pass only.

PLB 194H — Special Study for Honors Students (1-5 units)

Course Description: Independent study of selected topics under the direction of a member or members of the staff. Completion will involve the writing of a senior thesis.
Prerequisite(s): Consent of instructor; open only to majors of senior standing on honors list.
Learning Activities: Variable.
Grade Mode: Pass/No Pass only.

PLB 197T — Tutoring in Plant Biology (1-5 units)

Course Description: Assisting the instructor by tutoring students in one of the Department's regular courses.
Prerequisite(s): Consent of instructor; upper division standing.
Learning Activities: Discussion 2-6 hour(s).
Repeat Credit: May be repeated.
Grade Mode: Pass/No Pass only.

PLB 198 — Directed Group Study (1-5 units)

Course Description: Directed group study.
Prerequisite(s): Consent of instructor.
Learning Activities: Variable.
Grade Mode: Pass/No Pass only.

PLB 199 — Special Study for Advanced Undergraduates (1-5 units)

Course Description: Special study for advanced undergraduates.
Prerequisite(s): Consent of instructor.
Learning Activities: Variable.
Grade Mode: Pass/No Pass only.

PLB 396 — Teaching Assistant Training Practicum (1-4 units)

Course Description: Practical experience in acting as teaching assistant in Plant Biology courses. Learning activity: hands on experience in preparing for and conducting discussions, guiding student laboratory work, and the formulation of questions and topics for examinations.
Prerequisite(s): Consent of instructor; graduate standing.
Learning Activities: Variable 3-20 hour(s).
Repeat Credit: May be repeated.
Grade Mode: Satisfactory/Unsatisfactory only.