

PLANT MOLECULAR AND CELLULAR BIOLOGY (CALs)

Program Information

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Plant Molecular and Cellular Biology (PCMB) is an interdisciplinary and interdepartmental graduate degree program that emphasizes understanding the molecular and cellular mechanisms that mediate plant development, adaptation, and evolution. Students can pursue an M.S. or a Ph.D. degree through the PCMB program. All students complete core courses in Advanced Genetics, Plant Molecular Biology and Genomics, Plant Cellular and Developmental Biology, and Plant Biochemistry. In addition to the core classes, students can select from a variety of courses in biochemistry, molecular biology, physiology, breeding, genetics, evolution, microbiology, and plant pathology.

New students are exposed to a variety of faculty and experimental systems while they rotate through several laboratories during their first two semesters before selecting an adviser and dissertation research area. Both M.S. and Ph.D. students take four required courses:

PCB 5065 Advanced Genetics (4 cr.), PCB 5530 Plant Molecular Biology and Genomics (3 cr.), PCB 6528 Plant Cell and Developmental Biology (3 cr.) and BOT 6935 Special Topics (1-4 cr.), as well as journal colloquium classes (PCB 7922 Journal Colloquy in Plant Molecular and Cellular Biology (1 cr.)). Additional elective courses are taken after approval by the student's supervisory committee. For additional information see <http://pmcb.ifas.ufl.edu>.

Successful candidates should have a strong interest in plant molecular and cellular mechanisms controlling development, metabolism, adaptation, and evolution. Applicants typically have a B.S. or M.S. in the agricultural, forestry, biological or chemical sciences.

Degrees Offered

Degrees Offered with a Major in Plant Molecular and Cellular Biology

- Doctor of Philosophy
 - without a concentration
 - concentration in Toxicology

Requirements for these degrees are given in the Graduate Degrees (<http://gradcatalog.ufl.edu/graduate/degrees/>) section of this catalog.

Courses

Plant Molecular and Cellular Biology Courses

Code	Title	Credits
BOT 6935	Special Topics	1-4
PCB 5065	Advanced Genetics	4
PCB 5530	Plant Molecular Biology and Genomics	3
PCB 6528	Plant Cell and Developmental Biology	3
PCB 6910	Supervised Research	1-5

PCB 6937	Special Topics in Plant Molecular and Cellular Biology	1-4
PCB 6971	Research for Master's Thesis	1-15
PCB 7922	Journal Colloquy in Plant Molecular and Cellular Biology	1
PCB 7979	Advanced Research	1-12
PCB 7980	Research for Doctoral Dissertation	1-15

College of Agricultural and Life Sciences Courses

Code	Title	Credits
ALS 5156	Agricultural Ecology Principles and Applications	3
ALS 5905	Individual Study	1-4
ALS 5932	Special Topics	1-4
ALS 6046	Grant Writing	2
ALS 6166	Exotic Species and Biosecurity Issues	3
ALS 6921	Colloquium on Plant Pests of Regulatory Significance	1
ALS 6925	Integrated Plant Medicine	4
ALS 6931	Plant Medicine Program Seminar	1
ALS 6935	Topics in Biological Invasions	3
ALS 6942	Principles of Plant Pest Risk Assessment and Management	3
ALS 6943	Internship in Plant Pest Risk Assessment and Management	1-10
ANS 6936	Graduate Seminar in Animal Molecular and Cell Biology	1-2
BCH 5045	Graduate Survey of Biochemistry	4
FNR 6933	Seminar	1
STA 6093	Introduction to Applied Statistics for Agricultural and Life Sciences	3
STA 6329	Matrix Algebra and Statistical Computing	3

Student Learning Outcomes

Plant molecular & Cellular biology (MS)

SLO 1 Knowledge
Describe and explain fundamental theories and concepts in plant biochemistry, cell and developmental biology, genetics and genomics, molecular biology and general plant biology

SLO 2 Knowledge
Use critical thinking to evaluate research design and experiments

SLO 3 Skills
Critically evaluate the primary scientific literature

SLO 4 Skills
Develop practical experimental research skills

SLO 5 Skills
Communicate effectively using scientific writing and oral presentation skills

SLO 6 Professional Behavior
Effectively work in teams with peers interacting honestly, ethically and with cultural sensitivity