

# PLANT MOLECULAR AND CELLULAR BIOLOGY (CLAS)

## 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

## Student Learning Outcomes

### Plant molecular & Cellular biology (phd)

#### 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

Complete plant biology research of sufficient quality to be published in peer-reviewed journals.

#### 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

### 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