

# PLANT BIOLOGY

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## Learning Outcomes

### Master of Science (M.S.)

1. **Know:** Students will demonstrate broad knowledge of essential background and recent developments in diverse areas of plant biology, and familiarity with modern techniques and methodologies used in the chosen area of research.
2. **Apply/Create:** Students will demonstrate ability to conduct research in the chosen area of plant biology, including formulating hypotheses based on previous work in the field, designing experimental approaches, carrying the project to completion, and assembling the findings into a written work that advances understanding in the field.
3. **Communicate:** Students will demonstrate ability to disseminate the findings of their research in well-organized writing, as well as in formal research seminars/talks.
4. **Think:** Students will demonstrate ability to critically analyze published work by others in their specialty area.
5. **Professional Practice:** Students will demonstrate knowledge and comprehension of research ethics issues, including ethical principles related to authorship, research reporting, data fabrication, plagiarism, conflicts of interest, peer review, and data sharing.

### Doctor of Philosophy (Ph.D)

1. **Know:** Students will demonstrate in-depth knowledge of essential background and key developments in diverse areas of plant biology, and demonstrate knowledge of modern techniques/methodologies used in plant biology research.
2. **Apply/Create:** Students will demonstrate ability to design and carry out a major research project in the chosen area of plant biology, including formulating hypotheses based on previous work in the field, and assembling new findings into a written work that advances understanding in the field.
3. **Think:** Students will demonstrate ability to critically analyze work by others in their specialty area.
4. **Communicate:** Students will demonstrate ability to convey scientific ideas and results in clear, concise, and well-organized writing, as well as in formal oral or poster presentations at professional conferences/meetings.
5. **Professional Practice:** Students will demonstrate knowledge and comprehension of research ethics issues, including ethical principles related to authorship, research reporting, data fabrication, plagiarism, conflicts of interest, peer review, data sharing.
6. **Teach:** Students will demonstrate effective skills in undergraduate teaching using effective pedagogical practice.