

School of Biological Sciences
Illinois State University

Program Learning Objectives for the Ph.D. Degree

The Ph.D. program in Biological Sciences prepares students for careers in biology-related fields. Students in the program gain a command of the discipline of biology through advanced course work, performing research, and reporting their findings to peers.

-First, they develop command of advanced concepts of biology within the entire field as well as a chosen discipline.

-Next, they develop advanced scientific literacy. The ability to critically read and evaluate primary scientific literature will be stressed as well as developing the ability to write well using the technical style accepted within the discipline.

-Additionally, they develop an understanding of biological research through performing a research project of their own.

-Finally, they make and report a significant contribution to the body of knowledge within their discipline.

Program Goal	In depth understanding of advanced concepts of biology					
Outcomes	Data Needed	Data Already Available	What group will be assessed	Assessment Methods	Who will conduct assessment	Timeline
Demonstrating command of material through performance in graduate classes	Student scores on exams & labs	Yes	Students enrolled in BSC graduate classes	Direct: Examinations, papers, presentations	Course instructors will perform immediate assessment; School Graduate Studies Committee will collect and review performance	Annual
Demonstrating command of material during oral defense of thesis	Record of thesis defenses	Yes, but form could be modified to be more informative	Ph.D. candidates who defend their thesis	Direct: Oral examination on advanced biological concepts	Thesis committee members	Annual
Demonstrating command of material during comprehensive exams	Record of comprehensive exam performance	Yes, but form could be modified to be more informative	All Ph.D. candidates	Direct: Oral and written examination on advanced biological concepts	Thesis committee members	Annual

Program Goal	Developing advanced scientific literacy					
Outcomes	Data Needed	Data Already Available	What group will be assessed	Assessment Methods	Who will conduct assessment	Timeline
Ability to critically evaluate and discuss primary literature	Student scores from graduate seminar classes	Yes	Ph.D. students enrolled in graduate seminars	Direct: papers, presentations, and discussions covering primary manuscripts	Course instructors will perform immediate assessment; School Graduate Studies Committee will collect and review performance	Annual
Ability to critically evaluate and discuss primary literature	Student performance at thesis defense	Yes	Ph.D. candidates who defend their thesis	Direct: Oral examination including command of current literature in discipline	Thesis committee members	Annual
Ability to write in a manner consistent with the field	Student performance on thesis	Yes	PH.D. candidates who defend their thesis	Direct: Defense of thesis including content and style	Thesis committee members	Annual

Program Goal	Developing understanding of biological research					
Outcomes	Data Needed	Data Already Available	What group will be assessed	Assessment Methods	Who will conduct assessment	Timeline
Becoming independent researcher capable of directing a discrete project	Student thesis and defense	Yes	Ph.D. candidates who defend their thesis	Direct: Defense of research proposal and thesis and discussions with committee on thesis project	Thesis advisor will assess day-to-day progress; Thesis committee will oversee long-term progress	Annual
Ability to critically evaluate and discuss research approaches in primary literature	Student scores from graduate seminar classes	Yes	All Ph.D. students are required to take graduate seminars	Direct: papers, presentations, and discussions covering primary manuscripts	Course instructors will perform immediate assessment; School Graduate Studies Committee will collect and review performance	Annual

Program Goal	Make and report a significant contribution to body of knowledge within discipline					
Outcomes	Data Needed	Data Already Available	What group will be assessed	Assessment Methods	Who will conduct assessment	Timeline
Present seminar of thesis research	Record of seminar	Yes	Ph.D. candidates who defend their thesis are required to give public seminar	Direct: Assess data collection, and analysis from seminar	Thesis committee and Graduate Studies Committee	Annual
Produce thesis	Copy of thesis	Yes	Ph.D. candidates who submit a thesis to defend	Defense of the thesis	Thesis committee	Annual
Submission of two primary manuscripts resulting from thesis research	Submitted manuscripts	Yes, however, new requirement	All Ph.D. candidates are required to submit two manuscripts prior to awarding of Ph.D.	Verification of submission and manuscript content	Thesis committee	Annual