

Required Courses for
Graduate Students in the
Integrative Physiology (IP)
Research Group

Faculty Affiliated with the IP Research Group

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IP – Required Courses

- BIOL 701 – *Ethics in Scientific Research*
(1 credit)

Students must take this course during their first year in the Program.

IP – Required Courses

- At least six (6) credits of seminar-style courses, either in BIOL 793A-D or BIOL 796A-D, or in any combination of the two.
- BIOL 793A-D – *Advanced Topics in Life Sciences (Students can choose from any section)* (1-2 cr)
- BIOL 796A-D – *Graduate Seminar (Students can choose from any section)* (1-2 credits)
- Students may take more than 6 credits, but no more than sixteen (16) credits can apply toward the degree.

IP – Required Participation

- BIOL 790B – *Research Colloquium in Life Sciences* (1-2 credits)
- Starting in Fall 2010, all IP students must attend the Colloquium every semester even if not enrolled for credit.
- Each student must also present his/her research in the Colloquium once per academic year.
- Students may register for Biol 790B each semester, but no more than ten (10) credits can apply toward the degree.

IP – Elective Courses

- All IP Master's students who joined the Program in Fall 2008 or later must take at least four (4) didactic graduate courses.
- All IP Doctoral students who joined the Program in Fall 2008 or later must take at least six (6) didactic graduate courses.
- These didactic graduate courses include, but are not limited to the following courses.

IP – Elective Courses (continued)

- BIOL 604 – *Principles of Neurobiology*
(3 credits)
- BIOL 617 – *Biochemical Adaptations*
(3 credits)
- BIOL 626 – *Plant Anatomy* (3 credits)
- BIOL 640 – *Mammalian Physiology* (3 credits)
- BIOL 642 – *Principles of Plant Physiology*
(4 credits)

IP – Elective Courses (continued)

- BIOL 645 – *Cell Physiology* (3 credits)
- BIOL 647 – *Comparative Animal Physiology* (3 credits)
- BIOL 648 – *Endocrinology* (3 credits)
- BIOL 649 – *Comparative Nutrition* (3 credits)
- BIOL 651 – *Comparative Vertebrate Anatomy Laboratory* (2 credits)
- BIOL 655 – *Comparative Vertebrate Anatomy and Biomechanics* (3 credits)

IP – Elective Courses (continued)

- BIOL 660 – *Microbial Physiology* (3 credits)
- BIOL 661 – *Comparative Biomechanics and Bioinspired Design* (3 credits)
- BIOL 730B – *Special Lectures in Life Sciences (Integrative Physiology)* (3 credits)
- BIOL 742 – *Topics in Advanced Plant Physiology* (2 credits)
- BIOL 743 – *Ecological Plant Physiology* (3 credits)

IP – Elective Courses (continued)

- BIOL 748 – *Environmental Physiology*
(3 credits)
- BIOL 786 – *Bioenergetics* (3 credits)
- CHEM 771 – *Metabolism and Energetics*
(3 credits)
- PSY 720 – *Systems and Cognitive Neuroscience* (3 credits)
- PSY 742 – *Psychopharmacology* (3 credits)
- PSY 744 – *Neuropsychology* (3 credits)

IP – Elective Courses (continued)

- ME 747 – *Orthopedic Biomechanics - Lower Extremities and Spine* (3 credits)

IP – Course Work

- The Advisory Committee may require the student to take certain specific courses, depending on the person's academic background and research objectives.

IP – Thesis/Dissertation Credits

- Master's students must take six (6) credits of Biol 797 (*Thesis*) in order to graduate. Students may register for more than 6 credits of Biol 797, but only six (6) credits can be applied toward the MS degree.
- Doctoral students must take twelve (12) credits of Biol 799 (*Dissertation*) in order to graduate. Students may register for more than 12 credits, but no more than eighteen (18) can be applied toward the PhD degree.

Additional Graduate Courses

- Master's students must complete 30 credits in the program, and Doctoral students must complete 60. In addition to the above required classes, students may also take the following:
- Biology 789 — *Independent Graduate Study in Life Sciences* (1-3 credits). This class can be used to receive research credit related to a student's thesis or dissertation project prior to taking Biol 797 or Biol 799. Biol 789 can be repeated, but only nine (9) credits can be applied toward an MS or PhD degree.

Additional Graduate Courses (continued)

- Biology 791 – *Research Laboratory Discussions in Life Sciences* (1-2 credits).
With the Advisor's approval, a graduate student can enroll in this class to receive credit for presenting and participating during formal laboratory meetings with his/her Advisor's research group. This course may be repeated, but only 10 credits can apply toward a MS or PhD degree.

Sample Program of Study: IP Master's Student

Credits

– Four 600- or 700-level didactic courses	12
– BIOL 701 – <i>Ethics in Scientific Research</i>	1
– BIOL 790B – <i>Research Colloquium</i>	4
– BIOL 791 – <i>Research Lab. Discussions</i>	4
– BIOL 793A-D – <i>Advanced Topics in Life Sciences</i> and/or BIOL 796A-D – <i>Graduate Seminar</i>	6
– BIOL 789 – <i>Independent Study</i> (“Prethesis”)	3
– <u>BIOL 797 – <i>Thesis</i></u>	<u>6</u>
Total	≥30

Sample Program of Study: IP Doctoral Student

Credits

– Six 600- or 700-level didactic classes	18
– BIOL 701 – <i>Ethics in Scientific Research</i>	1
– BIOL 790B – <i>Research Colloquium</i>	8
– BIOL 791 – <i>Research Lab. Discussions</i>	8
– BIOL 793A-D – <i>Advanced Topics in Life Sciences</i> and/or BIOL 796A-D – <i>Graduate Seminar</i>	8
– BIOL 789 – <i>Independent Study</i>	6
– <u>BIOL 799 – <i>Dissertation</i></u>	<u>12</u>
Total	≥60