

ANS Laboratory & Integrative Animal Biology Course Requirements

*Only **one** lab course is required to fulfill the requirement.*

Course	Prerequisites	Units	Quarter	Title
ANG 111	BIS 2C, BIS 101, BIS 102/ABI 102, BIS 103/ABI 103	4	F,W	Molecular Biology Laboratory Techniques
ANS 106	ANS 104 or NPB 102	3	W	Domestic Animal Behavior Laboratory
ANS 130	ANS 100/NPB 101	3	S	Endocrinology Laboratory
ANS 132	BIS 2A/B and CHE 8B/118B	3	F	Microbiology of Animal Systems Laboratory
ANS 133	ABI 102, ABI 103, ANS 100/NPB 101	4	NCO	Animal Cell Culture Laboratory
ANS 134	ABI 103 (conc. ok), ANS 100/NPB 101 (conc. ok), STA 100/PLS 120	3	W	Animal Nutrition Laboratory
ANS 135	ABI 102, ABI 103, ANS 100/NPB 101	3	F	Production Animal Laboratory
ANS 136	ANS 2, BIS 2ABC, CHE 8B/118B	3	F	Techniques and Practices of Fish Culture
ANS 137	ANS 2, BIS 2ABC, CHE 8B/118B	3	S	Techniques and Practices of Avian Culture
ANS 138	CHE 2B, ANS 120 rec.	3	F [^]	Meat Quality and Safety Laboratory
ANS 139	ABI 102, BIS 101	3	NCO	Experiments in Animal Physiology
ANS 160A	ANS 104 (conc. ok) or NPB 102 (conc. ok) and NPB 121 (conc. ok)	2	W	Stress and Male Reproduction I Students must take 160A and 160B to fulfill lab requirement
ANS 160B	ANS 104 (conc. ok) or NPB 102 (conc. ok) and NPB 121 (conc. ok), ANS 160A	2	S	Stress and Male Reproduction II Students must take 160A and 160B to fulfill lab requirement
MCB 120L	BIS 102/ABI 102, MCB 120 (3 units) (must take conc.) (Pass 1 restricted to MCB, MIC Majors only)	3	All	Molecular Biology and Biochemistry Laboratory
MCB 160L	BIS 101 (Pass 1 restricted to Genetics Majors only)	5	All	Principles of Genetics Laboratory
MIC 102	BIS 1A/BIS 2A, CHE 2B (conc. ok)	3	All	Introductory Microbiology Students must take MIC 102 and 103L to fulfill lab requirement
MIC 103L	BIS 1A/BIS 2A, CHE 2B (conc. ok), MIC 102	2	All	Introductory Microbiology Laboratory Students must take MIC 102 and 103L to fulfill lab requirement
NPB 101L	ANS 100 or NPB 101 or NPB 110C (Pass 1 restricted to NPB, BIS, CNU, NSC, HUB Majors only)	3	All	Systemic Physiology Laboratory
PMI 126L	PMI 126 (3 units) (conc. ok)	2	NCO	Immunology Laboratory

**ANS 160A and 160B uses a deferred grading method; grades for both classes will be available after completion of 160B

F, W, S, Su: Fall, Winter, Spring, Summer
 Conc. Ok : Concurrent Enrollment ok
 Rec.: Recommended
 NCO: Not Currently Offered
 ^: Course offered in odd years
 ~: Course offered in even years

Integrative Animal Biology Requirement

For all Specializations except Aquatics, Avian, or Poultry—must 2 courses from the list below

Course	Prerequisites	Units	Quarter	Title
ANS 123	ABI 103 or BIS103, ANS 100 or NPB 101	4	S	Animal Growth and Development
ANS 124	ABI 103 (conc. ok) or BIS 103 (conc. ok), ANS 100 or NPB 101	4	W	Lactation
NPB 121	ANS 100 or NPB 101 or NPB 110C	4	W	Physiology of Reproduction **NPB 121L is OPTIONAL
NPB 130	ANS 100 or NPB 101 or NPB 110C	4	F	Physiology of the Endocrine Glands

Aquatics Integrative Animal Biology Courses – must take 2 courses from the list below

Only select courses from this list if you are specializing in Aquatics

Course	Prerequisites	Units	Quarter	Title
ANS 123	ABI 103 or BIS 103 and ANS 100 or NPB 101	4	S	Animal Growth and Development
EVE 112	BIS 1B or BIS 2B, BIS 2C (courses in systematics, and EVE courses rec)	3	W~	Biology of Invertebrates
NPB 123	BIS 1AB or BIS 2AB	4	F	Comparative Vertebrate Organology
WFC120	BIS 2BC	3	F	Biology and Conservation of Fishes

Avian and Poultry Integrative Animal Biology Courses—select 2 from the list below

Only select courses from this list if you are specializing in Avian or Poultry

Course	Prerequisites	Units	Quarter	Title
ANS 123	ABI 103 or BIS103 and ANS 100 or NPB 101	4	S	Animal Growth and Development
AVS 100	BIS 2AB, ANS 2 rec.	3	S	Avian Biology
AVS 103	BIS 2AB	3	NCO	Avian Development and Genomics
NPB 130	ANS 100 or NPB 101 or NPB 110C	4	F	Physiology of the Endocrine Glands

Prerequisite Sequences

Course:	Required Preparation:
ABI 102	CHE2AB, CHE8AB, or 118AB
ABI 103	ABI 102 or BIS 102
ANG 107	BIS 101
ANS 100	BIS 2A, CHE 2B
BIS 101	BIS 2AB (C- or better) , CHE8A or 118A, STA 100
NPB 101	BIS 2A, CHE 2B, Physics recommended
STA 100	MAT 16AB, 17AB, 21AB

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 ~: Course offered in even years