

# Animal Science BS Pre-Vet Biotechnology Emphasis Curriculum Guide

Fall 2012

Name:	ID:	Term/Year of Program Entry:
Advisor(s):	Minors (if applicable):	Anticipated Graduation Date:

**All courses required within the Animal Science major must be taken A-F graded unless only offered as S-N.**

**Consult your advisor with questions.**

## Foundation Courses

Course & Credits	Term(s) Offered	LE Status*	Term Completed/Grade
ApEc 1101 Prin. Of Microeconomics (4)	F, S	SSci, GP	
Biol 1009 General Biology (4)	F, S, SS	Biol	
AFEE 3221 Comm. for Ag, Food and the Environment (3) <i>or</i> Comm 1101 Intro. to Public Speaking (3)	F F, S, SS	 CLE	
Writ 3562W Technical and Professional Writing (4)	F,S,SS	WI ( <i>meets both upper level req. for major</i> )	
Math 1142 Short Calculus (4) <i>or</i> Math 1271 Calculus (4)	F, S, SS F, S, SS	Math Math	

## Professional Courses

AnSc 1101 Introductory Animal Science (4)	S		
AnSc 2401 Animal Nutrition (3)	F		
AnSc 3011 Statistics for Animal Scientists (4)	F, S		
AnSc 3221 Animal Breeding (4)	F		
AnSc 3301 Human & Animal Physiology Lecture (3)	F, S		
AnSc 3302 Human & Animal Physiology Lab (1)	F, S		
AnSc 4096 Professional Internship (3) <i>or</i> AnSc 4009W Undergraduate Research Thesis (6)	F, S, SS F, S, SS		

## Required Coursework for Pre-Vet Students/Biotech

**Students in this emphasis must complete all courses below**

Course & Credits	Term(s) Offered	LE Status*	Term Completed/Grade
Chem 1061 Chemistry Principles I Lecture (3) <b>And</b> Chem 1065 Chemistry Principles I Lab (1) <i>Concurrent enrollment required in lecture &amp; lab Chem 1071 and 1075 are acceptable substitutions</i>	F,S,SS F,S,SS	Phys	
Chem 1062 Chemistry Principles II Lecture (3) <b>And</b> Chem 1066 Chemistry Principles II Lab (1) <i>Concurrent enrollment required in lecture &amp; lab Chem 1072 and 1076 are acceptable substitutions</i>	F,S,SS F,S,SS		
Chem 2301 Organic Chemistry (3) <i>Chem 2302 Organic Chemistry II (3) This course is a prerequisite for enrollment in Chem 2311. Concurrent registration is allowed. This course does not appear on the APAS report as it is not required for the degree. This course may be taken S/N graded.*</i>	F,S,SS F,S,SS		
Chem 2311 Organic Chemistry Lab (4)	F,S,SS		
FScN 2021 Introductory Microbiology (4) <i>or</i> VBS 2032 General Microbiology (5)	F,S F,S		
BioC 3021 Biochemistry (3)	F,S,SS		
GCD 3022 Genetics (3)	F,S,SS		
Phys 1101W Introductory College Physics I (4) and Phys 1102W Introductory College Physics II (4)	F,S S	Phys, WI Phys, WI	

## Required Coursework for Biotech Emphasis

Course & Credits	Term(s) Offered	LE Status*	Term Completed/Grade
CFAN 1501 Biotech, People & the Environ. (3)	S	TS	
AnSc 3509 Animal Biotechnology (3)	F		
<b>Students in this emphasis must complete 11 credits from the grouping below. At least 2 credits should be a laboratory course.</b>			
AnSc 3511 Animal Growth & Development (3)	S		
AnSc 3305 Repro. Biol in Health and Disease (4)	F		
AnSc 3521 Biotech Appl. In Pharm., Research & Devel. (3)	F		
BioC 4025 Laboratory in Biochemistry (2)	F,S		
BioC 4125 Lab: Molecular & Cellular Biology (3)	F		
BioC 5001 Biochem, Molecular & Cellular Biology (5)	F		
GCD 4025 Cell Biology Laboratory (2)	S		
GCD 4143 Human Genetics (3)	S		
GCD 4151 Molecular Biology of Cancer (3)	F		
GCD 4161 Developmental Biology (3)	F		
GCD 5036 Molecular Cell Biology (3)	F		
MICB 4131 Immunology (3)	F,S		
MICB 4141W Bio, Genetics & Patho. Viruses (3)	S		
MICB 4151 Mol. & Genetic Micro. Diseases (3)	S		
MICB 4235 Virology, Immun. & Micro. Genetics (3)	S		

## Liberal Education Requirements-University Wide

Liberal Education (LE) courses are required by all students.

The following **CORE** requirements will not automatically be met by courses within this emphasis. Students should consult the online class schedule to find courses that satisfy the missing areas. Each course must be a minimum of 3 credits. Consult your advisor with questions.

Requirement	Course Title	Term Completed/Grade
Other Humanities (OH)		
Literature (Lit)		
Historical Perspectives (HP) ( <i>suggestion: AnSc 1701</i> )		
University Writing-by placement	Writ 1301 or 1401 or AP or approved transfer course	

The following liberal education **theme** requirements will not automatically be met by courses within this emphasis. Students are required to **select two out of the following three**. Consult your advisor with questions.

Diversity & Social Justice (DSJ)		
Environment (Envt)		
Technology & Society (TS)		

\*This emphasis includes the prerequisite requirements for admission to the University of Minnesota Vet School. Be advised that some veterinary schools have prerequisites requiring additional biology and organic chemistry as well as other courses not required within this emphasis. See your advisor for more information and/or visit:

<http://aavmc.org/Member-Institutions.aspx>

Students are encouraged to view requirements of additional schools early in their undergraduate career.

## Sample Plan of Study

### Animal Science Pre-Vet Emphasis/Biotech Option

<b>Fall 1</b>		<b>Credits</b>	<b>Spring 1</b>		<b>Credits</b>
AnSc 1001	Orientation to Animal Science	1	AnSc 1101	Intro. to Animal Science	4
Math 1142	Short Calculus	4	Chem 1061/65	Chemical Principles I Lec/Lab	4
Chem 1015	Introductory Chemistry Lecture	3	Or		
<b>Or</b>			Chem 1062/66	Chemical Principles II Lec/Lab	4
Chem 1061/65	Chemical Principles I Lec/Lab	4	CFAN 1501	Biotech., People & the Environ.	3
Writ 1301	University Writing (by placement)	4	Lib Ed or AnSc		
		<b>13-16</b>	<i>Suggestions: AnSc 1403 or AnSc 2012</i>		3-6
<b>Fall 2</b>		<b>Credits</b>	<b>Spring 2</b>		<b>Credits</b>
Chem 1062/66	Chemical Principles II Lec/Lab	4	Biol 1009	General Biology	4
<b>or</b>			Comm 1101	Intro. to Public Speaking	3
Biol 1009	General Biology	4	ApEc 1101	Principles of Microeconomics	3
AnSc 2401	Animal Nutrition	3	AnSc 3011	Stats. For Animal Scientists	4
Lib Ed or AnSc		7-10	Lib Ed or AnSc		3
<i>Suggestions: AnSc 1701, 1011, 2055</i>		<b>14-17</b>			<b>14-17</b>
<b>Fall 3</b>		<b>Credits</b>	<b>Spring 3</b>		<b>Credits</b>
Chem 2301	Organic Chemistry I	3	Chem 2302	Organic Chemistry II	3
AnSc 3221	Animal Breeding	4	Chem 2311	Organic Lab	4
Writ 3562W	Tech. & Prof. Writing	4	VBS 2032	General Microbiology w/ Lab	4
GCD 3022	Genetics	3	AnSc 3509	Animal Biotechnology	3
AnSc Management Course		4	AnSc 3511	Animal Growth & Development	3
Or Lib Ed or AnSc		3			
		<b>15-18</b>			<b>17</b>
<b>Fall 4</b>		<b>Credits</b>	<b>Spring 4</b>		<b>Credits</b>
AnSc 3301	Human & Animal Phys. Lec	3	Biol 3021	Biochemistry	3
AnSc 3302	Human & Animal Phys. Lab	1	Phys 1102W	Introduction to College Physics II	4
Phys 1101W	Introduction to College Physics I	4	AnSc 4096	Professional Internship	3
AnSc 3305	Reprod. Biology in Health & Dis	4	Missing Lib Ed or Elective Requirement		6
AnSc 3521	Biotech Appl. In Pharm/Res. & Dev	3			
		<b>15</b>			<b>16</b>
					<b>16</b>

**\*Internship: Students should be planning for internship(s) between their sophomore and junior year**