

## **BIOTECHNOLOGY OPTION FOR ANIMAL SCIENCE**

### **Curriculum Requirements & Recommendations**

#### **GENERAL EDUCATION REQUIREMENTS**

##### **Communications.**

English 1000	3h
Communication 1200	3h
English 2030 (Professional writing) or an Ag Journalism class	3h

##### **Mathematics.**

Math 1100 (or higher)	3h
Stats 1400	3h

##### **Physical & Biological Sciences.**

Biology 1500	5h
Chem 1310, 1320 & 1330	8h
Chem 2050 (f)	5h
<i>Recommend:</i>	
Chem 2100, 2110 & 2130 (8h total)	
Biochem 3630 (w)	3h
<i>Recommend:</i>	
Biochem 4270 & 4272 (6h total)	

##### **Social & Behavioral Sciences (CAFNR requirements)**

Ag Econ 1041 & 1042 (or equivalent micro/macro economics series)	6h
History 1100 or 1200 or Political Sci 1100 or 2100	3h

##### **Humanities & Fine Arts (Any approved CAFNR credits)** 6h

*Recommend:*  
Philosophy 1150 (bioethics)  
Philosophy 4400 (Philosophy of Science)  
(or other medical/bioethics)

**GENERAL ED. TOTAL..... 51-57 hours**

**DIVISION REQUIREMENTS**

**Freshman year:**

A.S. 1011 Animal Science (f)	3h
A.S. 1065 Animal Science Laboratory Practicum	2h
A.S. 1013 Biotechnology in Animal Agriculture (sp)	3h

**Sophomore year:**

A.S. 2165 Ruminant Production (f)	3h
A.S. 2175 Monogastric Production (sp)	3h
A.S. 3254 Physiology of Domestic Animals (f)	3h
A.S. 3255 Physiology Laboratory (sp)	2h

**Junior Year:**

A.S. 3213/4323 Genetics; <b>MRP</b>	5h
A.S. 3212 Prin of Animal Nutrition (f)	2h
A.S. 4314 Reproductive Physiology (w)	3h

**F/S/J Division TOTAL..... 29 hours**

**Senior year:**

Senior Biotechnology Coursework **7 h**

A.S. 4973 Molecular and Cellular Techniques in Animal Science; **WI** 3h

A.S. 4994 Problems: Laboratory Research in Animal Science 4h

One senior Production Systems course: **3h**

- A.S. 4975 Beef Production (sp)
- A.S. 4976 Dairy Production (f)
- A.S. 4977 Horse Production (sp)
- A.S. 4978 Swine Production (f)
- A.S. 4979 Poultry Production (sp)

Molecular/Cellular Biology, Biochemistry or Chemistry Classes: **6-8 h**

(Choose two)

Biology 2300 <i>Introduction to Cell Biology</i>	4h
Chemistry 3200 <i>Quantitative Methods Analysis with Lab</i>	4h
Biology 3750 <i>General Microbiology</i>	4h
Microb 3200 <i>Introduction to Medical Microbiology and Immunology with lab</i>	4h
Biochem 4270 <i>Biochemistry I</i>	3h
Biochem 4272 <i>Biochemistry II</i>	3h
Microb 4304 <i>Immunology</i>	3h
Bio Sci 4972 <i>Developmental Biology</i>	3 h
Bio Sci 4976 <i>Molecular Biology</i>	3 h
Vet BioMed 4333 <i>Veterinary Cell Biology</i>	4 h
Med Pharm & Phys 4310 <i>Mammalian Cell Function</i>	3 h

*Note: Some of these classes have pre-requisites that are not included in the Gen Ed and Division Requirements. Students will need to plan their coursework accordingly.*

**Animal Science Electives:**

**6 h**

(Choose two)

A.S. 2111 Sophomore seminar; <b>WI</b>	3h
A.S. 3214 Prin of Meat Sci (f)	3h
A.S. 3231 Prin of Dairy Foods Sci (w)	3h
A.S. 3232 Applied Nutrition (w)	3h
A.S. 4312 Monogastric Nutrition (f)	3h
A.S. 4332 Ruminant Nutrition (w)	3h
A.S. 4354 Physio/Biochem Muscle Food (w)	3h
A.S. 4384 Reproductive Management (f)	3h
A.S. 4387 Equine Breeding Management	3h
A.S. 4975 Beef Production <b>WI</b> (w)	3h
A.S. 4976 Dairy Production <b>WI</b> (f)	3h
A.S. 4977 Horse Production (w)	3h
A.S. 4978 Swine Production <b>WI</b> (f)	3h
A.S. 4979 Poultry Production <b>WI</b> (w)	3h

**SENIOR A.S. REQUIRED TOTAL..... 22-24 hours**

**ELECTIVES..... 18-26 hours**