<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gen Ed – English Composition</strong></td>
<td>6 Hours&lt;br&gt;ENGL 1113 or 1313; &amp; ENGL 1213 (or 1413 or 3323)</td>
<td>6 Hours&lt;br&gt;ENGL 1113 or 1313; &amp; ENGL 1213 (or 1413 or 3323)</td>
<td>6 Hours&lt;br&gt;ENGL 1113 or 1313; &amp; ENGL 1213 (or 1413 or 3323)</td>
</tr>
<tr>
<td><strong>Gen Ed – American History &amp; Government</strong></td>
<td>6 Hours&lt;br&gt;HIST 1103 (or 1483 or 1493); and POLS 1113</td>
<td>6 Hours&lt;br&gt;HIST 1103 (or 1483 or 1493); and POLS 1113</td>
<td>6 Hours&lt;br&gt;HIST 1103 (or 1483 or 1493); and POLS 1113</td>
</tr>
<tr>
<td><strong>Gen Ed – Analytical &amp; Quant. Thought</strong></td>
<td>6 Hours&lt;br&gt;MATH 2103; STAT 2013</td>
<td>6 Hours&lt;br&gt;MATH 1513; MATH 1613 or STAT 2013 or STAT 2023</td>
<td>4 Hours&lt;br&gt;MATH 2144</td>
</tr>
<tr>
<td><strong>Gen Ed – Humanities</strong></td>
<td>6 Hours&lt;br&gt;Courses designated H</td>
<td>6 Hours&lt;br&gt;Courses designated H</td>
<td>6 Hours&lt;br&gt;Courses designated H</td>
</tr>
<tr>
<td><strong>Gen Ed – Natural Science</strong></td>
<td>7 Hours&lt;br&gt;BIOL 1114 and any course designated (N)</td>
<td>13 Hours&lt;br&gt;BIOL 1114; CHEM 1314, 1515</td>
<td>9 Hours&lt;br&gt;CHEM 1314; 5 hours courses designated N</td>
</tr>
<tr>
<td><strong>Gen Ed – Social Science</strong></td>
<td>3 Hours&lt;br&gt;AGEC 1113</td>
<td>3 Hours&lt;br&gt;AGEC 1113</td>
<td>3 Hours&lt;br&gt;AGEC 1113</td>
</tr>
<tr>
<td><strong>Gen Ed - Additional</strong></td>
<td>6 Hours&lt;br&gt;Courses designated A, H, N, or S</td>
<td>None</td>
<td>6 Hours&lt;br&gt;Courses designated A, H, N, or S</td>
</tr>
<tr>
<td><strong>Diversity &amp; International Dimension</strong></td>
<td>At least one (D) course</td>
<td>At least one (D) course</td>
<td>At least one (D) course</td>
</tr>
<tr>
<td><strong>College/Dept Requirements – Ag Sci. &amp; Natural Res.</strong></td>
<td>7 Hours&lt;br&gt;AG 1011; NREM 1012; SOIL 2124</td>
<td>4 Hours&lt;br&gt;AG 1011; PLNT 1213</td>
<td>1 Hour&lt;br&gt;AG 1011</td>
</tr>
<tr>
<td><strong>College/Dept Requirements – Natural Sciences (or basic Animal Science)</strong></td>
<td>30 Hours&lt;br&gt;BIOL 1604&lt;br&gt;BOT 1404&lt;br&gt;CHEM 1314, 1515&lt;br&gt;MICR 2123, 2132&lt;br&gt;PHYS 1114, 1214</td>
<td>7 Hours&lt;br&gt;ANSI 1124; ANSI 2223 or 2253</td>
<td>6 Hours&lt;br&gt;(1 course from two of the following):&lt;br&gt;1. PLNT 1213,HORT 1013, NREM 1113&lt;br&gt;2. SOIL 1113, 2124&lt;br&gt;3. ANSI 1124, FDSC 1133, ENTO 2993, 3003&lt;br&gt;4. NREM 1014, 2013, BIOC 2344, 3713, ENVR 1113, LA 1013</td>
</tr>
<tr>
<td><strong>College/Dept Requirements – Written and Oral communication</strong></td>
<td>6 Hours&lt;br&gt;AGCM 3103 (or BCOM 3113 or ENGL 3323)</td>
<td>6 Hours&lt;br&gt;AGCM 3103 or ENGL 3323 (if ENGL 1213 above; hours in this block reduced by 3.)</td>
<td>6 Hours&lt;br&gt;AGCM 3103 (or BCOM 3113 or 3443 or ENGL 3323) (if ENGL 3323 is substituted for ENGL 1213 above; hours in this block are reduced by 3.).</td>
</tr>
<tr>
<td></td>
<td>AGCM 3203 or SPCH 2713 or 3733</td>
<td>AGCM 3203 or SPCH 2713 or 3733</td>
<td>AGCM 3203 or SPCH 2713 or 3733 (If used as (S) course above, hours in this block reduced by 3.).</td>
</tr>
</tbody>
</table>
## Comparison of Undergraduate Pre-Vet Options in CASNR – Page 2

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major Requirements—Core</strong></td>
<td>38 Hours</td>
<td>18 Hours</td>
<td>43 Hours</td>
</tr>
<tr>
<td></td>
<td>ANSI 3543</td>
<td>ANSI 3423, 3543</td>
<td>BIOC 3723, 3813</td>
</tr>
<tr>
<td></td>
<td>BIOC 3653 (or 3713 &amp; 3723)</td>
<td>ANSI 3903 or any course designated (I).</td>
<td>BIOI 1114, 1604 (or BOT 1404)</td>
</tr>
<tr>
<td></td>
<td>BIOL 3023, 3204</td>
<td>9 hours from: ANSI 3433, 3443, 3623, 3653, or 9 hours from FDSC 3113, 3154, 3333, 3733, 3603, 4763.</td>
<td>CHEM 1515, 3053, 3112, 3153</td>
</tr>
<tr>
<td></td>
<td>CHEM 3015 (or 3053, 3112 &amp; 3153);</td>
<td>Additional Core: 25 Hours</td>
<td>MATH 2153 (or STAT 2013 or STAT 4013)</td>
</tr>
<tr>
<td></td>
<td>NREM 3012, 3013, 3503, 4001, 4524</td>
<td>MICR 2123 and 2132</td>
<td>PHYS 1114 (or 2013), 1214 (or 2114)</td>
</tr>
<tr>
<td></td>
<td>Choose 2 of the following: NREM 4464, BIOL 4174, BIOL 4413</td>
<td>PHYS 1114, 1214</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18 Hours</td>
<td>9 hours from: ANSI 3433, 3443, 3623, 3653, or 9 hours from FDSC 3113, 3154, 3333, 3733, 3603, 4763.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ANSI 3423</td>
<td>BIOL 1604 (or BIOL 3204 or ANSI 3414). 5 hours of upper div. org. chem. BIOS 3653</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3443</td>
<td>9 hours from: ANSI 3433, 3443, 3623, 3653, or 9 hours from FDSC 3113, 3154, 3333, 3733, 3603, 4763.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOC 3653 (or 3713 &amp; 3723)</td>
<td>Additional Core: 25 Hours</td>
<td>MATH 2153 (or STAT 2013 or STAT 4013)</td>
</tr>
<tr>
<td></td>
<td>BIOL 3023, 3204</td>
<td>MICR 2123 and 2132</td>
<td>PHYS 1114 (or 2013), 1214 (or 2114)</td>
</tr>
<tr>
<td></td>
<td>CHEM 3015 (or 3053, 3112 &amp; 3153);</td>
<td>Additional Core: 25 Hours</td>
<td>MATH 2153 (or STAT 2013 or STAT 4013)</td>
</tr>
<tr>
<td></td>
<td>NREM 3012, 3013, 3503, 4001, 4524</td>
<td>MICR 2123 and 2132</td>
<td>PHYS 1114 (or 2013), 1214 (or 2114)</td>
</tr>
<tr>
<td></td>
<td>Choose 2 of the following: NREM 4464, BIOL 4174, BIOL 4413</td>
<td>MI</td>
<td></td>
</tr>
<tr>
<td><strong>Major Requirements—Related Courses</strong></td>
<td>Option 1 (9 hours from the following):</td>
<td>Alternative 2 (20 Hours): ANSI 1111, 4863</td>
<td>Option 2 (20 Hours):</td>
</tr>
<tr>
<td></td>
<td>ANSI 1124, 3443, 3523, 3653, 3753</td>
<td>ANSI 1111, 4863</td>
<td>BIOC 3224 (or CHEM 3433),</td>
</tr>
<tr>
<td></td>
<td>BIOC 3713, 3723, 3813</td>
<td>3 hours from: ANSI 4023, 4423, 4543, 4553, 4613, 4643, 4703, 4713 or upper division FDSC courses.</td>
<td>BIOC 4883</td>
</tr>
<tr>
<td></td>
<td>BIOL 3114, 3153, 3163, 3513, 4104, 4113, 4215, 4223, 4273, 4283, 4293, 4303, 4363</td>
<td>10 hours: ( minimum of 9 upper division hours required)</td>
<td>BIOI 3023 (or ANSI 3423 or PLNT 3554) and 3204 (or BOT 3463 or ENTO 3044).</td>
</tr>
<tr>
<td></td>
<td>BOT 3005</td>
<td></td>
<td>Minimum 6 hours of BIOC or courses related to BIOC, subject to Advisor approval:</td>
</tr>
<tr>
<td></td>
<td>ENTO 2993, 3003, 4854</td>
<td></td>
<td>ANSI 3543; BIOC 1990 (up to 2 hrs), 2101, 2202, 3003, 4113, 4523, 4990</td>
</tr>
<tr>
<td></td>
<td>GEG 4343</td>
<td></td>
<td>BIOI 3034, 3104, 3114, 3214, 3233, 4104, 4133, 4174, 4215, 4223, 4243, 4283, 4293</td>
</tr>
<tr>
<td></td>
<td>MICR 3033, 3143, 4123</td>
<td></td>
<td>BOT 3462</td>
</tr>
<tr>
<td></td>
<td>NREM 3083, 3101, 3103, 3224, 3502, 3613, 3713, 4023, 4033, 4043, 4093, 4403, 4414, 4424, 4452, 4453, 4464, 4473, 4533, 4543, 4613, 4783, 4793, 4960, 4980, 4990</td>
<td></td>
<td>ENTO 4854</td>
</tr>
<tr>
<td></td>
<td>PLNT 1213</td>
<td></td>
<td>MICR 3143, 3154, 3223, 3253, 4012, 4052, 4053, 4112, 4123, 4203, 4233, 4253, 4263, 4323, 4423</td>
</tr>
<tr>
<td></td>
<td>10 hours: ( minimum of 9 upper division hours required)</td>
<td></td>
<td>NSCI 4123</td>
</tr>
<tr>
<td><strong>Major Requirements—Related Courses</strong></td>
<td>Alternative 1: First two semesters in College of Veterinary Medicine</td>
<td></td>
<td>PHYS 4313</td>
</tr>
<tr>
<td></td>
<td>With the approval of the advisor, dept. head, and dean, a maximum of 12 hours from an accredited dental, medical, optometry, osteopathic, pharmacy, podiatry, or veterinary medical school may be used to complete hours.</td>
<td></td>
<td>STAT 4013 (if not used as (A) above)</td>
</tr>
<tr>
<td>Option 1 or 2</td>
<td>Option 2: With the approval of advisor, dept. head, and dean, hours of basic sciences from an accredited chiropractic, dental, medical, optometry, osteopathic, pharmacy, podiatry, or veterinary medical school to total 57 hrs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>130</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>
Undergraduate Courses Listed in the 3 CASNR Pre-Vet Options

**AG 1011** First Year Seminar
**AG 3010** Internships in Agriculture

**AGEC 1113** Introduction to Agricultural Economics (S)

**AGCM 3103** Written Communications in Agric. Sciences and Natural Resources
**AGCM 3203** Oral Communications in Agric. Sciences & Natural Resources (S)

**ANSI 1111** Animal and Food Science Experience
**ANSI 1124** Introduction to the Animal Sciences
**ANSI 2233** The Meat We Eat
**ANSI 3414** Form and Function of Livestock and Poultry
**ANSI 3423** Animal Genetics
**ANSI 3433** Animal Breeding
**ANSI 3443** Animal Reproduction
**ANSI 3523** Pet and Companion Animal Management
**ANSI 3543** Principles of Animal Nutrition
**ANSI 3623** Livestock Behavior Handling
**ANSI 3653** Applied Animal Nutrition
**ANSI 3753** Basic Nutrition for Pets
**ANSI 3903** Agricultural Animals of the World (I)
**ANSI 4023** Poultry Science
**ANSI 4423** Horse Science
**ANSI 4543** Dairy Cattle Science
**ANSI 4553** Sheep Science
**ANSI 4613** Beef Cow-Calf Management
**ANSI 4643** Swine Science
**ANSI 4703** Equine Enterprise Management
**ANSI 4713** Beef Seedstock Management and Sales
**ANSI 4843** Applications of Biotechnology in Animal Science
**ANSI 4863** Capstone for Animal Agriculture
**ANSI 4900** Special Problems
**ANSI 4910** Animal Industry Internship

**BCOM 3113** Written Communication
**BCOM 3443** Business Communication for International Students

**BIOC 1990** Freshman Research in Biochemistry
**BIOC 2101** The Experiments Behind the Facts of Real Science
**BIOC 2202** Medicine and Molecules
**BIOC 2344** Chemistry and Applications of Biomolecules
**BIOC 3003** Hypothesis-Driven Undergraduate Research
**BIOC 3224** Physical Chemistry for Biologists
**BIOC 3653** Survey of Biochemistry
**BIOC 3713** Biochemistry I
**BIOC 3723** Biochemistry and Molecular Biology Laboratory
**BIOC 3813** Biochemistry II
**BIOC 4113** Molecular Biology
**BIOC 4523** Biochemistry of the Cell
**BIOC 4883** Senior Seminar in Biochemistry
**BIOC 4990** Undergraduate Research
Undergraduate Courses Listed in the 3 CASNR Pre-Vet Options

**BIOL 1114** Introductory Biology (LN)
**BIOL 1604** Animal Biology
**BIOL 3023** General Genetics
**BIOL 3034** General Ecology
**BIOL 3104** Invertebrate Zoology
**BIOL 3114** Vertebrate Morphology
**BIOL 3153** Animal Behavior
**BIOL 3163** Environmental Biology
**BIOL 3204** Physiology
**BIOL 3214** Human Anatomy
**BIOL 3233** Human Reproduction
**BIOL 3513** Principles of Conservation Biology
**BIOL 4104** General Parasitology
**BIOL 4113** Conservation Genetics
**BIOL 4133** Evolution
**BIOL 4174** Mammalogy
**BIOL 4215** Mammalian Physiology
**BIOL 4223** Mammalian Physiology Laboratory
**BIOL 4243** Introductory Pharmacology
**BIOL 4273** Environmental Physiology
**BIOL 4283** Endocrinology
**BIOL 4293** Behavioral Neuroendocrinology
**BIOL 4303** Organismal Ecotoxicology
**BIOL 4363** Principles of Toxicology
**BIOL 4413** Biology of Fishes

**BOT 1404** Plant Biology (LN)
**BOT 3005** Field Botany
**BOT 3462** Plant Physiology Laboratory
**BOT 3463** Plant Physiology

**CHEM 1314** General Chemistry (LN)
**CHEM 1515** General Chemistry (LN)
**CHEM 2113** Principles of Analytical Chemistry
**CHEM 2122** Quantitative Analysis Laboratory
**CHEM 3015** The Chemistry of Organic Compounds
**CHEM 3053** Organic Chemistry
**CHEM 3112** Organic Chemistry Lab
**CHEM 3153** Organic Chemistry
**CHEM 3353** Descriptive Inorganic Chemistry
**CHEM 3433** Physical Chemistry I
**CHEM 3520** Physico-Chemical Measurements
**CHEM 3553** Physical Chemistry II
**CHEM 4020** Modern Methods of Chemical Analysis
**CHEM 4320** Chemical and Spectrometric Identification of Organic Compounds

**ENGL 1113** Composition I
**ENGL 1213** Composition II
**ENGL 1313** Critical Analysis and Writing I
**ENGL 1413** Critical Analysis and Writing II
**ENGL 3323** Technical Writing
### Undergraduate Courses Listed in the 3 CASNR Pre-Vet Options

- **ENTO 2993** Introduction to Entomology (LN)
- **ENTO 3003** Livestock Entomology
- **ENTO 3044** Insect Physiology
- **ENTO 4854** Medical and Veterinary Entomology

- **ENVR 1113** Elements of Environmental Science

- **FDSC 1133** Fundamentals of Food Science
- **FDSC 3133** Plant Sanitation for Food Processing Operations
- **FDSC 3154** Food Microbiology
- **FDSC 3333** Meat Science
- **FDSC 3603** Processing Dairy Foods
- **FDSC 4763** Analysis of Food Products

- **GEOG 4343** Geographic Information Systems: Resource Management Applications

- **HIST 1103** Survey of American History
- **HIST 1483** American History to 1865
- **HIST 1493** American History Since 1865

- **HORT 1013** Principles of Horticultural Science (LN)

- **LA 1013** Introduction to Landscape Architecture and Landscape Management

- **MATH 1513** College Algebra (A)
- **MATH 1613** Trigonometry (A)
- **MATH 2103** Business Calculus (A)
- **MATH 2144** Calculus I (A)
- **MATH 2153** Calculus II (A)

- **MICR 2123** Introduction to Microbiology
- **MICR 2132** Introduction to Microbiology Laboratory
- **MICR 3033** Cell and Molecular Biology
- **MICR 3143** Medical Mycology
- **MICR 3154** Food Microbiology
- **MICR 3223** Advanced Microbiology
- **MICR 3253** Immunology
- **MICR 4012** Molecular Microbiology Laboratory I
- **MICR 4052** Pathogenic Microbiology Lab
- **MICR 4053** Pathogenic Microbiology
- **MICR 4112** Molecular Microbiology Laboratory II
- **MICR 4123** Virology
- **MICR 4133** Molecular and Microbial Genetics
- **MICR 4203** Bioinformatics
- **MICR 4233** Advanced Cell and Molecular Biology
- **MICR 4253** Concepts in Medical Genetics
- **MICR 4263** Microbial Genetics: from Genes to Genomes
- **MICR 4323** Biological Energy Transduction
- **MICR 4423** Bacterial Cell Walls

- **NREM 1012** Introduction to Natural Resource Ecology and Management
- **NREM 1014** Introduction to Natural History (LN)
- **NREM 1113** Elements of Forestry
- **NREM 2013** Ecology of Natural Resources
- **NREM 3012** Applied Ecology Laboratory
Undergraduate Courses Listed in the 3 CASNR Pre-Vet Options

**NREM 3013** Applied Ecology and Conservation
**NREM 3083** Geospatial Technologies for Natural Resources
**NREM 3101** Forest Resource Field Studies
**NREM 3103** Natural Resource Field Studies
**NREM 3224** Silviculture
**NREM 3502** Wildlife Law Enforcement
**NREM 3503** Principles of Wildlife Ecology and Management
**NREM 3613** Principles of Rangeland Management
**NREM 3713** Wildland Fire Ecology and Management
**NREM 4001** Issues In Global Change
**NREM 4023** Restoration Ecology
**NREM 4033** Ecology Of Invasive Species
**NREM 4043** Natural Resource Administration and Policy
**NREM 4093** Natural Resources, People and Sustainable Development (I)
**NREM 4403** Wetland Ecology and Management
**NREM 4414** Fisheries Management
**NREM 4424** Fisheries Techniques
**NREM 4452** Pond Management
**NREM 4453** Aquaculture
**NREM 4464** Ornithology
**NREM 4473** Global Issues of Water and Ecosystem Management
**NREM 4524** Wildlife Management Techniques
**NREM 4533** Wildlife Management for Game Species
**NREM 4543** Wildlife Management for Biodiversity
**NREM 4613** Rangeland Resources Planning
**NREM 4783** Prescribed Fire
**NREM 4793** Advanced Prescribed Fire
**NREM 4960** Undergraduate Internship
**NREM 4980** Undergraduate Research
**NREM 4990** Special Topics in Natural Resource Ecology and Management

**NSCI 4123** Human Nutrition and Metabolism I

**PHYS 1114** General Physics (LN)
**PHYS 1214** General Physics (LN)
**PHYS 2014** General Physics (LN)
**PHYS 2114** General Physics (LN)
**PHYS 4313** Molecular Biophysics

**PLNT 1213** Introduction to Plant and Soil Systems
**PLNT 3554** Plant Genetics and Biotechnology

**POLS 1113** American Government

**SOIL 1113** Land, Life and the Environment (N)
**SOIL 2124** Fundamentals of Soil Science (N)

**SPCH 2713** Introduction to Speech Communication (S)
**SPCH 3733** Elements of Persuasion (S)

**STAT 2013** Elementary Statistics (A)
**STAT 2023** Elementary Statistics for Business and Economics (A)
**STAT 4013** Statistical Methods I (A)