

SNRS Faculty Meeting | September 9<sup>th</sup>, 2019

1:00 pm | Hultz 272

Attendees: Caley, Frank, Jack, Joe, Christina, Aaron, Deirdre, Marion, Nate, Ryan, Tom, Devan, Torre, Stephen, David H., Amit, Shawn,

Representatives: Nathan Derby, Jasmine Cutter

Admins: Diane, Jacinda, Angela

1. Announcements

a. Safety office update

i. Results of a failed state inspection has implemented new rules across campus

1. New Hazardous Waste Regulations and new training requirements
2. Make sure all of those working in your lab are trained by October 1<sup>st</sup>
3. Let Angela know if you have students who are not on campus right now and will need lab safety training so we can coordinate with the safety office
4. Follow-up with safety office regarding REC & AES regarding whether or not follow same waste and training procedures

b. AES Equipment and GRA RFPs

i. Requests for proposals (RFPs) are being finalized and will be out soon to request funds for new equipment or GRAs

ii. New Preference System involved

1. For both RFPs preference will be given to faculty who are involved with REC collaboration or who are willing to propose an additional project to enhance SNRS teaching. Examples would include taking extra teaching responsibility, modifying an existing course, or putting a current course online.

c. Hastings Hall

i. HR Lease in Bison Block is running out in 2020

1. Hastings is identified as new location for HR

- a. Would require herbarium, student cubicles, collections, and research space to move

2. Hultz could potentially accommodate some space for student cubicles, herbarium, and collections

- a. Morrill Hall and/or Ladd Hall may have some space that would be made available for SNRS use
- b. Lab currently occupied by ABEN faculty in Hultz could potentially be converted to pollinator lab

d. Post-tenure Review

i. A Post-tenure review process is now in place and required as part of the PTE process of SNRS, CAFSNR, and NDSU.

1. The updated SNRS PTE guidelines outlines the procedure and all procedures are in line with the post-tenure review process outlined in CAFSNR and NDSU guidelines.

2. Faculty are expected to be reviewed as part of the post-tenure review process every five years after the faculty is tenured.
  3. Frank will start this process for our full faculty members, potentially either doing all the reviews this Fall or split over the next few years
  4. The review will consist of the last five annual reviews and a summary review document that Frank will create. The document will highlight the faculty's impacts and possibly their future goals.
    - a. Hoping to start in January, but no official timeline at this point.
- e. Leah Position
- i. Replacement of Leah was approved at the college level, but not approved at Provost level
    1. Position was created to assist with the SOILS 210 lab sections as well as assist with MNRM
    2. Additional plans are being created for SOILS 210 to deal with this change.
2. SNRS Undergraduate Curriculum
- a. One overall degree with 6 undergraduate emphasis areas
    - i. All emphases will currently fall under NRM program
      1. NRM name may change in the future
    - ii. Additional minor changes are expected in the near future.
      1. For example, ENT 741 will be moved to an undergraduate level course
      2. Additional name changes will be discussed and submitted
      3. Possible changes to prefixes will also be discussed.
    - iii. There has been talk with Animal Sciences and Biological Sciences about encompassing their courses into some of these emphases, and receiving support from them
      1. Animal Sciences has supported changes, meeting set up with Biological Sciences to get their support.
  - b. Vote to approve the 6 emphasis areas (more than half of faculty were in attendance, so quorum was met)
    - i. Devan made a motion to table the voting
    - ii. Aaron second the motion to table the voting
    - iii. Frank called 5 minute discussion regarding the changes
    - iv. Motion to table the voting failed
  - c. Jack made a move to approve changes and implement the 6 new emphasis areas
    - i. Shawn second Jack's motion to approve changes
      1. Motion carried to approve undergraduate curriculum
      2. Undergraduate curriculum changes passed

Adjourned

# Name TBD

**Emphasis: Entomology**

**Bachelor of Science Degree**

## Sample Plan of Study

- Plan of studies will vary for each student depending on start year, individual goals, applicable transfer credit, and course availability.

<i>First Year</i>			
Fall	Credits	Spring	Credits
ENGL 110 - <i>College Comp. I</i>	3	BIOL 151 – <i>General Biology II</i>	3
BIOL 150 – <i>General Biology I</i>	3	BIOL 151L – <i>General Biology II Lab.</i>	1
BIOL 150L – <i>General Biology I Lab.</i>	1	ENGL 120 – <i>College Comp. II</i>	3
NRM 150 – <i>Major Introduction</i>	1	Hum. & Fine Arts Elective	3
NRM 225 (G) – <i>Natural Resources &amp; Agrosystems</i>	3	Math 103 – <i>College Algebra</i>	3
RNG 136 – <i>Intro to Range Management</i>	3	Wellness Elective	2
	Total 14		Total 15
<i>Second Year</i>			
CHEM 121 – <i>General Chemistry</i>	3	BIOL 364 – <i>General Ecology</i>	3
CHEM 121L – <i>General Chemistry I Lab</i>	1	EMGT 101 or POLS Elective (SBS)	3
COMM 110 – <i>Fund. Of Public Speaking</i>	3	PLSC 110 – <i>World Food Crops</i>	3
ECON 201(G) (SBS) - <i>Principles of Micro.</i>	3	SOIL 210 – <i>Intro. to Soil Science</i>	3
ENT 210 – <i>Insects, Humans &amp; Environment</i>	3	STATS 330 - <i>Intro. Statistics</i>	3
RNG 213 - <i>Rangeland Sampling Techniq.</i>	3		
	Total 16		Total 15
<i>Third Year</i>			
Additional credits to reach 120	3	ENT 431 (spring, odd) – <i>Principles of Integrated Pest Management</i>	3
ENGL 321, 324, or 459	3	ENT 470 (spring, odd) – <i>Insect Ecology</i>	3
ENT 350 – <i>General Entomology</i>	3	NRM 421 - <i>Environmental Outreach Methods</i>	3
PHIL 215(D) or 225 (H&FA) - <i>Env Ethics</i>	3	RNG 452 or GEOG 455 - <i>GIS</i>	3
PLSC elective (200, 300, 400)	3	SOIL 351 (spring, odd) – <i>Soil Ecology</i>	3
	Total 15		Total 15
<i>Fourth Year</i>			
BIOL 475 – <i>Conservation Biology</i>	3	BIOL 380, 460, or RNG 450	3
BIOL 450 (fall, odd) – <i>Invertebrate Zoo.</i>	3	Emphasis Electives (CAFSNR or BIOL 300, 400)	3
Emphasis Electives (CAFSNR or BIOL 300, 400)	3	Emphasis Electives (CAFSNR or BIOL 300, 400)	3
ENT 741 (make 400/600) – <i>Insect Plant Interactions</i>	3	Emphasis Electives (CAFSNR or BIOL 300, 400)	3
PLSC Elective (200, 300, 400)	3	NRM/RNG/SOIL 462 – <i>Rangeland Planning Analysis (Capstone)</i>	3
	Total 15		Total 15

**Total credits to graduate: 120**

Gen Ed requirements for Category D (Cultural Diversity) and G (Global Perspectives) can be fulfilled by taking approved courses that also qualify for other Gen Ed or curriculum requirements.

# Name TBD

**Emphasis: Environmental Sustainability and Outreach**

## Bachelor of Science Degree

### Sample Plan of Study

- Plan of studies will vary for each student depending on start year, individual goals, applicable transfer credit, and course availability.

<i>First Year</i>			
Fall	Credits	Spring	Credits
BIOL 150 – <i>General Biology I</i>	3	BIOL 151 – <i>General Biology II</i>	3
BIOL 150L – <i>General Biology I Lab.</i>	1	BIOL 151L – <i>General Biology II Lab</i>	1
ENGL 110 - <i>College Comp. I</i>	3	ENGL 120 – <i>College Comp. II</i>	3
NRM 150 – <i>Major Introduction</i>	1	Hum. & Fine Arts Elective	3
NRM 225 (G) – <i>Natural Resources &amp; Agrosystems</i>	3	Math 103 – <i>College Algebra</i>	3
RNG 136 – <i>Intro to Range Management</i>	3	Wellness Elective	2
	Total 14		Total 15
<i>Second Year</i>			
CHEM 121 – <i>General Chemistry</i>	3	EMGT 101 or POLS Elective (SBS)	3
CHEM 121L – <i>General Chemistry I Lab</i>	1	Emphasis Area Elective	3
COMM 110 – <i>Fund. Of Public Speaking</i>	3	Emphasis Area Elective	3
ECON 201(G) (SBS) - <i>Principles of Micro.</i>	3	SOIL 210 – <i>Intro. to Soil Science</i>	3
ENT 210 – <i>Insects, Humans &amp; Environment</i>	3	STATS 330 – <i>Intro. Statistics</i>	3
RNG 213 - <i>Rangeland Sampling Techniq.</i>	3		
	Total 16		Total 15
<i>Third Year</i>			
Emphasis Area Elective	3	BIOL 364 – <i>General Ecology</i>	3
ENGL 321, 324, or 459	3	HIST 434 or 435	3
NRM 431 – <i>NEPA &amp; Environ. Impact Assessment.</i>	3	NRM 421 – <i>Environmental Outreach Methods</i>	3
PHIL 215(D) or 225 (H&FA)	3	POLS/SOC/EMGT 200+	3
POLS/SOC/EMGT 200+	3	RNG 452 or GEOG 455 - <i>GIS</i>	3
	Total 15		Total 15
<i>Fourth Year</i>			
ECON 481 – <i>Natural Resource Econ.</i>	3	Emphasis Area Elective	3
Emphasis Area Elective	3	Emphasis Area Elective	3
Emphasis Area Elective	3	Emphasis Area Elective	3
NRM 401 (fall even) – <i>Urban-Ecosystem Mgmt</i>	3	Emphasis Area elective	3
NRM 420 - <i>Scenarios in NRM</i>		NRM/RNG/SOIL 462 - <i>Rangeland Planning Analysis</i>	3
	Total 15		Total 15

### Total credits to graduate: 120

Gen Ed requirements for Category D (Cultural Diversity) and G (Global Perspectives) can be fulfilled by taking approved courses that also qualify for other Gen Ed or curriculum requirements.

# Name TBD

## Emphasis: Rangeland Ecology Bachelor of Science Degree

### Sample Plan of Study

- Plan of studies will vary for each student depending on start year, individual goals, applicable transfer credit, and course availability.

<i>First Year</i>			
Fall	Credits	Spring	Credits
BIOL 150 – <i>General Biology I</i>	3	ANSC 114 – <i>Intro. Animal Science</i>	3
BIOL 150L – <i>General Biology I Lab.</i>	1	BIOL 151 – <i>General Biology II</i>	3
ENGL 110 - <i>College Comp. I</i>	3	BIOL 151L – <i>General Biology II Lab</i>	1
NRM 150 – <i>Major Introduction</i>	1	ENGL 120 – <i>College Comp. II</i>	3
NRM 225 (G) – <i>Natural Resources &amp; Agrosystems</i>	3	Hum. & Fine Arts Elective	3
RNG 136 – <i>Intro to Range Management</i>	3	Math 103 – <i>College Algebra</i>	3
	Total 14		Total 16
<i>Second Year</i>			
CHEM 121 – <i>General Chemistry I</i>	3	EMGT 101 or POLS Elective (SBS)	3
CHEM 121L – <i>General Chemistry I Lab</i>	1	SOIL 210 - <i>Intro. to Soil Science</i>	3
COMM 110 – <i>Fund. Of Public Speaking</i>	3	SOIL 217 - <i>Intro. Meteorology &amp; Climatology</i>	3
ECON 201(G) (SBS) - <i>Principles of Micro.</i>	3	STATS 330 - <i>Intro. Statistics</i>	3
ENT 210 – <i>Insects, Humans &amp; Environment</i>	3	Wellness Elective	2
RNG 213 - <i>Rangeland Sampling Techniq.</i>	3		
	Total 16		Total 14
<i>Third Year</i>			
BIOL 475 or 476	3	BIOL 364 – <i>General Ecology</i>	3
BIOL 460 - <i>Plant Ecology</i>	3	BIOL 452, 456, 458, or 454	3
ENGL 321, 324, or 459	3	NRM 421 – <i>Environmental Outreach Methods</i>	3
PHIL 215(D) or 225 (H&FA)	3	PLSC 380 – <i>Principles of Plant Physiology</i>	3
RNG 456 (fall even) – <i>Range Habitat Mgmt</i>	3	RNG 452 or GEOG 455 - <i>GIS</i>	3
	Total 15		Total 15
<i>Fourth Year</i>			
NRM 431 – <i>NEPA &amp; Environ. Impact Assessment</i>	3	NRM/RNG/SOIL 462 - <i>Rangeland Planning Analysis (Capstone)</i>	3
RNG 453 (spring) or 454 (fall)	3	RNG 451 (spring, even) – <i>Ecology of Fire-Dependent Ecosystems</i>	3
RNG 458 (fall, odd) – <i>Grazing Ecology</i>	3	RNG 450 – <i>Range Plants</i>	3
SNRS Elective	3	SNRS Elective	3
SOIL 351 (fall, even), 410 (spring) or 444 (fall)	3	SNRS Elective	3
	Total 15		Total 15

### Total credits to graduate: 120

Gen Ed requirements for Category D (Cultural Diversity) and G (Global Perspectives) can be fulfilled by taking approved courses that also qualify for other Gen Ed or curriculum requirements

# Name TBD

**Emphasis: Rangeland Livestock Production**

**Bachelor of Science Degree**

## Sample Plan of Study

- Plan of studies will vary for each student depending on start year, individual goals, applicable transfer credit, and course availability.

<i>First Year</i>			
Fall	Credits	Spring	Credits
BIOL 150 – <i>General Biology I</i>	3	BIOL 151 – <i>General Biology II</i>	3
BIOL 150L – <i>General Biology I Lab.</i>	1	BIOL 151L – <i>General Biology II Lab</i>	1
ENGL 110 - <i>College Comp. I</i>	3	ENGL 120 – <i>College Comp. II</i>	3
NRM 150 – <i>Major Introduction</i>	1	Hum. & Fine Arts Elective	3
NRM 225 (G) – <i>Natural Resources &amp; Agrosystems</i>	3	Math 103 – <i>College Algebra</i>	3
RNG 136 – <i>Intro to Range Management</i>	3	Wellness Elective	2
	Total 14		Total 15
<i>Second Year</i>			
CHEM 121 – <i>General Chemistry I</i>	3	ANSC 114 - <i>Intro. Animal Science</i>	3
CHEM 121L – <i>General Chemistry I Lab</i>	1	ANSC 223 – <i>Intro. Animal Nutrition</i>	3
COMM 110 – <i>Fund. of Public Speaking</i>	3	EMGT 101 or POLS Elective (SBS)	3
ECON 201(G) (SBS) - <i>Principles of Micro.</i>	3	SOIL 210 - <i>Intro. to Soil Science</i>	3
ENT 210 – <i>Insects, Humans &amp; Environment</i>	3	STATS 330- <i>Intro. Statistics</i>	3
RNG 213 - <i>Rangeland Sampling Techniq</i>	3		
	Total 16		Total 15
<i>Third Year</i>			
Additional credits to meet 120 (any)	3	NRM 421 - <i>Environmental Outreach Methods</i>	3
ANSC 220 – <i>Livestock Production</i>	3	PLSC 315 – <i>Genetics</i>	3
ENGL 321, 324, or 459	3	PLSC 323 – <i>Principles of Weed Science</i>	3
PHIL 215(D) or 225 (H&FA)	3	RNG 452 or GEOG 455- <i>GIS</i>	3
RNG 456 (fall, even) – <i>Range Habitat Manag.</i>	3	SOIL 217 – <i>Intro. Meteorology &amp; Climatology</i>	3
	Total 15		Total 15
<i>Fourth Year</i>			
ANSC 357 – <i>Animal Genetics</i>	3	NRM/RNG/SOIL 462 - <i>Rangeland Planning Analysis</i>	3
NRM 431 – <i>NEPA &amp; Environ. Impact Assessment</i>	3	RNG 450 – <i>Range Plants</i>	3
PLSC 320 – <i>Principles of Forage Production</i>	3	SNRS Elective	3
RNG 458 (fall, odd) – <i>Grazing Ecology</i>	3	SNRS Elective	3
SOIL 351, 410, or 444	3	SNRS Elective	3
	Total 15		Total 15

**Total credits to graduate: 120**

Gen Ed requirements for Category D (Cultural Diversity) and G (Global Perspectives) can be fulfilled by taking approved courses that also qualify for other Gen Ed or curriculum requirements.

Name TBD

Emphasis: Soil Science

## Bachelor of Science Degree

### Sample Plan of Study

- Plan of studies will vary for each student depending on start year, individual goals, applicable transfer credit, and course availability.

<i>First Year</i>			
Fall	Credits	Spring	Credits
BIOL 150 – <i>General Biology I</i>	3	BIOL 151 – <i>General Biology II</i>	3
BIOL 150L – <i>General Biology I Lab.</i>	1	BIOL 151L – <i>General Biology II</i>	1
ENGL 110 - <i>College Comp. I</i>	3	ENGL 120 – <i>College Comp. II</i>	3
NRM 150 – <i>Major Introduction</i>	1	Hum. & Fine Arts Elective	3
NRM 225 (G) – <i>Natural Resources &amp; Agrosystems</i>	3	Math 103 – <i>College Algebra</i>	3
RNG 136 – <i>Intro to Range Management</i>	3	Wellness Elective	2
	Total 14		Total 15
<i>Second Year</i>			
CHEM 121 – <i>General Chemistry I</i>	3	PHYS 211 – <i>College Physics I</i>	3
CHEM 121L – <i>General Chemistry I Lab</i>	1	PHYS 211L – <i>College Physics I Lab</i>	1
COMM 110 – <i>Fund. Of Public Speaking</i>	3	PLSC 110 – <i>World Food Crops</i>	3
GEOL 105 – <i>Physical Geology</i>	3	SOIL 210 – <i>Intro. to Soil Science</i>	3
GEOL 105L – <i>Physical Geology lab</i>	1	SOIL 217 – <i>Intro. Meteorology &amp; Climatology</i>	3
MATH 105 – <i>Trigonometry</i>	3	STATS 330 - <i>Intro. Statistics</i>	3
	Total 14		Total 16
<i>Third Year</i>			
ECON 201(G) (SBS) - <i>Principles of Micro.</i>	3	BIOC 260 or CHEM 240 or MICR 202 & 202L	3
ENGL 321, 324, or 459	3	EMGT 101 or POLS Elective (SBS)	3
ENT 210 – <i>Insects, Humans &amp; Environment</i>	3	NRM 421 – <i>Environmental Outreach Methods</i>	3
PHIL 215(D) or 225 (H&FA)	3	RNG 452 or GEOG 455 - <i>GIS</i>	3
RNG 213 - <i>Rangeland Sampling Techniq.</i>	3	SOIL 351 – <i>Soil Ecology</i>	3
	Total 15		Total 15
<i>Fourth Year</i>			
Ag. Elective	4	Ag. Elective	3
PLSC 380 – <i>Principles of Plant Physiology</i>	3	NRM/RNG/SOIL 462 - <i>Rangeland Planning Analysis (Capstone)</i>	3
SOIL 433 (fall odd) – <i>Soil Ecohydrology &amp; Physics</i>	3	PLSC 225 or RNG 300/400 Elective	3
SOIL 444 – <i>Soil Genesis &amp; Survey</i>	3	SOIL 410 – <i>Soils &amp; Land Use</i>	3
SOIL/NRM 454 – <i>Wetland Resources Mgt</i>	3	SOIL 322 – <i>Soil Fertility &amp; Fertilizers</i>	3
	Total 16		Total 15

**Total credits to graduate: 120;**

Gen Ed requirements for Category D (Cultural Diversity) and G (Global Perspectives) can be fulfilled by taking approved courses that also qualify for other Gen Ed or curriculum requirements.

# Name TBD

**Emphasis: Water, Wildlife, and Habitat Management**

**Bachelor of Science Degree**

## Sample Plan of Study

- Plan of studies will vary for each student depending on start year, individual goals, applicable transfer credit, and course availability.

<i>First Year</i>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BIOL 150 – <i>General Biology I</i>	3	BIOL 151 – <i>General Biology II</i>	3
BIOL 150L – <i>General Biology I Lab.</i>	1	BIOL 151L – <i>General Biology II Lab</i>	1
ENGL 110 - <i>College Comp. I</i>	3	ENGL 120 – <i>College Comp. II</i>	3
NRM 150 – <i>Major Introduction</i>	1	Hum. & Fine Arts Elective	3
NRM 225 (G) – <i>Natural Resources &amp; Agrosystems</i>	3	Math 103 – <i>College Algebra</i>	3
RNG 136 – <i>Intro to Range Management</i>	3	Wellness Elective	2
	<b>Total 14</b>		<b>Total 15</b>
<i>Second Year</i>			
CHEM 121 – <i>General Chemistry I</i>	3	BIOL 364 – <i>General Ecology</i>	3
CHEM 121L – <i>General Chemistry I Lab</i>	1	EMGT 101 or POLS Elective (SBS)	3
COMM 110 – <i>Fund. Of Public Speaking</i>	3	NRM 264 – <i>Natural Resource Mang. Systems</i>	3
ECON 201(G) (SBS) - <i>Principles of Micro.</i>	3	SOIL 210 – <i>Intro. to Soil Science</i>	3
ENT 210 – <i>Insects, Humans &amp; Environment</i>	3	STATS 330 – <i>Intro. Statistics</i>	3
RNG 213 - <i>Rangeland Sampling Techniq.</i>	3		
	<b>Total 16</b>		<b>Total 15</b>
<i>Third Year</i>			
BIOL 475 or 476	3	HIST 434 or 435 - <i>US or World Env. History</i>	3
ECON 481 – <i>Natural Resource Economics</i>	3	NRM 402, 454 or SOIL 410	3
ENGL 321, 324, or 459	3	NRM 421 – <i>Environmental Outreach Methods</i>	3
NRM 431 – <i>National Environmental Policy Act &amp; Environmental Impact Assessments</i>	3	NRM 453 – <i>Rangeland Resources Watershed Mgmt</i>	3
PHIL 215(D) or 225 (H&FA)	3	RNG 452 or GEOG 455 - GIS	3
	<b>Total 15</b>		<b>Total 15</b>
<i>Fourth Year</i>			
Emphasis Area Credits	3	Emphasis Area Credits	3
Emphasis Area Credits	3	Emphasis Area Credits	3
Emphasis Area Credits	3	Emphasis Area Credits	3
Emphasis Area Credits	3	Emphasis Area Credits	3
Emphasis Area Credits	3	NRM/RNG/SOIL 462 - <i>Rangeland Planning Analysis (Capstone)</i>	3
	<b>Total 15</b>		<b>Total 15</b>

**Total credits to graduate: 120**

Gen Ed requirements for Category D (Cultural Diversity) and G (Global Perspectives) can be fulfilled by taking approved courses that also qualify for other Gen Ed or curriculum requirements.



## ESO Emphasis

COMM 112	Understanding Media and Social Change
COMM 133	Introduction to Agricultural Communication
COMM 316	Conflict Communication
ECON 482	Environmental Economics
EMGT 101	Emergencies, Disasters, and Catastrophes
EMGT 261	Disaster Preparedness
EMGT 262	Disaster Mitigation
EMGT 263	Disaster Response
EMGT 264	Disaster Recovery
EMGT 410	Comprehensive Emergency Management Planning
EMGT 481	Disaster Analysis
ENT 350	General Entomology
GEO 201	The Geology of Climate Change and Energy
GEO 219	Oceanography
GEO 300	Environmental Geology
GEO 412	Geomorphology
GEO 414	Hydrogeology
GEO 460	Biogeochemistry
GEOG 470	Remote Sensing
GEOG 465	Remote Sensing of the Environment
NRM 322	Environmental Law and Policy
NRM 421	Environmental Outreach Methods
NRM 453	Rangeland Resource/Watershed Management
PLSC 110	World Food Crops
PLSC 219	Introduction to Prairie & Community Forestry
POLS 115	American Government
POLS 215	Problems and Policies In American Government
POLS 442	Global Policy Issues
RNG 451	Ecology of Fire-Dependent Ecosystems
RNG 456	Range Habitat Management
RNG 458	Grazing Ecology
RNG 460	Plant Ecology
SOC 110	Introduction to Sociology
SOC 115	Social Problems
SOC 340	Social Research Methods
SOC 404	Community Assessment
SOC 405	Community Development
SOC 235	Cultural Diversity
SOC 443	International Disasters
SOC 431	Environmental Sociology
SOC 439	Social Change
SOIL 217	Introduction to Meteorology & Climatology

**PLSC Electives 200, 300, or 400 6 credits**

**PLSC 210** Horticulture Science (F)

PLSC 219 Introduction to Prairie and Community Forestry

**PLSC 315** Genetics (F, S)

**PLSC 323** Principles of Weed Science (S)

**PLSC 350** Sugarbeet Production (F/2)

**PLSC 355** Woody Landscape Plants (F)

**PLSC 365** Herbaceous Landscape Plants (F/O/2)

**PLSC 370** Landscape Management (F/O)

**PLSC 375** Turfgrass Management (F/O)

**PLSC 412** Nursery Production and Management (S/O)

**PLSC 415** Vegetable Crop Production (S/O)

**PLSC 416** Fruit Crop Production (F/E)

**PLSC 422** Greenhouse Production and Management (S/E)

**PLSC 425** Potato Science (F/O/2)

**PLSC 431** Intermediate Genetics (F)

**PLSC 433** Weed Biology and Ecology (S/E)

**PLSC 455** Cropping Systems: An Integrated Approach (S)

**Emphasis Electives (CAFSNR or Bio 300 or 400) \*\* PLSC 300 or 400 can also be used here\*\***

BIOL 359 Evolution

BIOL 463 Animal Behavior

BIOL 476 Wildlife Ecology and Management

MICR 202 Introductory Microbiology

MICR 452 Microbial Ecology

MICR 463 Clinical Parasitology

NRM 401 Urban Ecosystems

NRM 402 Rivers and Streams

NRM 420 Sustainable Scenarios

NRM 431 NEPA

NRM 453 Watersheds

NRM 454 Wetlands

PLSC 315 Genetics

RNG 450 Range Plants

RNG 460 Plant Ecology

SOIL 410 Soils and Land Use

## WWE Emphasis

BIOL 124	Environmental Science
BIOL 124L	Environmental Science Laboratory
BIOL 252	Plant and Animal Diversity
BIOL 271	Wildlife Ecology and Conservation: An Undergraduate Research Course
BIOL 359	Evolution
BIOL 414	Plant Systematics
BIOL 454	Herpetology
BIOL 460	Animal Physiology
BIOL 461/RNG 460	Plant Ecology
BIOL 462	Physiological Ecology
BIOL 463	Animal Behavior
BIOL 472	Structure and Diversity of Plants and Fungi
BIOL 477	Wildlife and Fisheries Management Techniques
BIOL 480	Ecotoxicology
BIOL 481	Wetland Science
BIOL 450	Invertebrate Zoology
BIOL 452	Ichthyology
BIOL 456	Ornithology
BIOL 458	Mammalogy
ENT 350	General Entomology
MICR 202 and Lab	Introductory Microbiology
NRM 401	Urban-Ecosystem Management
NRM 420	Sustainable Scenarios in Natural Resources Management
PLSC 219	Introduction to Prairie & Community Forestry
PLSC 323	Principles of Weed Science
PLSC 355	Woody Landscape Plants
PLSC/BOT/ZOO 315	Genetics
PLSC/BOT/ZOO 315L	Genetics lab
RNG 451	Ecology of Fire-Dependent Ecosystems
RNG 456	Range Habitat Management
RNG 458	Grazing Ecology
RNG/BOT 450	Range Plants
SOIL 217	Introduction to Meteorology & Climatology
SOIL 351	Soil Ecology
SOIL 433	Soil Ecohydrology and Physics
SOIL 410	Soils and Land Use

# Natural Resources Management (exploring options)

## Bachelor of Science Degree

### Sample Plan of Study – Degree Overview

- Plan of studies will vary for each student depending on start year, individual goals, applicable transfer credit, and course availability.
- By Second year student should decide on Emphasis Area (see back) which will help determine classes for “Emphasis Area Credits”

<i>First Year</i>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BIOL 150 – <i>General Biology I</i>	3	BIOL 151 – <i>General Biology II</i>	3
BIOL 150L – <i>General Biology I Lab.</i>	1	BIOL 151L – <i>General Biology II Lab.</i>	1
ENGL 110 - <i>College Comp. I</i>	4	ENGL 120 – <i>College Comp. II</i>	3
NRM 150 – <i>NRM Orientation</i>	1	Hum. & Fine Arts Elective	3
NRM 225 (G) – <i>Natural Resources &amp; Agrosystems</i>	3	Math 103 – <i>College Algebra</i>	3
RNG 136 – <i>Intro to Range Management</i>	3	Wellness Elective	2
	<b>Total 15</b>		<b>Total 15</b>
<i>Second Year</i>			
CHEM 121 – <i>General Chemistry I</i>	3	EMGT 101 or POLS or SOC Elective (SBS)	3
CHEM 121L – <i>General Chemistry I Lab</i>	1	Emphasis Area Credits	3
COMM 110 – <i>Fund. of Public Speaking</i>	3	Emphasis Area Credits	3
SOIL 210 – <i>Intro. to Soil Science</i>	3	ECON 201(G) (SBS) - <i>Principles of Micro.</i>	3
ENT 210 – <i>Insects, Humans &amp; Environment</i>	3	STATS 330 - <i>Intro. Statistics</i>	3
RNG 213 - <i>Rangeland Sampling Techniq.</i>	3		
	<b>Total 16</b>		<b>Total 15</b>
<i>Third Year</i>			
ENGL 321, 324, or 459	3	Emphasis Area Credits	3
Emphasis Area Credits	3	Emphasis Area Credits	3
Emphasis Area Credits	3	Emphasis Area Credits	3
Emphasis Area Credits	3	NRM 421 – <i>Env. Outreach Methods</i>	3
PHIL 215(D) or 225 (H&FA) – <i>Env. Ethics</i>	3	RNG 452 or GEOG 455 - <i>GIS</i>	3
	<b>Total 15</b>		<b>Total 15</b>
<i>Fourth Year</i>			
Emphasis Area Credits	3	Emphasis Area Credits	3
Emphasis Area Credits	3	Emphasis Area Credits	3
Emphasis Area Credits	3	Emphasis Area Credits	3
Emphasis Area Credits	2	Emphasis Area Credits	3
Emphasis Area Credits	3	NRM/RNG/SOIL 462 – <i>Rangeland Planning &amp; Analysis (Capstone)</i>	3
	<b>Total 14</b>		<b>Total 15</b>

**Total credits to graduate: 120**

Gen Ed requirements for Category D (Cultural Diversity) and G (Global Perspectives) can be fulfilled by taking approved courses that also qualify for other Gen Ed or curriculum requirements.

<b>Water, Wildlife, and Environmental Management</b>		<b>Environmental Sustainability &amp; Outreach</b>	
Required 50 credits		Required 50 credits	
BIOL 364 – <i>General Ecology</i>	3	200 or higher POLS/SOC/EMGT	6
BIOL 475 OR 476	3	BIOL 364 – <i>General Ecology</i>	3
ECON 481 – <i>Natural Resource Economics</i>	3	ECON 481 – <i>Natural Resource Economics</i>	3
HIST 434 OR 435 – <i>US or World Env. History</i>	3	HIST 434 OR 435 – <i>US or World Env. History</i>	3
NRM 264 – <i>NRM Systems</i>	3	NRM 401 – <i>Urban Ecosystems</i>	3
NRM 402, 454, OR SOIL 410	3	NRM 420 – <i>Sustainable Scenarios</i>	3
NRM 431 – <i>NEPA and Env. Assessment</i>	3	NRM 431 – <i>NEPA and Env. Assessment</i>	3
NRM 453 - <i>Watersheds</i>	3	Required: 26 additional emphasis credits	26
Required: 26 additional emphasis credits	26		
<b>Rangeland Ecology</b>		<b>Rangeland Livestock Production</b>	
Required 50 credits		Required 48 Credits	
ANSC 114 – <i>Intro to Animal Science</i>	3	ANSC 114 – <i>Intro to Animal Science</i>	3
BIOL 364 – <i>General Ecology</i>	3	ANSC 220 – <i>Livestock Production</i>	3
BIOL 452, 454, 456, or 458	3	ANSC 223 – <i>Intro to Animal Nutrition</i>	3
RNG 460 – <i>Plant Ecology</i>	3	ANSC 357 – <i>Animal Genetics</i>	3
BIOL 475 or 476	3	NRM 431 – <i>NEPA and Env. Assessment</i>	3
NRM 431 – <i>NEPA and Env. Assessment</i>	3	PLSC 315 - <i>Genetics</i>	3
PLSC 380 – <i>Principles of Plant Physiology</i>	3	PLSC 320 – <i>Principles of Forage Production</i>	3
RNG 450 – <i>Range Plants</i>	3	PLSC 323 – <i>Principles of Weed Science</i>	3
RNG 451 – <i>Ecology of Fire-Dependent Ecosystems</i>	3	RNG 450 – <i>Range Plants</i>	3
NRM 453 or 454 – <i>Watersheds or Wetlands</i>	3	RNG 456 - <i>Range Habitat Management</i>	3
RNG 456 - <i>Range Habitat Management</i>	3	RNG 458 - <i>Grazing Ecology</i>	3
RNG 458 - <i>Grazing Ecology</i>	3	SOIL 217 – <i>Intro to Meteorology and Climatology</i>	3
SOIL 217 – <i>Intro to Meteorology and Climatology</i>	3	SOIL 351, 410, or 444	3
SOIL 351, 410, or 444	3	SNRS Electives	9
SNRS Electives	8		
<b>Soil Science</b>		<b>Entomology</b>	
Required 50 credits		Required 48 Credits	
AG Elective Credits	6	BIOL 364 – <i>General Ecology</i>	3
BIOC 260, CHEM 240, or MICRO 202 & 202L	3	RNG 460, 450 or PLSC 380	3
GEOL 105 – <i>Physical Geology</i>	3	BIOL 450 – <i>Invertebrate Zoology</i>	3
GEOL 105L – <i>Physical Geology Lab</i>	1	BIOL 475 – <i>Conservation Biology</i>	3
MATH 105 – <i>Trigonometry</i>	3	ENT 350 – <i>General Entomology</i>	3
PHYS 211 – <i>College Physics I</i>	3	ENT 431 – <i>Integrated Pest Management</i>	3
PHYS 211L – <i>College Physics I Lab</i>	1	ENT 470 – <i>Insect Ecology</i>	3
PLSC 110 – <i>World Food Crops</i>	3	PLSC 110 – <i>World Food Crops</i>	3
PLSC 225 or RNG 300/400 Elective	3	PLSC Electives (200, 300, or 400 level)	6
PLSC 380 – <i>Principles of Plant Physiology</i>	3	SOIL 351 – <i>Soil Ecology</i>	3
SOIL 217 – <i>Intro to Meteorology and Climatology</i>	3	Emphasis Electives (CAFSNR or BIOL 300 or 400 level)	15
SOIL 322 – <i>Soil Fertility and Fertilizers</i>	3		
SOIL 351 – <i>Soil Ecology</i>	3		
SOIL 410 – <i>Soils and Land Use</i>	3		
SOIL 433 – <i>Soil Ecohydrology and Physics</i>	3		

SOIL 444 – <i>Soil Genesis and Survey</i>	3
SOIL/NRM 454 – <i>Wetlands</i>	3