

Criterion: C- Number of Credits 7

Course Listing

BIOB 160N	Principles of Living Systems	4	F,SU
CHMY 121N	Intro to General Chemistry	3	F,S

**College of Forestry & Conserv Catalog Year: 2015-2016**

Degree Type: Bachelor of Science Level: Major Subject: **Ecological Restoration** Option: **Terrestrial**

Total Credits: 88 Cumulative GPA Required: 2.0

Lower Division Core

Category Name: Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 15

Course Listing

NRSM 121S	Nature of Montana	3	F
NRSM 200	Nat.Resource Professional Wrtg	3	F,S
NRSM 210N	Soils, Water and Climate	3	F
NRSM 265	Elements of Ecological Restora	3	F

Commentary: Can take WRIT 325 Science Writing (honors) in place of NRSM 200; Can take NRSM 170 Intern'l Environ Change OR NRSM 180 Careers in Natural Resources in place of NRSM 121S

Commentary: Lower Division Core

Category Name: Outside Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 31

Course Listing

BIOB 160N	Principles of Living Systems	4	F,SU
BIOB 260	Cellular and Molecular Biology	4	F,SU
BIOB 272	Genetics and Evolution	4	S
BIOO 105N	Introduction to Botany	3	S
CHMY 121N	Intro to General Chemistry	3	F,S
COMX 111A	Intro to Public Speaking	3	F,S,SU
M 162	Applied Calculus	4	F,S
STAT 216	Introduction to Statistics	4	F,S
WRIT 101	College Writing I	3	F,S,SU

Commentary: Can take FORS 201 Biometrics OR WILD 240 Into to Biostats in place of STAT 216; Can take THTR 120A Acting I in place of COMX 111A

Commentary: Upper Division Core

Category Name: Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 21

Course Listing

NRSM 344	Ecol. RestorationCapstone	5	
NRSM 385	Watershed Hydrology	3	F,S

NRSM 422	Nat Res Policy/Administration	3	F,S
NRSM 465	Restoration Ecology	3	
NRSM 489E	Ethics Forestry & Conservation	3	F
NRSM 494	Seminar in Ecol Restoration	1	S
NRSM 495	Ecological Restor Practicum	3 To 6	F,S,SU

Commentary: Can take NRSM 449E in place of NRSM 489E

Commentary: Upper Division Core

Category Name: Outside Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 9

Course Listing

BIOE 370	General Ecology	3	F,S
BIOE 447	Terrestrial Ecosystem Ecology	3	I
BIOO 335	Rocky Mountain Flora	3	S,SU

Commentary: Can take BIOE 448 terer. Plant Ecology OR FORS 330 Forest Ecology OR NRSM 462 Range Ecology

Commentary:

Upper Division Electives

Rule: Must take as least 9 credits

Criterion: C- Number of Credits 9

Course Listing

BIOE 342	Field Ecology	5	
BIOE 416	Alpine Ecology	3	
BIOE 447	Terrestrial Ecosystem Ecology	3	I
BIOE 448	Terrestrial Plant Ecology	4	F
BIOE 451	Landscape Ecology	3	
BIOE 458	Forest and Grassland Ecol	3	
BIOO 320	General Botany	5	S
BIOO 433	Plant Physiology	3	S
FORS 202	Forest Mensuration	3	S
FORS 250	Intro to GIS for Forest Mgt	3	F,S
FORS 330	Forest Ecology	3	F,S
FORS 333	Basic&Applied Fire Ecology	3	F
FORS 347	Multiple Resource Silviculture	3	S
GEO 228	Earth Surface Processes	2	
NRSM 408	Global Cycles and Climate	3	
NRSM 418	Ecosystem Climatology	3	

Commentary: No Double Dipping with CORE courses

Upper Division Electives

Category Name: Restoration Social Science Elective Courses Rule: Must take at least 3 credits

Criterion: C-

Course Listing            Number of Credits 3

ECNS 433	Economics of the Environment	3	I	
FORS 320	Forest Environmental Economics	3	F	
NRSM 379	Collab in Nat Res Decisions	3	S	
NRSM 426	Climate and Society	3	S	
NRSM 475	Environment & Development	3	S	

Commentary:

Degree Specific Writing

Rule: Must complete the following subcategories

Criterion:        Number of Credits 15

Course Listing Commentary:

Subcategory Name: Lower Division Writing Rule: must take the following courses

Criterion: C-    Number of Credits 6

Course Listing

NRSM 200	Nat.Resource Professional Wrtg	3	F,S	
WRIT 101	College Writing I	3	F,S	

Commentary:

Subcategory Name: Upper Division Writing Rule: Must take at least three courses

Criterion: C-    Number of Credits 9

Course Listing

BIOE 428	Freshwater Ecology	5	F	
FORS 330	Forest Ecology	3	F,S	
NRSM 379	Collab in Nat Res Decisions	3	S	
NRSM 444	Ecological RestorationCapstone	5	S	
NRSM 495	Ecological Restor Practicum	3 To 6	F,S,SU	
NRSM 499	Senior Thesis	1 To 3	I	

Commentary:

Degree Specific Mathematics

Category Name: Math requirement for major Rule: Must take all courses

Criterion: C-    Number of Credits 4

Course Listing

M 162	Applied Calculus	4	F,S	Commentary:
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Commentary:

Degree Specific Symbolic Systems Category Name: Symbolic Systems

Rule: Must take one of the following courses

Criterion: C-    Number of Credits 3-4

FORS 201	Forest Biometrics	3	F	
STAT 216	Introduction to Statistics	4	F,S	

WILD 240 Intro to Biostatistics 3 FE

Commentary:

Degree Specific Expressive Arts

Category Name: Expressive Arts Requirement for Major Rule: must take one of the following course

Criterion: C- Number of Credits 3

Course Listing

COMX 111A Intro to Public Speaking 3 F,S

THTR 120A Introduction to Acting I 3 F,S

Commentary:

Degree Specific Social Sciences Category Name: Social Sciences Rule: May take the below course

Criterion: C- Number of Credits 3

Course Listing

NRSM 121S Nature of Montana 3 F Commentary:

Commentary:

Degree Specific Ethical & Human Values

Category Name: Ethical & Human Values Elective within Major Rule: must take one of the following course

Criterion: C- Number of Credits 3

Course Listing

NRSM 449E Climate Change Ethics/Policy 3 F

NRSM 489E Ethics Forestry & Conservation 3 F

Commentary:

Degree Specific Natural Sciences

Rule: Must take all courses

Criterion: C- Number of Credits 7

Course Listing

BIOB 160N Principles of Living Systems 4 F,SU

CHMY 121N Intro to General Chemistry 3 F,S

## Forestry

In addition to special degree requirements listed previously, students selecting the BS Forestry degree must complete the following required courses or their equivalent, if transferred from another college or university.

Transference and equivalency will be determined by the University, College of Forestry and Conservation, and Forestry program. Electives may be taken at any time, keeping in mind these requirements as well as the University's General Education requirements for graduation.

### College of Forestry & Conserv Catalog Year: 2015-2016

Degree Type: Bachelor of Science Level: Major Subject: **Forestry** Option: **Forest Operations**

Total Credits: 82 Cumulative GPA Required: 2.0

Lower Division Core

Category Name: Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 22

Course Listing

FORS 201	Forest Biometrics	3	F
FORS 202	Forest Mensuration	3	S
FORS 240	Tree Biology	2	F,S
FORS 241N	Dendrology	3	F,S
FORS 250	Intro to GIS for Forest Mgt	3	F,S
NRSM 200	Nat.Resource Professional Wrtg	3	F,S
NRSM 210N	Soils, Water and Climate	3	F

Commentary: Lower Division Core

Category Name: Outside Major Courses Required Rule: Must take all courses

Criterion: C- Number of Credits 22-24

Course Listing

BIOB 160N	Principles of Living Systems	4	F
CHMY 121N	Intro to General Chemistry	3	F,S,SU
COMX 111A	Intro to Public Speaking	3	F,S,SU
ECNS 201S	Principles of Microeconomics	3	F,S
M 151	Precalculus	4	F,S,SU
M 162	Applied Calculus	4	F,S
WRIT 101	College Writing I	3	F,S,SU

Commentary: Can take THTR 120A Intro to acting in place of COMX 111A; Can take M 121 College Algebra AND M 122 College Trigonometry to satisfy M 151; Can take PHSX 205/206 College Physics I and Lab in place of M 162

Commentary: Upper Division Core

Category Name: Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 30

Course Listing

FORS 320	Forest Environmental Economics	3	F
FORS 330	Forest Ecology	3	F,S
FORS 340	Forest Product Manufacturing	2	F
FORS 341	Timber Harvesting & Roads	3	S
FORS 349	Practice of Silviculture	3	F
FORS 435	Advanced Timber Harvesting	2	F
FORS 436	Project Appraisal	3	
FORS 440	Forest Stand Management	3	F
NRSM 385	Watershed Hydrology	3	F,S
NRSM 422	Nat Res Policy/Administration	3	F,S

Commentary: Major Electives

Category Name: Forest Management Elective Rule: Must take at least one course

Criterion: C- Number of Credits 2-3

Course Listing

FORS 230	Forest Fire Management	2	S	
FORS 232	Forest Insects & Diseases	2	S	
NRSM 265	Elements of Ecological Restora	3	F	
PTRM 217S	Wildland Recreation Management	3	F,S	
WILD 275	Wildlife Conservation	2	S	

Commentary: Major Electives

Category Name: Resource Protection Electives Rule: Must take one course from the list below

Criterion: C- Number of Credits 3

Course Listing

FORS 331	Wildland Fuel Management	3	F	
NRSM 360	Rangeland Mgt (equiv 260)	3	F	
NRSM 415	Environmental Soil Science	3	SO	
NRSM 455	Riparian Ecology & Management	3	SO	
NRSM 485	Watershed Management	3	I	

Commentary: Major Electives

Rule: Must take one course from the list below

Criterion: C- Number of Credits 3

Course Listing

NASX 303E	Ecol Persp in Nat Amer Trad	3		
NRSM 379	Collab in Nat Res Decisions	3	S	
NRSM 424	Community Forestry & Conservtn	3	I	
NRSM 425	Nat Res & Envir Economics	3	S	
NRSM 489E	Ethics Forestry & Conservation	3	F	

Degree Specific Writing

Category Name: Writing Within Major

Rule: Must complete the following subcategories

Criterion: Number of Credits 15

Course Listing Commentary:

Subcategory Name: Lower Division Writing Rule: Need to take all listed

Criterion: C- Number of Credits 6

Course Listing

NRSM 200	Nat.Resource Professional Wrtg	3	F,S	
WRIT 101	College Writing I	3	F,S	

Subcategory Name: Upper Division Writing Rule: Must take at least three courses

Criterion: C- Number of Credits 9

Course Listing

FORS 330	Forest Ecology	3	F,S	
FORS 341	Timber Harvesting & Roads	3		S
FORS 349	Practice of Silviculture	3	F	
FORS 440	Forest Stand Management	3		F

#### Degree Specific Mathematics

Rule: All are required

Criterion: C- Number of Credits 4-6

#### Course Listing

M 151	Precalculus	4	F,S	
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Commentary: Two courses can be substituted for M 151: M 121 College Algebra AND M 122 College Trig

Degree Specific Symbolic Systems Category Name: Symbolic Systems Rule: Must take the following course

Criterion: C- Number of Credits 4

#### Course Listing

FORS 201	Forest Biometrics	3		
STAT 216	Introduction to Statistics	4		

#### Degree Specific Expressive Arts

Category Name: Expressive Arts within Major Rule: Must take one of the following courses

Criterion: C- Number of Credits 3

#### Course Listing

COMX 111A	Intro to Public Speaking	3	F,S	
THTR 120A	Introduction to Acting I	3	F,S	

Commentary:

#### Degree Specific Social Sciences

Category Name: Social Science within Major Rule: Must take the following course

Criterion: C- Number of Credits 3

#### Course Listing

ECNS 201S	Principles of Microeconomics	3	F,S	
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Commentary:

Category Name: Ethical & Human Values Elective within Major Rule: Can take the following elective course

Criterion: C- Number of Credits 3

#### Course Listing

NRSM 489E	Ethics Forestry & Conservation	3	F	
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Commentary:

#### Degree Specific Natural Sciences

Category Name: Natural Science within Major Rule: Must take all courses

Criterion: C- Number of Credits 6

#### Course Listing

CHMY 121N	Intro to General Chemistry	3	F,S	
NRSM 210N	Soils, Water and Climate	3	F	

## College of Forestry & Conserv Catalog Year: 2015-2016

Degree Type: Bachelor of Science    Level: Major    Subject: **Forestry**    Option: **Forest Resources Mgmt**

Total Credits: 90    Cumulative GPA Required: 2.0

### Lower Division Core

Category Name: Major Required Courses Rule: Must take all courses

Criterion: C-    Number of Credits 22

#### Course Listing

FORS 130	Intro Forestry Field Skills	2	F
FORS 201	Forest Biometrics	3	F
FORS 202	Forest Mensuration	3	S
FORS 240	Tree Biology	2	F,S
FORS 241N	Dendrology	3	F,S
FORS 250	Intro to GIS for Forest Mgt	3	F,S
NRSM 200	Nat.Resource Professional Wrtg	3	F,S
NRSM 210N	Soils, Water and Climate	3	F

Commentary:

Commentary: Lower Division Core

Category Name: Outside Major Courses Required Rule: Must take all courses

Criterion: C-    Number of Credits 24-27

#### Course Listing

BIOB 160N	Principles of Living Systems	4	F
CHMY 121N	Intro to General Chemistry	3	F,S,SU
COMX 111A	Intro to Public Speaking	3	F,S,SU
ECNS 201S	Principles of Microeconomics	3	F,S
M 151	Precalculus	4	F,S,SU
M 162	Applied Calculus	4	F,S
WRIT 101	College Writing I	3	F,S,SU

Commentary: Can take THTR 120A Intro to Acting I in place of COMX 111A; Can take M 121 College Algebra AND M 122 College Trigonometry to satisfy M 151; Can take PHSX 205/206 College Physics I and Lab in place of M 162

Commentary:

### Upper Division Core

Category Name: Major Required Courses Rule: Must take all courses

Criterion: C-    Number of Credits 26

#### Course Listing

FORS 320	Forest Environmental Economics	3	F
FORS 330	Forest Ecology	3	F,S
FORS 340	Forest Product Manufacturing	2	F
FORS 341	Timber Harvesting & Roads	3	S
FORS 349	Practice of Silviculture	3	F



FORS 440	Forest Stand Management	3	F
FORS 481	Forest Planning	3	S
NRSM 385	Watershed Hydrology	3	F,S
NRSM 422	Nat Res Policy/Administration	3	F,S

Commentary:

Commentary: Major Electives

Category Name: Professional Electives

Rule: Must take at least 18 total credits from the combined subcategories Criterion: C-

Number of Credits 18

Course Listing

Commentary: NOTE - Must take 6 credits beyond major requirements to earn a minor

Subcategory Name: Biophysical Sciences

Rule: Must take at least one course from the list below

Criterion: C- Number of Credits 3

Course Listing

BIOE 370	General Ecology	3	F,S
BIOO 335	Rocky Mountain Flora	3	S
BIOO 433	Plant Physiology	3	S
FORS 333	Basic&Applied Fire Ecology	3	S
FORS 342	Wood Anatomy, Properties, & ID	3	S
NRSM 335	Environmental Entomology	3	F
NRSM 418	Ecosystem Climatology	3	SO
WILD 370	Wildlife Habitat Cons & Mgmt	3	

Commentary:

Subcategory Name: Management Application

Rule: Must take at least two courses

Criterion: C- Number of Credits 4-6

Course Listing

FORS 230	Forest Fire Management	2	S
FORS 232	Forest Insects & Diseases	2	S
FORS 331	Wildland Fuel Management	3	F
FORS 434	Advanced Forest Roads	2	F
FORS 435	Advanced Timber Harvesting	2	F
FORS 447	Advanced Silviculture	3	F
NRSM 360	Rangeland Mgt (equiv 260)	3	F
NRSM 485	Watershed Management	3	I
WILD 275	Wildlife Conservation	2	S

Commentary:

Subcategory Name: Policy and Social Science

Rule: Must take at least one course from the list below

Criterion: C- Number of Credits 3

Course Listing

ENST 230H	Nature and Society	3	S	
FORS 436	Project Appraisal	3		
NASX 303E	Ecol Persp in Nat Amer Trad	3	F,S	
NRSM 370S	Wildland Conserv Pol/Govrnance	3	F	
NRSM 379	Collab in Nat Res Decisions	3	S	
NRSM 424	Community Forestry & Conservtn	3	S	
NRSM 425	Nat Res & Envir Economics	3	I	
NRSM 426	Climate and Society	3	SO	
NRSM 475	Environment & Development	3	S	
NRSM 489E	Ethics Forestry & Conservation	3	F	
PTRM 217S	Wildland Recreation Management	3	F,S	
PTRM 300	Recreation Behavior	3	S	
PTRM 310	Nat Res Interp and Comm	3	F	
PTRM 380	Rec Admin & Leadership	3	S	
PTRM 451	Tourism & Sustainability	3	F	
PTRM 482	Wilderness & Protctd Area Mgt3	3	F	

Commentary:

Subcategory Name: Measurement and Analysis

Rule: Must take at least one course from the list below

Criterion: C- Number of Credits 2-3

Course Listing

FORS 307	Forest Veg Mgt Models	3	I	
FORS 350	Forestry Apps of GIS	3	S	
FORS 351	Env Remote Sensing	3	S	
GEO 421	Hydrology	3		
WILD 373	Wildlife Techniques	2		

Commentary:

Degree Specific Writing

Category Name: Writing within Major

Rule: Must complete the following subcategories

Criterion: Number of Credits 15

Course Listing Commentary:

Subcategory Name: Lower Division Writing Rule: All are required

Criterion: C- Number of Credits 6

Course Listing

NRSM 200	Nat.Resource Professional Wrtg	3	F,S	
WRIT 101	College Writing I	3	F,S	

Commentary:

Subcategory Name: Upper Division Writing

Rule: Must take at least 3 of the following courses

Criterion: C- Number of Credits 9

Course Listing

FORS 330	Forest Ecology	3	F,S
FORS 340	Forest Product Manufacturing	2	F
FORS 341	Timber Harvesting & Roads	3	S
FORS 349	Practice of Silviculture	3	F

Degree Specific Mathematics Category Name: Math within Major Rule: All are required

Criterion: C- Number of Credits 4-6

Course Listing

M 151	Precalculus	4	F,S
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Commentary: Two courses can be substituted for M 151: M 121 College Algebra AND M 122 College Trig

Degree Specific Symbolic Systems Category Name: Symbolic System

Rule: Must take one of the following courses

Criterion: C- Number of Credits 4

Course Listing

FORS 201	Forest Biometrics	3	
STAT 216	Introduction to Statistics	4	

Degree Specific Expressive Arts

Category Name: Expressive Arts Requirement Rule: Must take one of the following courses

Criterion: C- Number of Credits 3

Course Listing

COMX 111A	Intro to Public Speaking	3	F,S,SU
THTR 120A	Introduction to Acting I	3	F,S

Commentary:

Degree Specific Social Sciences

Category Name: Social Science within Major Rule: Must take the following course

Criterion: C- Number of Credits 3

Course Listing

ECNS 201S	Principles of Microeconomics	3	F,S
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Commentary:

Degree Specific Ethical & Human Values

Category Name: Ethical & Human Values Elective within Major Rule: Can take the elective course

Criterion: C- Number of Credits 3

Course Listing

NRSM 489E	Ethics Forestry & Conservation	3	F
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Degree Specific Natural Sciences

Category Name: Natural Sciences within Major

Rule: Must take at least 2 courses and include a lab course

Criterion: C-

Course Listing		Number of Credits	6	
BIOB 160N	Principles of Living Systems	4		F
CHMY 121N	Intro to General Chemistry	3		F,S
FORS 241N	Dendrology	3		F,S
NRSM 210N	Soils, Water and Climate	3		F

# Parks, Tourism, and Recreation Management

The B.S. in Parks, Tourism & Recreation Management degree is designed to prepare students for professional positions developing and managing nature-based recreation experiences and park resources for public land management agencies, nonprofit organizations, and the nature-based tourism industry. Students pursuing this degree must choose between an option in Recreation Resources Management or Nature-Based Tourism. The Recreation Resources Management option provides the educational background necessary for evaluating and managing wild lands to protect their recreational, heritage, and ecological values. The Nature-Based Tourism option is designed to combine an understanding of social, cultural, political, environmental, and economic contexts surrounding tourism in a natural resource setting. All students learn the processes and conceptual skills needed to determine alternative management strategies, make management decisions, and carry out management programs. Included are courses leading to an understanding of the basic ecological characteristics of recreational lands. Students also take courses dealing with human behavior and management. Emphasis is placed on presenting problems that would be encountered while managing national parks and forests, state and regional parks, wilderness areas, and other recreation resources of international and national significance.

## College of Forestry & Conserv Catalog Year: 2015-2016

Degree Type: Bachelor of Science Level: Major Subject: **Parks, Tourism &Rec Management**

Total Credits: 75 Cumulative GPA Required: 2.0

Lower Division Core

Category Name: Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 15

Course Listing				
NRSM 121S	Nature of Montana	3		
NRSM 200	Nat.Resource Professional Wrtg	3		F,S
NRSM 210N	Soils, Water and Climate	3		F
PTRM 210	Nature-Based Tourism	3		F
PTRM 217S	Wildland Recreation Management	3		F,S

Commentary: Lower Division Core

Category Name: Outside Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 29

Course Listing

ACTG 201	Principles of Fin Acct	3	F,S
ACTG 202	Principles of Mang Acct	3	F,S
BIOB 170N	Princpls Biological Diversity	3	F
COMX 111A	Intro to Public Speaking	3	F,S
ECNS 201S	Principles of Microeconomics	3	F,S
M 115	Probability and Linear Math	3	F,S
PSYX 100S	Intro to Psychology	4	F,S
STAT 216	Introduction to Statistics	4	F,S
WRIT 101	College Writing I	3	F,S

Commentary: Can take SOCI 202 Social Statistics OR FORS 201 Biometrics in place of STATS 216; Can take THTR 120A Intro to Acting in place of COMX 111A; can take BIOE 172 Into to Ecology OR BIOO 105 Botany in place of BIOB 170

Commentary: Upper Division Core

Category Name: Major Required Courses

Criterion: C- Number of Credits 28

Course Listing

FORS 330	Forest Ecology	3	F,S
NRSM 422	Nat Res Policy/Administration	3	F,S
PTRM 300	Recreation Behavior	3	S
PTRM 310	Nat Res Interp and Comm	3	F
PTRM 380	Rec Admin & Leadership	3	S
PTRM 482	Wilderness & Protctd Area Mgt	3	F
PTRM 484	PTRM Field Measurement Tech	3	F
PTRM 485	Recreation Planning	4	S
PTRM 495	Practicum in PTRM	1 To 6	

Commentary: Can take WILD 410 Wildlife Policy & Biopolitics in place of NRSM 422; Can take NRSM 462 Range Ecology in place of FORS 330; Can take PTRM 451 Tourism & Sustainability in place of PTRM 482.

In addition to the above requirements, students are also required to take at least 3 credits of skills classes. Students can choose from: ECP 120/121 Emergency Care Provider and lab (3)cr., NRSM 379 Collaboration (3)cr., BKMT 325, Principles of Marketing (3)cr., or FORS 250 Introduction to GIS. Alternatively, students can take two semesters of a foreign language.

Commentary:

Degree Specific Writing

Category Name: Writing Within Major

Rule: Must complete the following subcategories

Criterion: Number of Credits 9

Course Listing Commentary:

Subcategory Name: Lower Division Writing Rule: Must take all courses

Criterion: C- Number of Credits 6

Course Listing

NRSM 200 Nat.Resource Professional Wrtg 3 F,S

WRIT 101 College Writing I 3 F,S

Commentary:

Subcategory Name: Upper Division Writing Rule: Must take one of the following courses

Criterion: C- Number of Credits 3

Course Listing

PTRM 482 Wilderness & Protctd Area Mgt3 F Commentary:

Commentary:

Degree Specific Mathematics Category Name: Math within Major Rule: Must take all courses

Criterion: C Number of Credits 3

Course Listing

M 115 Probability and Linear Math 3 F,S Commentary:

Commentary:

Degree Specific Symbolic Systems Category Name: Symbolic Systems

Rule: Must take at least one of the following courses

Criterion: C- Number of Credits 3-4

Course Listing

FORS 201 Forest Biometrics 3 F

SOCI 202 Social Statistics 3 F,S

STAT 216 Introduction to Statistics 4 F,S

Commentary:

Degree Specific Expressive Arts

Category Name: Expressive Arts Requirement Rule: must take one of the following courses

Criterion: C- Number of Credits 3

Course Listing

COMX 111A Intro to Public Speaking 3 F,S

THTR 120A Introduction to Acting I 3 F,S

Degree Specific Social Sciences

Category Name: Social Science within Major

Criterion: C- Number of Credits 3

Course Listing

PTRM 217S Wildland Recreation Management 3 F,S

Commentary:

Degree Specific Ethical & Human Values

Category Name: Ethical & Human Values Elective within Major Rule: CAN take the elective course

Criterion: C- Number of Credits 3

Course Listing

NRSM 489E	Ethics Forestry & Conservation	3	F
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Commentary:

Degree Specific Natural Sciences

Category Name: Natural Sciences within Major

Rule: Must take NRSM 210 and one of the biology courses

Criterion: C-

Course Listing Number of Credits 6

BIOB 170N	Princpls Biological Diversity	3	F
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BIOE 172N	Introductory Ecology	3	F
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BIOO 105N	Introduction to Botany	3	S
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NRSM 210N	Soils, Water and Climate	3	F
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Degree Commentary: There are no longer "degree options". Students can design their own elective choices with an advisor.

## College of Forestry & Conserv Catalog Year: 2015-2016

Degree Type: Bachelor of Science Level: Major Subject: **Resource Conservation**

Total Credits: 43 Cumulative GPA Required: 2.0

Lower Division Core

Category Name: Professional Writing Rule: Must take the following course

Criterion: C- Number of Credits 3

Course Listing

NRSM 200	Nat.Resource Professional Wrtg	3	F,S
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Commentary: Lower Division Core

Category Name: Chemistry

Rule: Must take the following course

Criterion: C- Number of Credits 3

Course Listing

CHMY 121N	Intro to General Chemistry	3	F,S
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Rule: Must take three of the following courses and one must be a statistics course (FORS 201, STAT 216 or SOCI 202) Criterion: C- Number of Credits 9

Course Listing

FORS 201	Forest Biometrics	3	F
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FORS 250	Intro to GIS for Forest Mgt	3	F,S
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M 115	Probability and Linear Math	3	F,S
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M 121	College Algebra	3	F,S
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M 122	College Trigonometry	3	F,S
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M 151 Precalculus 4 F,S

M 162 Applied Calculus 4 F,S

Commentary: FORS 250 is highly recommended

Can take STAT 216 Statistics or SOCI 202 Social Statistics in place of FORS 201

Commentary: Lower Division Core

Category Name: Biology

Rule: Must take one course from below

Criterion: C- Number of Credits 3-4

Course Listing

BIOB 160N Principles of Living Systems 4

BIOB 170N Princpls Biological Diversity 3

BIOE 172N Introductory Ecology 3

BIOO 105N Introduction to Botany 3

Commentary: Lower Division Core

Category Name: Communication

Rule: Must take one course from below

Criterion: C- Number of Credits 3

Course Listing

COMX 111A Intro to Public Speaking 3 F,S

THTR 120A Introduction to Acting I 3 F,S

Rule: Must take the following course

Criterion: C- Number of Credits 3

Course Listing

NRSM 210N Soils, Water and Climate 3 F

Commentary: Upper Division Core

Category Name: Ecology

Rule: Must take one course from below

Criterion: C- Number of Credits 3

Course Listing

BIOE 370 General Ecology 3 F,S

FORS 330 Forest Ecology 3 F,S

NRSM 462 Rangeland Ecology 3 S

Commentary: Upper Division Core

Category Name: Policy

Rule: Must take one course from below

Criterion: C- Number of Credits 3

Course Listing

NRSM 370S Wildland Conserv Pol/Govrnance 3 F

NRSM 422 Nat Res Policy/Administration 3 F,S



WILD 410 Wildlife Policy & Biopolitics 3 S

Commentary: Upper Division Core

Category Name: Social Science

Rule: Must take one course from below

Criterion: C- Number of Credits 3

Course Listing

NRSM 379 Collab in Nat Res Decisions 3 S

NRSM 424 Community Forestry & Conservtn 3 S

PTRM 300 Recreation Behavior 3 S

Commentary: Upper Division Core

Category Name: Ethics

Rule: Must take one course from below

Criterion: C- Number of Credits 3

Course Listing

NRSM 449E Climate Change Ethics/Policy 3 F

NRSM 489E Ethics Forestry & Conservation 3 F

Commentary: Major Electives

Category Name: Additional Required Courses

Rule: Must take at least 36 traditional letter-graded credits from the College of Forestry and Conservation (NRSM, WILD, FORS, PTRM, CCS 103, CCS 352, CCS 391)

Criterion: C- Number of Credits

Course Listing

Commentary: In addition to the above requirements, Resource Conservation students are also required to take at least 10 additional credits in their area of emphasis. Students can choose courses from the following prefixes: BIOC, BIOE, CHMY, ENSC, FORS, GEOS, M, NRSM, PHSX, and WILD. Alternatively, students can take two semesters of a foreign language (or otherwise demonstrate foreign language proficiency).

All students must take at least 49 approved credits in the major.

Students double majoring with Resource Conservation and Ecological Restoration, Forestry, Wildlife Biology, and Parks, Tourism and Recreation Management must take an additional 9.0 credits in FORS, NRSM, PTRM, and WILD in addition to courses required by either of their majors. These additional 9.0 credits will be relevant to the student's track/emphasis with the major.

Commentary:

Degree Specific Writing Category Name: Writing

Rule: Must take both lower-division courses ( WRIT 101 and NRSM 200) and at least 3 courses at the upper-division level listed below Criterion: C- Number of Credits 15

Course Listing

BIOE 428 Freshwater Ecology 5

FORS 330 Forest Ecology 3 F,S

FORS 341 Timber Harvesting & Roads 3 S

FORS 347	Multiple Resource Silviculture	3	S
FORS 440	Forest Stand Management	3	F
FORS 499	Senior Thesis 1 To 3	I	
NASX 403	Contmp Tribal Resource Issues	3	
NRSM 200	Nat.Resource Professional Wrtg	3	F,S
NRSM 379	Collab in Nat Res Decisions	3	S
NRSM 426	Climate and Society	3	
NRSM 444	Ecological RestorationCapstone	5	S
NRSM 449E	Climate Change Ethics/Policy	3	
NRSM 462	Rangeland Ecology	3	S
NRSM 475	Environment & Development	3	S
NRSM 489E	Ethics Forestry & Conservation	3	F
NRSM 495	Ecological Restor Practicum	3 To 6	S
NRSM 499	Senior Thesis 1 To 3	I	
PTRM 300	Recreation Behavior	3	S
WILD 410	Wildlife Policy & Biopolitics	3	F
WRIT 101	College Writing I	3	F,S

Commentary: The following courses count for the entire upper-division writing requirement (only one course is required): PTRM 451W Tourism and Sustainability, PTRM 482W Wilderness and Protected Area Mgmt.

Degree Specific Mathematics Category Name: Math

Rule: Must take one course from below

Criterion: C- Number of Credits 3-4

Course Listing

M 115	Probability and Linear Math	3	F,S
M 121	College Algebra	3	F,S
M 122	College Trigonometry	3	F,S
M 151	Precalculus	4	F,S
M 162	Applied Calculus	4	F,S

Commentary:

Degree Specific Symbolic Systems Category Name: Symbolic System

Course Listing

FORS 201	Forest Biometrics	3	F
SOCI 202	Social Statistics	3	F,S
STAT 216	Introduction to Statistics	4	F,S

Commentary:

Degree Specific Expressive Arts Category Name: Expressive Arts

Rule: Must take the one course from below

Criterion: C- Number of Credits 3

Course Listing

COMX 111A Intro to Public Speaking 3 F,S

THTR 120A Introduction to Acting I 3 F,S

Degree Specific Ethical & Human Values Category Name: Ethical & Human Values Rule: Must take one course from below

Criterion: C- Number of Credits 3

Course Listing

NRSM 449E Climate Change Ethics/Policy 3 F

NRSM 489E Ethics Forestry & Conservation 3 F

Degree Specific Natural Sciences

Category Name: Natural Sciences in Major Rule: Must take all courses

Criterion: C- Number of Credits 6

Course Listing

CHMY 121N Intro to General Chemistry 3 F,S

NRSM 210N Soils, Water and Climate 3 F

# Wildlife Biology

**Chad Bishop, Wildlife Biology; Director**

The Wildlife Biology Program combines the best features of a liberal arts curriculum with scientific preparation in wildlife conservation. The Program provides students with an extensive knowledge in ecology, population biology, conservation biology, and critical thinking and quantitative skills. Our students receive a strong academic and scientific background with an emphasis on hands-on, experiential learning. The educational requirements for certification by The Wildlife Society can be met within the framework of the undergraduate program.

While some employment opportunities exist in wildlife conservation for students with the baccalaureate degree, we encourage students to continue their education through the master's degree to qualify for most state, federal, and private positions.

Three optional curricula are offered in the Wildlife Biology Program: terrestrial, aquatic, and honors. All three options follow the same schedule of courses for the freshman and most of the sophomore year and then pursue different curricula for the last two years. Each leads to a B.S. in Wildlife Biology. The University is well-suited for instruction in wildlife biology because of the excellent opportunities for field instruction and research at Lubrecht Experimental Forest, Flathead Lake Biological Station, and the Theodore Roosevelt Memorial and Bandy ranches. The Montana Forest and Conservation Experiment Station, the Division of Biological Sciences, and the Montana Cooperative Wildlife Research Unit facilitate research.

The honors curriculum is designed particularly for students with strong academic records who intend to do graduate work. Entrance into this emphasis is open only to students who, at the beginning of the junior year of the wildlife biology program, have a grade-point average of 3.5 or above and who petition the faculty for entrance.

High School Preparation: In addition to general University admission requirements, the student should elect four years of mathematics and three years of science, including biology, chemistry and physics.

Honors students must complete either WILD 370, 470 and 494 (terrestrial option) or BIOO 340, BIOE 428 and WILD 494 (aquatic option). Honors students are encouraged to enroll also in WILD 499 Senior Thesis. The balance of the coursework for the junior and senior years will be developed in consultation with the honors student's faculty advisor and committee.

All students in the honors emphasis are required to meet with their faculty advisor prior to autumn semester registration of their junior and senior years to work out their course schedules.

### **College of Forestry & Conserv Catalog Year: 2015-2016**

Degree Type: Bachelor of Science    Level: Major    Subject: **Wildlife Biology**    Option: **Terrestrial**

Total Credits: 74    Cumulative GPA Required: 2.5

Lower Division Core

Category Name: Major Required Courses Rule: Must take all courses

Criterion: C-    Number of Credits 17

Course Listing

BIOB 160N	Principles of Living Systems	4	F,SU
BIOB 260	Cellular and Molecular Biology	4	F,SU
BIOB 272	Genetics and Evolution	4	S
NRSM 180	Careers in Natural Resources	2	F,S
NRSM 200	Nat.Resource Professional Wrtg	3	F,S

Commentary:

Lower Division Core

Category Name: Outside Major Required Courses Rule: Must take all courses

Criterion: C-    Number of Credits 23

Course Listing

CHMY 121N	Intro to General Chemistry	3	F,S
CHMY 123N	Intro to Organic & Biochem	3	F,S
CHMY 124N	Intro to Organic & Biochem Lab	2	S
COMX 111A	Intro to Public Speaking	3	F,S
M 162	Applied Calculus	4	F,S
STAT 216	Introduction to Statistics	4	F,S
WRIT 101	College Writing I	3	F,S

Commentary: Can take WILD 240 Into to Biostatistics/Honors in place of STAT 216

Commentary: Upper Division Core

Category Name: Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 32

Course Listing

BIOE 370	General Ecology	3	F,S
BIOE 371	Gen Ecology Lab (equiv to 271)	2	F,S
BIOO 335	Rocky Mountain Flora	3	
BIOO 340	Biology and Mgmt of Fishes	4	F
BIOO 470	Ornithology	4	S
BIOO 475	Mammalogy	4	F
NRSM 360	Rangeland Mgt (equiv 260)	3	F
WILD 346	Wildlife Physiological Ecology	3	F
WILD 370	Wildlife Habitat Cons & Mgmt	3	F,S
WILD 410	Wildlife Policy & Biopolitics	3	F
WILD 470	Conserv of Wildlife Populatns	3	F,S
WILD 480	The Upshot--Appld Wildlife Mgt	3	S

NOTE - two out of the three are required: BIOO 470, BIOO475, BIOO 340

Degree Specific Writing

Category Name: Writing Requirement

Rule: Must complete the following subcategories

Criterion: Number of Credits 12-18

Course Listing Commentary:

Subcategory Name: Lower Division Writing Rule: Complete all of the following courses

Criterion: C- Number of Credits 6

Course Listing

NRSM 200	Nat.Resource Professional Wrtg	3	F,S
WRIT 101	College Writing I	3	F,S

Commentary: Can take WRIT 325 Science Writing OR WRIT 201 College Writing II in place of NRSM 200

Subcategory Name: Upper Division Writing

Rule: Complete BIOE 371 and TWO of the other courses

Criterion: C- Number of Credits 6-12

Course Listing

BIOE 371	Gen Ecology Lab (equiv to 271)	2	F,S
BIOE 428	Freshwater Ecology	5	F
BIOO 320	General Botany	5	F,S
BIOO 470	Ornithology	4	S
BIOO 475	Mammalogy	4	F
WILD 408	Advanced Fisheries	3	S

WILD 470 Conserv of Wildlife Populatns 3 F,S

WILD 499 Thesis 1 To 3 I

Degree Specific Mathematics

Category Name: Mathematics Requirement Rule: must take the following course

Criterion: C- Number of Credits 4

Degree Specific Symbolic Systems

Category Name: Symbolic Systems Requirement Rule: must take the following courses

Criterion: C- Number of Credits 8

Course Listing

M 162 Applied Calculus 4 F,S

STAT 216 Introduction to Statistics 4 F,S

Commentary: Can take WILD 240 Biostatistics/Honors in place of STATS 216

Degree Specific Expressive Arts Category Name: Expressive Arts Rule: must take the following course

Criterion: C- Number of Credits 3

Course Listing

COMX 111A Intro to Public Speaking 3 F,S Commentary:

Degree Specific Natural Sciences

Category Name: Natural Sciences Requirement Rule: Must take all courses

Criterion: C- Number of Credits 8

Course Listing

BIOB 160N Principles of Living Systems 4 S

CHMY 121N Intro to General Chemistry 3 F,S

CHMY 123N Intro to Organic & Biochem 3 F,S

CHMY 124N Intro to Organic & Biochem Lab 2 F,S

Commentary: Degree Commentary

## College of Forestry & Conserv Catalog Year: 2015-2016

Degree Type: Bachelor of Science Level: Major Subject: **Wildlife Biology** Option: **Aquatic**

Total Credits: 84 Cumulative GPA Required: 2.5

Lower Division Core

Category Name: Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 5

Course Listing

BIOB 160N Principles of Living Systems 4 F,SU

BIOB 260 Cellular and Molecular Biology 4 F,SU

BIOB 272 Genetics and Evolution 4 S

NRSM 180 Careers in Natural Resources 2 F,S

NRSM 200 Nat.Resource Professional Wrtg 3 F,S

Commentary: Can take WRIT 325 Science Writing / Honors in place of NRSM 200 One out of the four is required:

BIOE 406/409, BIOM 427/428, BIOO 462, WILD 485

Commentary: Lower Division Core

Category Name: Outside Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 37

Course Listing

CHMY 124N Intro to Organic & Biochem Lab 2 S

COMX 111A Intro to Public Speaking 3 F,S

M 162 Applied Calculus 4 F,S

STAT 216 Introduction to Statistics 4 F,S

WRIT 101 College Writing I 3 F,S

Commentary: Can take WILD 240 Into to Biostatistics/Honors in place of STAT 216; Can take WRIT 245 Science Writing/Honors in place of NRSM 200. Add: BIOE 406 and 409. Students are required to take 1 of 4 courses – BIOE 406 and 409, BIOM 427, BIOM 428, BIOO 462, or WILD 485.

Commentary: Upper Division Core

Category Name: Major Required Courses

Rule: Must take all courses

Criterion: C- Number of Credits 19

Course Listing

BIOE 370 General Ecology 3 F,S

BIOE 371 Gen Ecology Lab (equiv to 271) 2 F,S

BIOE 428 Freshwater Ecology 5 F

BIOM 427 General Parasitology 2 F,S

BIOM 428 General Parasitology Lab 2 F,S

BIOO 320 General Botany 5 F,S

BIOO 340 Biology and Mgmt of Fishes 4 F

BIOO 462 Entomology 4

NRSM 385 Watershed Hydrology 3 F,S

WILD 346 Wildlife Physiological Ecology 3 F

WILD 408 Advanced Fisheries 3 S

WILD 410 Wildlife Policy & Biopolitics 3 F

WILD 480 The Upshot--Appld Wildlife Mgt 3 S

WILD 485 Aquatic Invertebrate Ecology 3

WILD 494 Senior Wildlife Seminar 1 F,S

Commentary: Can take NRSM 422 Policy in place of WILD 410

Degree Specific Writing

Criterion: Number of Credits 12-18

Course Listing Commentary:

Subcategory Name: Lower Division Writing Rule: Complete all of the following courses

Criterion: C- Number of Credits 6

Course Listing

NRSM 200 Nat.Resource Professional Wrtg 3 F,S

WRIT 101 College Writing I 3 F,S

Commentary: Can take WRIT 325 Science Writing/Honors OR WRIT 201 College Writing II in place of NRSM 200

Subcategory Name: Upper Division Writing

Rule: Complete BIOE 371 and TWO of the other courses

Criterion: C- Number of Credits 6-12

Course Listing

BIOE 371 Gen Ecology Lab (equiv to 271) 2 F,S

BIOE 428 Freshwater Ecology 5 F

BIOO 320 General Botany 5 F,S

BIOO 470 Ornithology 4 S

BIOO 475 Mammalogy 4 F

WILD 408 Advanced Fisheries 3 S

WILD 470 Conserv of Wildlife Populatns 3 F,S

WILD 499 Thesis 1 To 3 I

Commentary:

Degree Specific Mathematics

Category Name: Mathematics Requirement Rule: must take the following course

Criterion: C- Number of Credits 4

Course Listing

M 162 Applied Calculus 4 F,S

Commentary:

Degree Specific Symbolic Systems

Criterion: C- Number of Credits 8

Course Listing

M 162 Applied Calculus 4 F,S

STAT 216 Introduction to Statistics 4 F,S

Commentary: Can take WILD 240 Biostatistics/Honors in place of STAT 216

Degree Specific Expressive Arts Category Name: Expressive Arts Rule: Must take the following course

Criterion: C- Number of Credits 3

Course Listing

COMX 111A Intro to Public Speaking 3

Degree Specific Natural Sciences

Category Name: Natural Sciences Requirement Rule: Must take all courses

Criterion: C- Number of Credits 8

Course Listing

BIOB 160N Principles of Living Systems 4 F,SU



CHMY 121N	Intro to General Chemistry	3	F,S
CHMY 123N	Intro to Organic & Biochem	3	F,S
CHMY 124N	Intro to Organic & Biochem Lab	2	F,S

Commentary: Degree Commentary

Experiential Learning is required - Students have several options to fulfill this requirement - list is available from the Wildlife Advisor in Forestry 103C.

## College of Forestry & Conserv Catalog Year: 2015-2016

Degree Type: Minor Level: **Minor** Subject: **Wildlife Biology**

Total Credits: 21 Cumulative GPA Required: 2.0

Lower Division Core

Category Name: Required courses Rule: must take the following courses

Criterion: C- Number of Credits 15

Course Listing

BIOO 101N	Survey MT Wldlife & Habitats	3	F
NRSM 180	Careers in Natural Resources	2	F,S
WILD 105N	Wildlife & People	3	F
WILD 275	Wildlife Conservation	2	S

Commentary: Upper Division Core

Category Name: Required courses Rule: must take the following courses

Criterion: C- Number of Credits 6

Course Listing

BIOO 335	Rocky Mountain Flora	3	S,SU
FORS 330	Forest Ecology	3	F,S

Commentary: Can take NRSM 360 Rangeland Mgmt in place of FORS 330

# Climate Change Studies

**Steven Running, Director**

Climate Change Studies is an inter-disciplinary program open to all majors. The program educates students in three areas of the climate change issue: science, society, and solutions. Coursework in the minor provides a foundation that enables students to engage the scientific, societal, and political dimensions of global climate change. Further, the focus on solutions with its orientation toward applied learning will help students develop critical thinking and problem solving skills. Participating students will enhance their major field of study. They will be better prepared to enter a broad range of professions and graduate programs where they can meet the emerging challenges and opportunities arising from climate change. Climate Change Studies is a joint program between the College of Forestry and Conservation, College of Arts and Sciences, and Missoula College's Energy Technology program.