

**MONTANA STATE UNIVERSITY - COLLEGE OF AGRICULTURE**

**Department of Land Resources & Environmental Sciences**

**Degree Requirements for a B.S. in Geospatial & Environmental Analysis**

**2012-2014 Catalog Curriculum: GSEA**

**Name: ID#: Date: Graduating Semester:**

**Total semester credits must equal a minimum of 120 credits; Total upper division must equal a minimum of 42 credits**

**ALL DEPARTMENTAL REQUIREMENTS & THEIR PREREQUISITES MUST BE A GRADE OF C- OR BETTER**

**APPLICATIONS FOR BACCALAUREATE ARE DUE ONE YEAR BEFORE GRADUATION!**

**DEPARTMENTAL REQUIREMENTS**

Subject/#	Course Title	Credits	Sem	Year	Sub/Transfer/Comments
ENSC 110	Land Resources & Environ Sci	3	F		
BIOB 170IN	Prin Biological Diversity	4	F S		
BIOB 160	Prin of Living Systems	4	F S		
CHMY 141	College Chemistry I	4	F S Su		
CHMY 143	College Chemistry II	4	F S Su		
ERTH 101IN	Earth System Science	4	F S		

**Choose one Math/Statistics Sequence, Option A or B**

*(Students who anticipate graduate study or technical employment are strongly advised to complete Option B)*

<b>Option A</b>					
M 161Q &	Survey of Calculus	4	F S Su		
STAT 216Q &	Intro to Statistics	3	F S Su		
STAT 217Q	Intermed Statistical Concepts	3	F S Su		
<b>Option B</b>					
MATH 171Q &	Calculus I	4	F S Su		
MATH 172Q &	Calculus II	4	F S Su		
STAT 332	Stats Scientists & Engineers	3	F S		
WRIT 101W	College Writing I	3	F S Su		

**WRIT 101W is waived with an ACT English Score of 28 or higher, an SAT Critical Writing score of 650 or higher, an MUS Writing Assessment of 5.5, or an ACT/SAT essay/writing Subscore of 11.**

Take one of the following:					
NRSM 240	Natural Res Ecology	3	F		
BIOE 370	General Ecology	3	S		
GPHY 284	Intro GIS & Cartography	3	F S		
ENSC 245IN	Soils	3	F		
PHSX 205	College Physics I	4	F S Su		
WRIT 201	College Writing II	3	F S		
GPHY 357	GPS Fund & App in Map	3	F		
GPHY 384	Adv GIS & Spatial Analysis	3	F S		
GPHY 484R	Applied GIS & Spatial Analy	3	S		
Take one of the following:					
NRSM 430	Natural Resource Law	3	S		
PSCI 362	Natural Resource Policy	3	S		
GPHY 426	Remote Sensing Digital Image	3	F		
ENSC 444	Watershed Hydrology	3	F		
ENSC 445	Watershed Analysis	3	S		
ENSC 454	Landscape Pedology	3	F		
ENSC 499R	Capstone	3	F		

**LRES majors: ENSC 492 Independent Study, ENSC 498 Internship or ENSC 490 Undergrad Research is strongly recommended**

ADVANCED ELECTIVE COURSES - Credits Required: 21					
Complete a minimum of 21 credits of listed electives below, meeting the following requirements:					
A. No more than four (4) credits from Human Systems electives count toward the 20 credit requirement.					
B. Up to three (3) elective credits may be received for advisor-approved LRES 470 (Independent Study) or LRES 490 (UG Research)					
C. At least 14 credits must be 300-400 level coursework					
Subject/#	Course Title	Credits	Sem	Year	Sub/Transfer/Comments
<b>Soil &amp; Water Electives (at least two courses)</b>					
ENSC 353	Environmental Biochemistry	3	F		
BIOM 452	Soil & Environ Microbiology	3	S'od		
ENSC 460	Soil Remediation	3	S		
ENSC 465	Environmental Biophysics	3	S		
ENSC 468	Ecosystem Biogeochemistry/Global Change	3	S		
ERTH 307	Prin Geomorphology	4	F		
ERTH 432R	Surface-Water Resources	3	F'od		
GEO 420	Hydrogeology	3	F'ev		
<b>Ecology Electives (at least two courses)</b>					
BIOM 415	Microbial Diversity Ecol Evol	3	S'ev		
AGSC 428	Sustainable Cropping Systems	3	S		
ENSC 407	Environmental Risk Assessment	3	F'od		
ENSC 443	Weed Ecology & Mgmt	3	F		
ENSC 410R	Biodiversity Survey & Monitoring	3	S		
ENSC 448	Stream Restoration Ecology	3	F		
ENSC 461	Restoration Ecology	3	F		
NRSM 455	Riparian Ecology & Mgmt	3	S		
NRSM 453	Habitat Inventory & Analysis	3	F		
BIOE 408	Rocky Mtn Vegetation	2	F		
BIOE 416	Alpine Ecology	3	Su		
BIOE 428	Freshwater Ecology	3	F		
<b>Technical Electives</b>					
GPHY 429R	Applied Remote Sensing	3	S		
GPHY 457	Adv GPS Mapping GIS	3	F		
SRVY 230	Surveying (Su on demand)	3	S		
SRVY 375	Analytic Photogrammetry & Remote Sensing	2	F'od		
STAT 410	Methods Data Analysis I	3	F		
<b>Human Systems Electives (no more than six credits)</b>					
NRSM 421	Holistic Thought & Mgmt	4	S		
ECNS 332	Econ Natural Resources	3	F		
GPHY 121D	Human Geography	3	F		
SOCI 470	Environ Sociology (on demand)	3			
<b>Other Electives:</b>					
BIOO 433	Plant Physiology	3	S		
BIOO 435	Plant Systematics	3	F'ev		

Core 2.0 Requirements (Must be a grade C- or better)	
University Seminar (US)	
College Writing (W)	
Quantitative Reasoning (Q)	
Diversity (D)	
Contemp Issues in Science (CS)	
Arts (IA or RA)	
Humanities (IH or RH)	
Natural Sciences (IN or RN)	
Social Sciences (IS or RS)	
Research (R, RA, RH, RN or RS)	

Completion of UH 202 satisfies the IH requirement.

Completion of at least two of the following courses satisfies both the CS and the IN requirements:  
 BIOB 110, 160, 170, 256, 258, 260;  
 BIOH 201 211; BIOM 210, 250; BIOO 220;  
 CHMY 121, 123, 141, 143, 151, 153, 211;  
 EARTH 101; ENSC 245; GEO 103, 205, 211;  
 NRSM 240;  
 PHSX 205, 207, 220, 222, 224, 240, 242;

Student Signature \_\_\_\_\_ Date \_\_\_\_\_

Total Credits: \_\_\_\_\_ Upper Division: \_\_\_\_\_

Advisor Signature \_\_\_\_\_ Date \_\_\_\_\_

4/3/13

Certifying Officer Signature \_\_\_\_\_ Date \_\_\_\_\_