

ENSP – Global Environmental Change

Effective -- Fall 2016 and beyond

Updated 7.26.18 - ABM

ENSP Core				General Education		
				Fundamental Studies (15 credits)		
Course	Title	Offered	Grade	Requirements	Course	Cr
All				Academic Writing (AW)		
ENSP101 (NS)	Intro to Env Science	Fa				3
ENSP102 (HS)	Intro to Env Policy	Sp		Professional Writing (PW)		
ENSP400 (SP)	Senior Capstone	Fa,Sp		Oral Communication (OC)		
Applied Science and Policy (one)				Math (MA)		
ENSP305	Quant. Methods	Sp		Calculus		3-4
ENSP330	Environmental Law	Fa, Sp		Analytical Reasoning (AR)		
ENSP340	Sci, Ethics, Law: Water	Fa		Distributive Studies (25 credits)		
ENSP342	Oceans: Integ. Policy	Sp				
ENSP350	Energy & Science	TBA				
Calculus (one)						
MATH120 (MA)	Elementary Calculus	Fa,Sp,Su	Grade	Natural Sciences w/Lab (NL)	ENSP Lab Sci	4
MATH140 (MA)	Calculus I (<i>strongly recommended</i>)	Fa,Sp,Su		Natural Science (NS)	ENSP 101	3
Statistics (one)				History and/or Social Sci (HS1)		
BIOM301 (AR)	Intro to Biometrics	Fa,W,Sp	Grade	History and/or Social Sci (HS2)		3
GEOG306 (AR) **	Intro to Quant Methods	Fa,Sp,Su,		Humanities (HU1)		4
PSYC200 (AR)	Stat Methods in Psyc	Fa,Sp,Su		Humanities (HU2)		3
** <i>strongly recommended</i>				Scholarship in Practice (SP, major)		
				Scholarship in Practice (SP, non-major)		
				I-Series (6 credits)*		
				* May double-count with Distributive Studies		
				Requirements		
				I- Series (IS)		
				I- Series (IS)		
				Diversity (4-6 credits)*		
				* May double-count with Distributive Studies		
				Requirements		
				Understanding Plural Societies (UP)		
				Understanding Plural Societies (UP) or Cultural Competency (CC)		
				Experiential Learning (0-3 credits)*		
				* May overlap with major requirements		
				Requirements		
				Practical experience is <i>required</i> in this concentration		
ENSP Graduation Requirements				Graduation Requirements		
_____ Students must earn <u>C-</u> or <u>higher</u> in all courses used for ENSP Core and Concentration requirements.				_____ <u>Up to 6 AP courses</u> may be used for Gen Ed		
_____ Students' major GPA must be 2.0 or higher.				_____ No more than 60 credits earned from Community College		
				_____ Last 30 credits must be earned at Maryland		
				_____ 120+ cumulative credits <i>and</i> 2.0+ cum GPA		

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REQUIREMENTS:

>>> LOWER LEVEL requirements (18-19 credits):

Course	Description	Cr	Offered	Prerequisites	Grade
GEO 100	Introduction to Geology	3	F, Sp, Su		
MATH 141 <i>or</i> MATH 121	Calculus II [<i>strongly recommended</i>] <i>or</i> Elementary Calculus II	4 3	F, Sp, Su F, Sp, Su	MATH 140 MATH 220	____ ____
PHYS161/174 <i>or</i> PHYS 121	Gen Phys: Mechanics and Particle Dyn /Lab Fund of Physics	3/1 4	F, Sp F, Sp	MATH141 MATH 115	____ ____
CHEM 231/232	Organic Chemistry I	4	F, Sp, Su	CHEM 131/132	____
ENST 200 <i>or</i> GEO 102	Introduction to Soil Science* <i>or</i> Historical Geology	4 4	Fa Sp	CHEM 131/132 GEO 100	____ ____

>>> **UPPER LEVEL requirements (18-19 credits):** Special care needs to be taken in planning your junior and senior years, as many courses and their pre-requisites are offered only once annually. Please see your advisor for help with this as early as possible!

Course	Description	Cr	Offered	Prerequisites	Grade
GEOG 342 <i>or</i> BSCI 361	Intro to Biogeography <i>or</i> Principles of Ecology	3 4	Sp Fa, Sp	BSCI 160/161	____ ____
GEOG 331	Intro to Hum Dimen of Global Chng	3	Sp	GEOG 201 or GEOG 202	
GEOG 345 <i>or</i> GEOG 301	Intro to Climatology Adv Geographical Environmental Systems	3 3	F S	No longer offered GEOG201	
GVPT 306 <i>or</i> ENSP340 <i>or</i> ENSP342 <i>or</i> ENSP350	Global Ecopolitics <i>or</i> Science, Ethics, and Policy of Water Env Threats to Oceans and Coasts: Energy Resources: Science and Policy	3 3 3 3	Fa,Sp,Su F Sp TBA	GVPT 200 60 credits; ENSP101 and 102 60 credits; ENSP101 and 102 60 credits; ENSP101 and 102	____ ____ ____ ____
GEOG 442 <i>or</i> AOSC 400 <i>or</i> GEO 437	Biogeography and Enviro. Change <i>or</i> The Atmosphere <i>or</i> Global Climatic Chng: Past and Pres	3 3 3	F F Sp, even # years	GEOG301, GEOG201/211; or perm. MATH 140 CHEM 131/132, MATH 140, GEO 100	____ ____ ____ ____
ENSP 386	Internship	3-6	F, Sp, Su	Perm.	

Advisor notes, approved course substitutions, etc:

>>> **TECHNIQUES & METHODS (9 credits):** Select at least 3 courses and 9 credits in consultation with your advisor. *Selections must be approved in advance.*

Course	Description	Cr	Offered	Prerequisites	Grade
GEOG 372	Remote Sensing	3	Sp, Su, W		
GEOG 373	Geographic Information Systems	3	F,W, Su		
GEOG 418	Field & Lab Techniques in Env Science	3	F	<i>The field component is taught in Sum Session; check Sched of Classes</i>	
GEOG 472	Advanced Remote Sensing	3	F	GEOG 372	
GEOG 473	GIS & Spatial Analysis	3	Sp	GEOG 373	
GEOG 498C <i>or</i> MATH 246	Climate Modeling and Analysis <i>or</i> Differential Equations	3 3	F F, Sp, Su	GEOG 445 MATH 141 and 240 or PHYS 161	
MATH 240	Introduction to Linear Algebra	4	F, Sp, Su		
MATH 241	Calculus III	4	F, Sp, Su		
PHYS 165	Intro to Programming in the Phys Sci	3	F	PHYS 141 or Physics AP score 3+	

Cont'd (over) →

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RESTRICTED ELECTIVES (9 credits): Select at least 6 credits from one area and 3 credits from the other. Also, course selections may not “count” twice, e.g., once in “Upper Level Requirements” and again in “Restricted Electives.” Students may suggest additions to this list by bringing a course syllabus to the faculty advisor and explaining how the course relates to their long-term academic or career interests.

>>> Area 1 - Physical and Biological Components

Course	Description	Cr	Offered	Prerequisites	Grade
AOSC 400	The Atmosphere	3	F	MATH 141, PHYS 161 or 171, or perm.	
AOSC 401	Global Environment	3	Sp	AOSC 400	
AOSC 434	Air Pollution	3	Sp	CHEM 113 and MATH 241 or perm.	
BSCI 460 <i>or</i> BSCI 462	Plant Ecology Population Ecology	3 3	F F	BSCI 160/161 BSCI 160/161 and MATH 220	____ ____
ENST 450	Wetland Ecology	3	F	BIOM 301.	
GEOG 340 <i>or</i> GEOL 340	Geomorphology <i>or</i> Geomorphology	3 4	TBA Sp	GEOG 201 GEOL 100 or GEOL 120	____ ____
GEOG398B	Adv Geographical Environmental Systems	3	Sp		
GEOG 441	The Coastal Ocean	3	Sp	GEOG 201.	
GEOG 442	Biogeography and Environmental Change	3	F	GEOG301, GEOG201/211; or perm.	
GEOG 445	Climatology	3	Sp	GEOG 345	
GEOL 437	Global Climatic Chng: Past and Present	3	Sp	CHEM 103, MATH 140, GEOL 100	
GEOL 444	Low Temperature Geochemistry	3	F	GEOL 100/110, GEOL 322, CHEM 131/132, MATH115 or perm.	
GEOL 452	Watershed and Wetland Hydrology	3	Fa	MATH 140, GEOL 100, CHEM 131/132, or perm	
GEOL453	Restoration Ecology	3	F	BSCI 160/161	
ENST 479	Tropical Ecology and Resource Mgt	3	Sp	BSCI 160/161. <i>Course has required travel-study component.</i>	
PLSC 471	Forest Ecology	3	Sp	BSCI 160/161	

>>> Area 2 - Human Dimensions

Course	Description	Cr	Offered	Prerequisites	Grade
ANTH 450	Environmental Anthropology	3	S	Jr. standing	
AREC 453	Natural Resources and Public Policy	3	F	ECON200, 201, and AREC 326	
AREC 454	Economics of Global Change	3	Sp	ECON200, 201, and AREC 326	
AREC 455	Economics of Land Use	3	F	ECON200, 201, and AREC 326	
GEOG 330	Society and Sustainability (Gen Ed UP, IS)	3	F		
GEOG 431	Culture & Natural Resource Mgt	3	F		
GEOG 435 <i>or</i> GEOG398C	Population Geography Population Geography	3 3	Sp Sp		
GVPT 306	Global Ecopolitics	3	F	GVPT 200	
ENST 440	Crops, Soils and Civilization	3	Sp		
ENST 441	Sustainable Agriculture	3	F		
SOCY 305 <i>or</i> SOCY 405	Scarcity and Modern Society Scarcity and Modern Society (seminar)	3 3	Sp Sp	3 cr. in SOCY or ENSP 102 or perm. 3 cr. in SOCY or ENSP 102 or perm.	

Advisor notes, approved course substitutions, etc: