

ENSP – Global Environmental Change

Reviewed 2.10.16 - WW

ENSP Core				UM General Education		
				Fundamental Studies (15 credits)		
Course	Title	Offered	Grade	Requirements	Course	Cr/AP/IB/D
All				Academic Writing (AW)		
ENSP101 (NS)	Intro to Env Science	Fa				3
ENSP102 (HS)	Intro to Env Policy	Sp		Professional Writing (PW)		
ENSP400 (SP)	Capstone	Fa,Sp		Oral Communication (OC)		
Calculus (one)				Math (MA)		
MATH220 (MA)	Elem Calculus I	Fa,Sp,Su	Grade	Calculus		
MATH130 (MA)	Calc for Life Sciences I	Fa,Sp,Su		ENSP Stat		
MATH140 (MA)	Calculus I (<i>recommended</i>)	Fa,Sp,Su		Analytical Reasoning (AR)		
Statistics (one)				Distributive Studies (25 credits)		
BIOM301 (AR)	Intro to Biometrics	Fa,W,Sp	Grade	Requirements		
GEOG306 (AR)	Intro to Quant Methods <i>(strongly recommended)</i>	Fa,Sp		Natural Sciences w/Lab (NL)		
PSYC200 (AR)	Stat. Meth in Psych	Fa,Sp,Su		ENSP Lab Sci		
				Natural Science (NS)		
One course from <u>each</u> category below:				History and/or Social Sci (HS1)		
Biology	Principles of Biology II	Fa, Sp, Su	Grade	ENSP 101		
BSCI106 (NL)				ENSP 102		
Chemistry	General Chemistry I	Fa, Sp, Su	Grade	History and/or Social Sci (HS2)		
CHEM131/132 (NL)				Humanities (HU1)		
Earth Sci	Geog of Env Systems	Fa, Sp, Su	Grade	Humanities (HU2)		
GEOG201/211 (NL)				Scholarship in Practice (SP, major)		
Economics (one)	Intro to Econ and Env Env, Econ, and Policy	Sp Fa	Grade	Scholarship in Practice (SP, non-major)		
AREC240 (HS)						
AREC241 (HS, IS)						
Geography (one)				I-Series (6 credits)*		
GEOG100 (HS)	Intro to Geography	Fa,Su	Grade	* May double-count with Distributive Studies		
GEOG130 (HS or SP)	Developing Countries	Fa, Su		Requirements		
GEOG140 (IS)	Natural Disasters	Fa, Sp		I- Series (IS)		
GEOG202 (CC)	World in Cultural Persp	Sp, Su		I- Series (IS)		
ENSP Graduation Requirements				Diversity (4-6 credits)*		
_____ Students must earn <u>C- or higher</u> in all courses used for ENSP				* May double-count with Distributive Studies		
Core and Concentration requirements.				Requirements		
_____ Students' major GPA must be 2.0 or higher.				Understanding Plural Societies (UP)		
				Understanding Plural Societies (UP) <i>or</i> Cultural Competency (CC)		
				3-6		
				0-3		
				Experiential Learning (0-3 credits)*		
				* May overlap with major requirements		
				Requirements		
				An internship is required in this concentration.		
				ENSP 386		
				3		
				UM Graduation Requirements		
				_____ <u>Up to 6 AP courses</u> may be used for Gen Ed		
				_____ There are at least 40 non-overlapping Gen Ed credits		
				_____ 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
GEOL 100	Introduction to Geology	3	F, Sp, Su		
MATH 141 <i>or</i> MATH 221	Calculus II [strongly recommended] <i>or</i> Elementary Calculus II	4 3	F, Sp, Su F, Sp, Su	MATH 140 MATH 220	____ ____
PHYS 141 <i>or</i> PHYS 121	Prin of Physics [strongly recomm] Fund of Physics	4 4	F, Sp F, Sp	No longer offered MATH 115	____ ____
CHEM 231/232	Organic Chemistry I	4	F, Sp, Su	CHEM 131/132	____
ENST 200 <i>or</i> GEOL 102	Introduction to Soil Science* <i>or</i> Historical Geology	4 4	Fa Sp	CHEM 131/132 GEOL 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 Dr. Whittemore 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	GEOG 201 BSCI 106	____ ____
GEOG 331	Intro to Hum Dimen of Global Chng	3	F	GEOG 201 <i>or</i> GEOG 202	
GEOG 345 <i>or</i> GEOG 398B	Intro to Climatology Adv Geographical Environmental Systems	3 3	F S	GEOG 201 GEOG201	
GVPT 306 <i>or</i> AREC 332 <i>or</i> ENSP340 <i>or</i> ENSP342 <i>or</i> ENSP350	Global Ecopolitics <i>or</i> Intro to Natural Resource Policy Science, Ethics, and Policy of Water Env Threats to Oceans and Coasts: Integrated Policy Response Energy Resources: Science and Policy	3 3 3 3 3	F F Sp F	GVPT 200 No longer offered. 60 credits; ENSP101 and 102 60 credits; ENSP101 and 102 60 credits; ENSP101 and 102	____ ____ ____ ____ ____
GEOG 442 <i>or</i> GEOG 445 <i>or</i> AOSC 400 <i>or</i> GEOL 437	Biogeography <i>or</i> Climatology <i>or</i> The Atmosphere <i>or</i> Global Climatic Chng: Past and Pres	3 3 3 3	F Sp F Sp	GEOG 342 <i>or</i> BSCI361 GEOG 345 MATH 140 CHEM 131/132, MATH 140, GEOL 100	____ ____ ____ ____
ENSP 386	Internship	3-6	F, Sp, Su	Perm.	

>>> 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 <i>or</i> ENST 415	Geographic Information Systems GIS Applications in Soil Science	3 3	F,W, Su F		
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 <i>or</i> 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 <i>or</i> 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.”**

>>> 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	F F	BSCI 106 BSCI 106 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	3	F	GEOG 342 or 398B	
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 106	
ENST 479	Tropical Ecology and Resource Mgt	3	Sp	BSCI 106. <i>Course has required travel-study component.</i>	
PLSC 471	Forest Ecology	3	Sp	BSCI 106	

>>> Area 2 - Human Dimensions

Course	Description	Cr	Offered	Prerequisites	Grade
ANTH 450	Environmental Anthropology	3	F	Jr. standing	
AREC 453	Natural Resources and Public Policy	3	F	ECON200, 201, and 326	
AREC 454	Economics of Global Change	3	Sp	ECON200, 201, and 326	
AREC 455	Economics of Land Use	3	F	ECON200, 201, and 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	Sp	GVPT 200	
ENST 440	Crops, Soils and Civilization	3	Sp		
ENST 441	Sustainable Agriculture	3	F		
SOCY 305	Scarcity and Modern Society	3	F, Sp	3 cr. in SOCY or ENSP 102 or perm.	

Advisor notes, approved course substitutions, etc: