SOIL, WATER & LAND RESOURCES – CORE Program

Reviewed: 6.3.15

UM Core: ENGL 101_____, (HL)_____, (HA) _____, (HL/HA/HO/IE) _____, (SH) _____, Diversity _____
Adv. Writing _____, Adv. Studies_____ , (SB)_____ , (SB/IE) _____.

Grading Policy: Environmental Science and Policy students must earn C- grades or higher in all ENSP core courses and in all required courses and restricted electives of the selected area of concentration.

Required from ENSP Core:

Course	Title	Cr	Offered +	Prerequisites	Grade	Completed	Notes
All three:							
ENSP 101 (PS)	Intro. to Environmental Science	3	F	-	___	_____	_____
ENSP 102	Intro. to Environmental Policy	3	Sp	-	___	_____	_____
ENSP 400 (AS)	Capstone in Env. Sci & Policy	3	Sp, F	Senior year; ENSP 101 and 102	___	_____	_____
Calculus:							
MATH 140 (MS)	Calculus I (recommended)	4	Sp, F, Su	dept. perm. or MATH 115 w/C or better	___	_____	_____
or MATH 220 (MS)	Elementary Calculus I	3	Sp, F, Su	dept. perm. or MATH 113, or 115	___	_____	_____
Statistics (one):							
BIOM 301	Introduction to Biometrics	3	Sp, F	MATH 115	___	_____	_____
ECON 321	Economic Statistics	3	Sp, F	ECON 200, 201, MATH 220	___	_____	_____
GEOG 306	Introduction to Quant. Methods	3	Sp, Su		___	_____	_____
PSYC 200	Statistical Methods in Psychology	3	Sp, F, Su	PSYC 100, MATH 111 or 140 or 220	___	_____	_____
SOCY 201	Intro. Statistics for Sociology	4	Sp, F, Su	SOCY 100 and MATH 111 or equiv.	___	_____	_____
STAT 400	Applied Prob and Statistics I	3	Sp, F, Su	MATH 141	___	_____	_____
Chemistry:							
CHEM 131/132 (PL)	General Chemistry I	3/1	Sp, F, Su	placement in MATH 220 or higher			
Earth Sciences:							
ENST 200 (LL) *and*	Fundamentals of Soil Science	4	F	CHEM 131/132 or dept. perm;	___	_____	_____
GEOL 100/110 (PL) *or*	Physical Geology/Lab	3/1	Sp, F, Su	-	___	_____	_____
GEOG 201/211 (PL)	Geography of Env. Systems/Lab.	3/1	Sp, F, Su	-	___	_____	_____

And: One (1) course from 3 of the next 4 categories – *BSCI 106 strongly recommended*

Biology:							
BSCI 106 (LL)	Principles of Biology II	4	Sp, F, Su	placement in MATH 220 or higher			
Economics (one):							
AREC 240 (SB)	Intro. to Economics and the Envir.	4	Sp	MATH 220 or higher recommended	___	_____	_____
AREC 241	Environment, Econ., and Policy	4	Fa	MATH 220 or higher recommended	___	_____	_____
ECON 200 (SB)	Principles of Micro-Economics	4	Sp, F, Su	MATH 110 or higher			
Geography (one):							
GEOG 100 (SB)	Intro to Geography	3	F	-	___	_____	_____
GEOG 130 (SB/D)	Developing Countries	3	Fa, Su	-	___	_____	_____
GEOG 140 (PS)	Natural Disasters	3	F	-	___	_____	_____
GEOG 202 (SB)	Intro to Human Geography	3	Sp	-	___	_____	_____
Govt & Politics (one):							
ENSP 330	Introduction to Environmental Law	3	F, S	Permission of dept; Junior standing.	___	_____	_____
ENSP 340	Water: Science, Ethics, and Law	3	F	Permission of dept; Junior standing.			
ENSP 342	Oceans: Integrated Policy	3	S	Permission of dept; Junior standing.	___	_____	_____
GVPT 273	Intro. to Environmental Politics	3	Sp	GVPT 170 or ENSP 102	___	_____	_____

Required for SOIL, WATER & LAND RESOURCES – 18-22 credits. Shaded courses are no longer being offered; the curriculum is being revised to reflect this.

Course	Description	Cr	Offered	Prerequisites	Grade	Completed	Notes
Select one:							
ENST 442	Remote Sensing for Ag & Nat Res *or*	3	Sp	-			
GEOG 372	Remote Sensing	3	Fa,Sp,Su,W	-			
Select one:							
GEOL 340	Geomorphology	4	Sp	GEOL 100			
GEOG 340	Geomorphology	3	TBA	Usually Summer or Winter, if offered			
Select one:							
GEOL 451	Groundwater Geology	3	F	Check with professor			
GEOL 452	Watershed and Wetland Hydrology	3	F	Check with professor			
ENST 417*	Soil Hydrology and Physics	3	F	ENST 200 & course in physics; check w/prof.			
Select two:	Skill development:						
ENST 308	Field Soil Morph – soil judging	3	F, Sp, Su	ENST 200			
ENST 413	Soil and Water Conservation	3	Sp	ENST 200			
ENST 415	GIS Applications in Soil Science	4	Sp	ENST 200			
ENST 425	Terrestrial Bioremediation	3	Sp	1 course in Biol. and CHEM 131/132 or dept.			
ENST 423	Soil and Water Pollution	3	Sp	ENST 200 and CHEM 231/232 or permission of dept.; check with your advisor			
ENST424	Field Study in Soil Morphology	3	Su	ENST 200			
Select two:	Depth:						
ENST 411	Principles of Soil Fertility	3	F	ENST 200			
ENST 414	Soil Morphology Genesis & Classific.	4	F	ENST 200			
ENST 417*	Soil Hydrology and Physics	3	F	ENST 200 & course in physics; or dept. perm.			
ENST 421	Soil Chemistry	4	Sp	ENST 200			
ENST 422	Soil Biochem & Microbial Ecology	3	F	ENST 200, CHEM 105/231 or dept. perm.			

* ENST 417 may not be used to fill two requirements

RESTRICTED ELECTIVES – at least 3 courses and 9 credits: *GEOG373 is strongly recommended.*

Course	Description	Cr	Offered	Prerequisites	Grade	Completed	Notes
ENCE 315	Intro. to Environmental Engineering	3	Sp,F	CHEM 131/132 and PHYS 161.			
ENST 430	Wetland Soils	3	Sp	ENST 200			
ENST 440	Crops, Soils and Civilization	3	Sp	-			
ENST 450	Wetland Ecology	3	F	BIOM 301. Offered in "even" years, e.g., 2016.			
ENST 451	Water Quality: Field & Lab Methods	3	Sp	CHEM 131/132 *and* CHEM 231/232			
GEOG 345	Introduction to Climatology	3	F				
GEOG 373	Geographic Information Systems	3	F,Sp,W,Su				
GEOG 475	Advanced Computer Cartography	3	Sp	GEOG 373			
GEOG 472	Remote Sensing	3	Fa	GEOG 372			
GEOG 473	Geog. Info. Sys. and Spatial Analysis	3	Sp	GEOG 373 and GEOG306 or equivalent.			
ENSP 386	Internship	3	Sp,F,Su	Internship proposal approved			

Recommended preparation for GRADUATE SCHOOL in Soil and Water Sciences: MATH 141 *or* MATH 221; PHYS 121 *and* 122; CHEM 231/232 *and* 241/242.