Checklist for MS in Environmental Sciences Thesis Track

39 Credit Hours

Student Name: Student Number:

Specialization: Advisor:

All of the followi	ng:		NOTES
☐ ENVS 6002	Research Topics in Environmental Science	3	
☐ GEOG 5265	Sustainability in Resources Management	3	
	OR		
☐ GEOG 5440	Science, Policy and the Environment	3	
☐ GEOG 6750	Research Design	3	
☐ ENVS 6800	Community-Based Research Practicum	3	
☐ GEOG 6950	Master's Thesis Preparation and Writing	3	
24 Hours of Elec	24 Hours of Elective Courses		

24 Hours of Elective Courses

PHYSICAL/ECOLOGICAL SCIENCE COURSES

<u>For the General MS Degree with No Specialization Option</u>: at least 4 courses, with at least 1 course in the physical sciences and 1 course in the ecological sciences, 1 of these courses must be field/lab-based.

<u>For the MS Degree with a Specialization Option</u>: at least 1 course, which must be field/lab-based if a field/lab-based class was not taken as part of the concentration.

Courses considered field/lab courses are marked with an asterisk (*).

Physical Sciences				
\Box	ENVS 5010	Landscape Geochemistry	3	
Ħ	ENVS 5020	Earth Environments and Human Impacts	3	
Ħ	* ENVS 5280	Environmental Hydrology	4	
	ENVS 5720	Climate Change: Causes, Impacts and Solutions	3	
	ENVS 6220	Toxicology	3	
	GEOG 5240	Geomorphology	3	
	GEOG 5270	Glacial Geomorphology	3	
	GEOG/ENVS 5740	Geography of Soils	3	
	* GEOG 5995	Travel Study: Patagonia	4	
	GEOL 5030	Environmental Geology	3	
	* CHEM 5010	Advanced Inorganic Chemistry	4	
	* CHEM 5110	Advanced Analytical Chemistry	4	
	* CHEM 5310	Advanced Organic Chemistry	4	
	* CHEM 5530	Advanced Physical Chemistry	4	
	CHEM 5700	Environmental Chemistry	3	
	CHEM 5710	Air Pollution Chemistry	3	
	CHEM 5720	Atmospheric Sampling and Analysis	3	
	CVEN 5333	Surface Water Hydrology	3	
	CVEN 5334	Groundwater Hydrology	3	
	CVEN 5335	Vadose Zone Hydrology	3	
	CVEN 5336	Urban Runoff Quality and Quantity Modeling	3	
	CVEN 5343	Open Channel Hydraulics	3	
	CVEN 5344	Unsteady Open Channel Hydraulics	3	
	CVEN 5393	Water Resources Development and Management	3	
	CVEN 5401	Introduction to Environmental Engineering	3	
	CVEN 5460	Introduction to Sustainable Urban	3	

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Curriculum for Fall 2018 forward.

CVEN 5461 Defining and Measuring Sustainability 3	UII	iversity of Colorado			
□ CVEN 5462 Theories of Sustainable Infrastructure 3 □ CVEN 5464 Fundamentals of Sustainability and Climate 3 □ CVEN 5480 Hazardous Wastes and Stre Remediation 3 □ CVEN 5481 Rustainable Water Systems Policy and 3 □ CVEN 5481 Risk Assessment in Environmental 3 □ CVEN 5481 Risk Assessment in Environmental 3 □ Even 5481 Risk Assessment in Environmental 3 □ Even 5782 Advanced Soils Engineering 3 Ecological Sciences 1 ENVS 5731 Mountain Biogeography 3 □ BIOL 5050 Advanced Ecology 3 3 □ BIOL 5052 Advanced Ecology 3 3 □ BIOL 5052 Advanced Ecology 3 3 □ BIOL 5335 Plant Systematics 3 9 □ BIOL 5330 Evolution and Diversification of Plants 3 9 □ BIOL 5415 Fior act Colorat			Infrastructure		
CVEN 5464		CVEN 5461	Defining and Measuring Sustainability	3	
CVEN 5480		CVEN 5462		3	
□ CVEN 5481 Planning Planning 3 □ CVEN 5494 Risk Assessment in Environmental Engineering 3 □ CVEN 5708 Advanced Solis Engineering 3 □ CNYEN 5708 Advanced Solis Engineering 3 □ *ENYS 5731 Mountain Biogeography 3 □ BIOL 5050 Landscape Ecology 3 □ BIOL 5050 Landscape Ecology 3 □ BIOL 5053 Disease Ecology 3 □ BIOL 5315 Plant Systematics 3 □ BIOL 5316 Plant Systematics 3 □ BIOL 5335 Plant Science 3 □ BIOL 5335 Plant Science 3 □ BIOL 5415 Microbial Ecology 3 □ BIOL 5416 Aguatic Ecology 3 □ BIOL 5416 Applied Environmental Biology 3 □ BIOL 5450 Marine Biology 3 □ BIOL 5460 Environmental Toxicology		CVEN 5464		3	
□ CVEN 5481 Planning		CVEN 5480	Hazardous Wastes and Site Remediation	3	
CVEN 5494 Engineering Secological Sciences		CVEN 5481		3	
Ecological Sciences 3 *ENVS 5731 Mountain Biogeography 3 BIOL 5050 Landscape Ecology 3 BIOL 5052 Advanced Ecology 3 BIOL 5053 Disease Ecology 3 BIOL 5053 Disease Ecology 3 BIOL 5315 P lant Systematics 3 BIOL 5335 P lant Systematics 3 BIOL 5335 P lant Systematics 3 BIOL 5345 Flora of Colorado 4 BIOL 5345 Flora of Colorado 4 BIOL 5416 Microbial Ecology 3 BIOL 5416 Microbial Ecology 3 BIOL 54416 Applied Environmental Biology 3 BIOL 5450 Marine Biology 3 BIOL 5450 Marine Biology 3 BIOL 5455 Comparative Environmental Physiology 3 BIOL 5450 Water Quality and Resources 3 BIVS 5305 Water Quality and Resources 3 ENVS 5450 Water Quality and Resources 3		CVEN 5494		3	
ENVS 5731 Mountain Biogeography 3		CVEN 5708	Advanced Soils Engineering	3	
BIOL 5050	Eco	ological Sciences			
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BIOL 5052 Advanced Ecology 3		BIOL 5050		3	
BIOL 5053 Disease Ecology 3 BIOL 5154 Conservation Biology 3 BIOL 5315 Plant Systematics 3 BIOL 5330 Evolution and Diversification of Plants 3 BIOL 5330 Evolution and Diversification of Plants 3 BIOL 5335 Plant Science 3 BIOL 5335 Plant Science 3 BIOL 5345 Flora of Colorado 4 BIOL 5415 Microbial Ecology 3 BIOL 5415 Microbial Ecology 3 BIOL 5416 Aquatic Ecology 3 BIOL 5416 Aquatic Ecology 3 BIOL 5416 Aquatic Ecology 3 BIOL 5450 Marine Biology 3 BIOL 5450 Environmental Physiology 3 BIOL 5460 Environmental Toxicology 3 BIOL 5460 Environmental Foliation 3 ENVS 5305 Water Quality and Resources 3 ENVS 5340 Multicultural Science Education 3 ENVS 5450 Urban Food and Agriculture Field Study 1 BIOL 5470 Sustainable Urban Agriculture Field Study 3 BIOL 5470 Sustainable Urban Agriculture Sustainable Urban Agriculture Sustainable Urban Agricult	\Box			3	
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GEOG 5080 Introduction to GIS 3		GEOG 5070		3	
□ GEOG 5081 Cartography and Computer Mapping 3					
		GEOG 5081	Cartography and Computer Mapping	3	

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Ш	GEOG 5085	GIS Applications for the Urban Environment	3		
	GEOG 5090	Environmental Modeling with Geographic Information Systems	3		
	GEOG 5091	Open Source Software for Geospatial Applications	3		
	GEOG 5092	GIS Programming and Automation	3		
	GEOG 5095	Deploying GIS Functionality on the Web	3		
	GEOG 5235	GIS Applications in the Health Sciences	3		
	GEOG 6700	Integrated Methods	3		
	BIOL 5474	Ecological Methods	4		
	CVEN 5345	Computational Methods for Water Resources	3		
		duate Course (3 hours) for the General MS			
an	y of the electives listed	d above. This course should be chosen in cl	ose	cooperation with the advisor.	
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	Specialization Option				
Fa		15			
EC	osystems		10	D. avidand	
<u> </u>	ENVS 5010	Landscape Geochemistry	3	Required	
	BIOL 5415	Microbial Ecology	3	Required	
	Choose two:				
	* ENVS 5731	Mountain Biogeography	3		
	ENVS 6220	Toxicology	3		
	BIOL 5154	Conservation Biology	3		
	GEOG 5060	Remote Sensing I: Introduction to Environmental Remote Sensing	3		
En	vironmental Health (El	NVS 6200, Risk Assessment is a prerequisite o	of the	Environmental Health option)	
$\overline{\Box}$	ENVS 6220	Toxicology	3	Required	
$\frac{\sqcup}{\sqcap}$	ENVS 6230	Environmental Epidemiology	3	Required	
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<u> </u>	GEOG 5710	Climate Change, Disasters and Health	3		
	ENVS 6210	Human Health and Environmental Pollution	3		
	ANTH 5600	Medical Anthropology	3		
	PUAD 5633	Seminar in Natural Resource and Environmental Health Law	3		
Environmental Science Education (This concentration corresponds with the Graduate Environmental Science					
Ed	ucation Certificate.)	M. R. R. v.I.O.C. 51 C	1 2	Doguirod	
<u> </u>	ENVS 5340	Multicultural Science Education	3	Required	
	ENVS/SECE 5650	Environmental Education	3	Required	
	Choose two:				
	ANTH 5170	Culture and the Environment	3		
	BIOL 5154	Conservation Biology	3		
	COMM 5282	Environmental Communication	3		
	GEOG 5365	Sustainability and Resource Management	3		
	GEOG 5335	Contemporary Environmental Issues	3		
一	GEOG 5440	Science, Policy, and the Environment	3		
믐	PSCI 5354	Environmental Politics and Policy	3		
Geospatial Analysis (This concentration tracks towards the Graduate GISci Certificate, but does not meet the full					
	quirements of this certific		JUI (cooato, bat about not most the full	
	GEOG 5080	Introduction to GIS	3	Required	

Last Updated: 09.08.2020

	GEOG 5090	Environmental Modeling with Geographic Information Systems	3	Required		
	Choose two:					
	GEOG 5092	GIS Programming and Automation	3			
	CVEN 5382	GIS Spatial Database Development	3			
	CVEN 5385	GIS Relational Database Systems	3			
	CVEN 5386	GIS Lab	3			
Wa	Water Systems					
	* ENVS 5280	Environmental Hydrology	4	Required		
	and either					
	CVEN 5334	Groundwater Hydrology	3	Required		
	OR					
	CVEN 5335	Vadose Zone Hydrology	3	Required		
	Choose two:					
	BIOL 5416	Aquatic Ecology	3			
	ENVS 5410	Aquatic Chemistry	3			
	GEOG/GEOL 5251	Fluvial Geomorphology	3			
	CVEN 5333	Surface Water Hydrology	3			
	CVEN 5334	Groundwater Hydrology	3			
	CVEN 5335	Vadose Zone Hydrology	3			
	CVEN 5336	Urban Runoff Quality and Quantity Modeling	3			
	CVEN 5393	Water Resources Development and Management	3			

ADVISING NOTES

- Students should fill out and submit all relevant department forms for their files. Importantly, all petitions for course substitutions and identification of where courses fit as electives, with the subsequent approval/denial, should be submitted to this file.
- By the end of the first semester, each student should identify and declare a graduate advisor in the area of the student's interests or specialization. Students should file the Graduate Student – Faculty Advisor form by the first week of the second semester.
- Additionally, by the end of the first semester, students should determine whether or not s/he is
 pursuing the thesis or non-thesis option. If pursuing the thesis option, students should begin
 work under the guidance of their graduate advisor (see above) to develop a thesis topic and
 identify a thesis committee. The Graduate Student Faculty Committee form is due to the
 department by the third semester of the student's degree program.
- Many of the electives have pre-requisites; students must have met these requirements in order to take the course.
- Students may transfer up to 9 hours of approved graduate-level credit into the program. These courses must be approved by the Graduate Director and they may not replace core courses.
- Students may count up to 6-credit hours of Independent Study, with a maximum of 3-credit hours per Independent Study toward elective credit in the degree program as approved by the Graduate Director. No more than 3 credit hours of independent study may be taken with the same instructor, and they may not be taken in the same term.
- Students may count up to 6-credit hours of internship in total, but only 3-credit hours per internship (two sponsorships may be sponsored by the same professor, but they may not be the same internship or project). Please note that a maximum of 6 total credit hours of internship and independent study, combined, may apply.

Last Updated: 09.08.2020

Curriculum for Fall 2018 forward.

- Students may not count 4000-level courses towards electives in the program; this may be petitioned to the Graduate Committee in exceptional cases.
- Students may take a maximum of 2 online courses, or petition to the Graduate Committee in exceptional cases to apply more than two online courses.
- Students may enroll in thesis preparation and writing hours only after submission of the signed committee form (see above), which requires approval of the thesis proposal.
- Students will not receive a grade for thesis preparation and writing hours until the thesis is successfully defended.
- Students must follow the graduate school deadlines for submission of paperwork for the
 graduation application, comprehensive exam, and any other deadlines, in addition to
 departmental guidelines and deadlines. Links to these can be found on the GES/MS website:
 http://www.ucdenver.edu/academics/colleges/CLAS/Departments/ges/Programs/MasterofScience/Pages/Forms.aspx

Curriculum for Fall 2018 forward. Last Updated: 09.08.2020