

**Checklist for MS in Environmental Sciences  
Thesis Track  
39 Credit Hours**

Student Name:  
Specialization:

Student Number:  
Advisor:

All of the following:				NOTES
<input type="checkbox"/>	ENVS 6002	Research Topics in Environmental Science	3	
<input type="checkbox"/>	GEOG 5265	Sustainability in Resources Management	3	
		OR		
<input type="checkbox"/>	GEOG 5440	Science, Policy and the Environment	3	
<input type="checkbox"/>	GEOG 6750	Research Design	3	
<input type="checkbox"/>	ENVS 6800	Community-Based Research Practicum	3	
<input type="checkbox"/>	GEOG 6950	Master's Thesis Preparation and Writing	3	
<b>24 Hours of Elective Courses</b>				
<b>PHYSICAL/ECOLOGICAL SCIENCE COURSES</b>				
<p><b><i>For the General MS Degree with No Specialization Option:</i> 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.</b></p> <p><b><i>For the MS Degree with a Specialization Option:</i> at least 1 course, which must be field/lab-based if a field/lab-based class was not taken as part of the concentration.</b></p> <p><b><i>Courses considered field/lab courses are marked with an asterisk (*).</i></b></p>				
<i>Physical Sciences</i>				
<input type="checkbox"/>	ENVS 5010	Landscape Geochemistry	3	
<input type="checkbox"/>	ENVS 5020	Earth Environments and Human Impacts	3	
<input type="checkbox"/>	* ENVS 5280	Environmental Hydrology	4	
<input type="checkbox"/>	ENVS 5720	Climate Change: Causes, Impacts and Solutions	3	
<input type="checkbox"/>	ENVS 6220	Toxicology	3	
<input type="checkbox"/>	GEOG 5240	Geomorphology	3	
<input type="checkbox"/>	GEOG 5270	Glacial Geomorphology	3	
<input type="checkbox"/>	GEOG/ENVS 5740	Geography of Soils	3	
<input type="checkbox"/>	* GEOG 5995	Travel Study: Patagonia	4	
<input type="checkbox"/>	GEOL 5030	Environmental Geology	3	
<input type="checkbox"/>	* CHEM 5010	Advanced Inorganic Chemistry	4	
<input type="checkbox"/>	* CHEM 5110	Advanced Analytical Chemistry	4	
<input type="checkbox"/>	* CHEM 5310	Advanced Organic Chemistry	4	
<input type="checkbox"/>	* CHEM 5530	Advanced Physical Chemistry	4	
<input type="checkbox"/>	CHEM 5700	Environmental Chemistry	3	
<input type="checkbox"/>	CHEM 5710	Air Pollution Chemistry	3	
<input type="checkbox"/>	CHEM 5720	Atmospheric Sampling and Analysis	3	
<input type="checkbox"/>	CVEN 5333	Surface Water Hydrology	3	
<input type="checkbox"/>	CVEN 5334	Groundwater Hydrology	3	
<input type="checkbox"/>	CVEN 5335	Vadose Zone Hydrology	3	
<input type="checkbox"/>	CVEN 5336	Urban Runoff Quality and Quantity Modeling	3	
<input type="checkbox"/>	CVEN 5343	Open Channel Hydraulics	3	
<input type="checkbox"/>	CVEN 5344	Unsteady Open Channel Hydraulics	3	
<input type="checkbox"/>	CVEN 5393	Water Resources Development and Management	3	
<input type="checkbox"/>	CVEN 5401	Introduction to Environmental Engineering	3	

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<input type="checkbox"/>	CVEN 5460	Introduction to Sustainable Urban Infrastructure	3	
<input type="checkbox"/>	CVEN 5461	Defining and Measuring Sustainability	3	
<input type="checkbox"/>	CVEN 5462	Theories of Sustainable Infrastructure Management	3	
<input type="checkbox"/>	CVEN 5464	Fundamentals of Sustainability and Climate Change	3	
<input type="checkbox"/>	CVEN 5480	Hazardous Wastes and Site Remediation	3	
<input type="checkbox"/>	CVEN 5481	Sustainable Water Systems Policy and Planning	3	
<input type="checkbox"/>	CVEN 5494	Risk Assessment in Environmental Engineering	3	
<input type="checkbox"/>	CVEN 5708	Advanced Soils Engineering	3	
<i>Ecological Sciences</i>				
<input type="checkbox"/>	* ENVS 5731	Mountain Biogeography	3	
<input type="checkbox"/>	BIOL 5050	Landscape Ecology	3	
<input type="checkbox"/>	BIOL 5052	Advanced Ecology	3	
<input type="checkbox"/>	BIOL 5053	Disease Ecology	3	
<input type="checkbox"/>	BIOL 5154	Conservation Biology	3	
<input type="checkbox"/>	BIOL 5315	Plant Systematics	3	
<input type="checkbox"/>	BIOL 5330	Evolution and Diversification of Plants	3	
<input type="checkbox"/>	*BIOL 5335	Plant Science	3	
<input type="checkbox"/>	*BIOL 5345	Flora of Colorado	4	
<input type="checkbox"/>	BIOL 5415	Microbial Ecology	3	
<input type="checkbox"/>	BIOL 5416	Aquatic Ecology	3	
<input type="checkbox"/>	* BIOL 5445	Applied Environmental Biology	3	
<input type="checkbox"/>	BIOL 5450	Marine Biology	3	
<input type="checkbox"/>	BIOL 5455	Comparative Environmental Physiology	3	
<input type="checkbox"/>	BIOL 5460	Environmental Toxicology	3	
<b>ENVIRONMENTAL-BASED SOCIAL SCIENCE COURSES (At least 1):</b>				
<input type="checkbox"/>	ENVS 5305	Water Quality and Resources	3	
<input type="checkbox"/>	ENVS 5340	Multicultural Science Education	3	
<input type="checkbox"/>	ENVS 5450	Urban Food and Agriculture	3	
<input type="checkbox"/>	ENVS 5460	Sustainable Urban Agriculture Field Study I	3	
<input type="checkbox"/>	ENVS 5470	Sustainable Urban Agriculture Field Study II	3	
<input type="checkbox"/>	ENVS 5650	Environmental Science Education	3	
<input type="checkbox"/>	GEOG 5230	Hazard Mitigation and Vulnerability Assessment	3	
<input type="checkbox"/>	GEOG 5265	Sustainability in Resources Management	3	
<input type="checkbox"/>	GEOG 5301	Population, Culture, & Resources	3	
<input type="checkbox"/>	GEOG 5335	Contemporary Environmental Issues	3	
<input type="checkbox"/>	GEOG 5350	Environment & Society in the American Past	3	
<input type="checkbox"/>	GEOG 5420	The Politics of Nature	3	
<input type="checkbox"/>	GEOG 5440	Science, Policy and the Environment	3	
<input type="checkbox"/>	GEOG 5710	Disasters, Climate Change and Health	3	
<input type="checkbox"/>	GEOG 5990	Travel Study: Costa Rica	4	
<input type="checkbox"/>	GEOG 5990	Travel Study: China	4	
<b>TECHNIQUES COURSES (At least 2):</b>				
<input type="checkbox"/>	ENVS 6200	Risk Assessment	3	
<b>Plus, 1 of the following:</b>				
<input type="checkbox"/>	ENVS 6230	Environmental Epidemiology	3	
<input type="checkbox"/>	GEOG 5050	Applied Spatial Statistics	3	
<input type="checkbox"/>	GEOG 5060	Remote Sensing I: Introduction to Environmental Remote Sensing	3	
<input type="checkbox"/>	GEOG 5070	Remote Sensing II: Advanced Remote Sensing	3	
<input type="checkbox"/>	GEOG 5080	Introduction to GIS	3	
<input type="checkbox"/>	GEOG 5081	Cartography and Computer Mapping	3	
<input type="checkbox"/>	GEOG 5085	GIS Applications for the Urban Environment	3	
<input type="checkbox"/>	GEOG 5090	Environmental Modeling with Geographic Information Systems	3	

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<input type="checkbox"/>	GEOG 5091	Open Source Software for Geospatial Applications	3	
<input type="checkbox"/>	GEOG 5092	GIS Programming and Automation	3	
<input type="checkbox"/>	GEOG 5095	Deploying GIS Functionality on the Web	3	
<input type="checkbox"/>	GEOG 5235	GIS Applications in the Health Sciences	3	
<input type="checkbox"/>	GEOG 6700	Integrated Methods	3	
<input type="checkbox"/>	BIOL 5474	Ecological Methods	4	
<input type="checkbox"/>	CVEN 5345	Computational Methods for Water Resources	3	
<b>Additional 1 Elective Graduate Course (3 hours) for the General MS degree without a concentration taken from any of the electives listed above. This course should be chosen in close cooperation with the advisor.</b>				
<input type="checkbox"/>				
<b>Specialization Options</b>				
<b>Air Quality</b>				
<input type="checkbox"/>	CHEM 5710	Air Pollution Chemistry	3	Required
<input type="checkbox"/>	ENVS 5730	Air Quality Modeling and Analysis	3	Required
	Choose two			
<input type="checkbox"/>	ENVS 5720	Climate Change: Causes, Impacts and Solutions	3	
<input type="checkbox"/>	CHEM 5720	Atmospheric Sampling and Analysis	3	
<b>Ecosystems</b>				
<input type="checkbox"/>	ENVS 5010	Landscape Geochemistry	3	Required
<input type="checkbox"/>	BIOL 5415	Microbial Ecology	3	Required
	Choose two:			
<input type="checkbox"/>	* ENVS 5731	Mountain Biogeography	3	
<input type="checkbox"/>	ENVS 6220	Toxicology	3	
<input type="checkbox"/>	BIOL 5154	Conservation Biology	3	
<input type="checkbox"/>	BIOL 5050	Seminar in Aquatic Ecology	3	
<input type="checkbox"/>	GEOG 5060	Remote Sensing I: Introduction to Environmental Remote Sensing	3	
<b>Environmental Health</b> (ENVS 6200, Risk Assessment is a prerequisite of the Environmental Health option)				
<input type="checkbox"/>	ENVS 6220	Toxicology	3	Required
<input type="checkbox"/>	ENVS 6230	Environmental Epidemiology	3	Required
	Choose two:			
<input type="checkbox"/>	GEOG 5710	Climate Change, Disasters and Health	3	
<input type="checkbox"/>	ENVS 6210	Human Health and Environmental Pollution	3	
<input type="checkbox"/>	ANTH 5600	Medical Anthropology	3	
<input type="checkbox"/>	PUAD 5633	Seminar in Natural Resource and Environmental Health Law	3	
<b>Environmental Science Education</b> (This concentration corresponds with the Graduate Environmental Science Education Certificate.)				
<input type="checkbox"/>	ENVS 5340	Multicultural Science Education	3	Required
<input type="checkbox"/>	ENVS/SECE 5650	Environmental Education	3	Required
	Choose two:			
<input type="checkbox"/>	ANTH 5170	Culture and the Environment	3	
<input type="checkbox"/>	BIOL 5154	Conservation Biology	3	
<input type="checkbox"/>	COMM 5282	Environmental Communication	3	
<input type="checkbox"/>	GEOG 5365	Sustainability and Resource Management	3	

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<input type="checkbox"/>	GEOG 5335	Contemporary Environmental Issues	3	
<input type="checkbox"/>	GEOG 5440	Science, Policy, and the Environment	3	
<input type="checkbox"/>	PSCI 5354	Environmental Politics and Policy	3	
<b>Geospatial Analysis</b> (This concentration tracks towards the Graduate GISci Certificate, but does not meet the full requirements of this certificate.)				
<input type="checkbox"/>	GEOG 5080	Introduction to GIS	3	Required
<input type="checkbox"/>	GEOG 5090	Environmental Modeling with Geographic Information Systems	3	Required
Choose two:				
<input type="checkbox"/>	GEOG 5092	GIS Programming and Automation	3	
<input type="checkbox"/>	CVEN 5382	GIS Spatial Database Development	3	
<input type="checkbox"/>	CVEN 5385	GIS Relational Database Systems	3	
<input type="checkbox"/>	CVEN 5386	GIS Lab	3	
<b>Water Quality</b>				
<input type="checkbox"/>	* ENVS 5280	Environmental Hydrology	4	Required
<input type="checkbox"/>	BIOL 5416	Aquatic Ecology	3	Required
Choose two:				
<input type="checkbox"/>	ENVS 5500	Aquatic Chemistry	3	
<input type="checkbox"/>	CVEN 5333	Surface Water Hydrology	3	
<input type="checkbox"/>	CVEN 5334	Groundwater Hydrology	3	
<input type="checkbox"/>	CVEN 5335	Vadose Zone Hydrology	3	
<input type="checkbox"/>	CVEN 5336	Urban Runoff Quality and Quantity Modeling	3	
<input type="checkbox"/>	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.

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- 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>