## APPLIED GEOSCIENCES, MSAG

The Online Master of Science in Applied Geosciences in the College of Liberal and Professional Studies and Department of Earth and Environmental Science (EES) is a 12-cu, graduate program designed to prepare mid-career professionals (preferably a minimum of 3-years' experience) in geoscience organizations (consulting, geotechnical, government, non-profit/NGO) for the next step in their careers. In this entirely online program, students take 8 cu's of required courses and 4 cu's of electives. As a culminating exercise, students must complete a Project Design capstone that is an applied project directly related to their career goals.

## Curriculum

Students are required to complete 12 cu's of graduate level course work for the program. Students must take eight required courses, four electives, and complete a Masters level Project Design capstone positively evaluated by two readers in order to earn the MS Applied Geosciences degree.

Code	Title	Course Units
<b>Required Courses</b>	;	8
EESC 5200	Aqueous Geochemistry	
EESC 5630	Hydrology	
EESC 6620	Environmental Groundwater Hydrology	
EESC 6770	Geocomputations	
EESC 6810	Applied and Environmental Geophysics	
EESC 6820	Geomechanics	
EESC 6840	Engineering Geology and Applied Structural Geology	
EESC 6998	Project Design	
Four Elective Cou	rses	4
Students will choo backgrounds and from a selection o career profession	ose four electives to complement their reach their career goals. Students choose of courses that are designed to help mid- als boost career opportunities.	
EESC 5704	Geologic Field Methods	
EESC 5720	Role of the Environmental Professional in Managing Contaminated Site Liability	
EESC 6606	Fate and Transport of Pollutants	
EESC 6664	Field Study of Soils	
EESC 6711	Contaminated site investigation, remediation, and long-term stewardship"	
EESC 6715	Water Resources for Geologists and Environmental Scientists	
EESC 6720	Landslides	
EESC 6850	Engineering Geology: Surficial Materials & Processes	
ENVS 5706	Modeling Geographical Objects	
ENVS 5716	Modeling Geographical Space	

The project design capstone research is the culmination of the student's career. The capstone draws on methodology directly related to the student's career goals for the program. Students are expected to submit their project design proposal and reader candidates as part of the Project Design capstone course (EESC 6998) in the first year of their program (second year for part-time students). Students should plan to spend a minimum of one year on the research and writing of the capstone.

## **Field Opportunities**

12

Students who did not take a field course in their undergraduate career and plan to apply for Professional Geologist licensure can take EESC 5704 *Geologic Field Methods* to fulfill the field component required by many states including Pennsylvania. This course must be taken in person to meet the requirements for state licensure and the instructor has adapted the course to a one week in person (daily field trips) model. For this model, online students will complete online exercises before traveling to Philadelphia where they will spend one week immersed in the course material. Upon returning home they will complete post-trip reports to complete the licensure requirements. In addition to this field course, several courses will have video taped field components and opportunities for students to do field work in their local area.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2025 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.

Project Design Capstone Requirement

**Total Course Units**