

Environmental Science

1. Have a strong background in areas of science which are relevant to environmental problems
2. Have sufficient scientific skills, knowledge, and intellectual abilities to approach future--as well as current--environmental issues
3. Have strong professional ethics
4. Be able to synthesize information obtained from different sources
5. Be able to read, understand, interpret, and critically evaluate scientific literature
6. Be able to extract useful information from oral presentations
7. Be able to write technical reports (using appropriate scientific language and concepts)
8. Be able to make oral presentations of technical information
9. Use the methodologies and models of science to select, define, solve, and evaluate problems independently and collaboratively
10. Be able to design and carry out data-collection or sampling protocols, using appropriate (and safe) laboratory and field techniques
11. Be able to design and conduct meaningful experiments
12. Be able to critically evaluate experimental data (including statistical analysis of experimental results)
13. Ask meaningful questions about real-world scientific issues
14. Make scientifically based decisions and solve problems drawing on concepts and experiences from relevant areas
15. Be able to describe phenomena with algebraic formulas, interpret graphs, and think quantitatively
16. Be able to use computers to simulate environmental processes
17. Be able to use existing information bases (library resources, computer databases, government documents, etc.)
18. Have a basic understanding of the biological and physical environment (including knowledge of physical geology, atmospheric science, and biogeography).
19. Be familiar with basic ecological concepts and ecological field methods
20. Be familiar with the techniques (and underlying theory) of analytical chemistry
21. Be familiar with geological concepts and field methods
22. Be familiar with a variety of current environmental problems and with remediation and restoration techniques that can be applied to those problems
23. Have in-depth knowledge in one of the fields of science developed in the Environmental Science Program (biology, chemistry, or earth science)

Learning goal	ESCI 301	ESCI 304	ESCI 305	ESCI 315	ESCI 320	ESCI 330	ESCI 332	ESCI 348	ESCI 349	ESCI 352	ESCI 370	ESCI 372	ESCI 375	ESCI 395	ESCI 498	ESCI 499	Intro Biol	Calculus	Gen Chem	Chem 225-6	CHEM 344	ENST 301	GEOG 203	GEO 118	GEO 377	Physics
Have a strong background in areas of science which are relevant to environmental problems	H	H				L		M			H	H	H		H	H	M		L	M	M		M	H	H	M
Have sufficient scientific skills, knowledge, and intellectual abilities to approach future--as well as current--environmental issues	H	M				L		M			H	H	H		H	H	L	M					L	M	M	M
Have strong professional ethics	H	M				L					H	H	H		H	H	L								H	H
Be able to synthesize information obtained from different sources	M	L				H		M			H	H	H		H	H	L							M	H	
Be able to read, understand, interpret, and critically evaluate scientific literature	M	M				L		L			H	H	H		H	H								L	H	
Be able to extract useful information from oral presentations	M	M				L					L	L	M	H	M	M	L							L	H	
Be able to write technical reports (using appropriate scientific language and concepts)	L	L							M		M	M	H		H	H	L		L		M			L	H	
Be able to make oral presentations of technical information	M	L				L					L	L	H		H	H	L									H
Use the methodologies and	M	M				M					M	H	H		M	H								H	H	L

Learning goal	ESCI 301	ESCI 304	ESCI 305	ESCI 315	ESCI 320	ESCI 330	ESCI 332	ESCI 348	ESCI 349	ESCI 352	ESCI 370	ESCI 372	ESCI 375	ESCI 395	ESCI 498	ESCI 499	Intro Biol	Calculus	Gen Chem	Chem 225-6	CHEM 344	ENST 301	GEOG 203	GEOG 118	GEOG 377	Physics
models of science to select, define, solve, and evaluate problems independently and collaboratively																										
Be able to design and carry out data-collection or sampling protocols, using appropriate (and safe) laboratory and field techniques	H	H			L			M			L	L	H		M	H					M			H	H	
Be able to design and conduct meaningful experiments	M	H						M					H		M	H					M			L	M	
Be able to critically evaluate experimental data (including statistical analysis of experimental results)	M	H						M			L	M	H		H	H	L				H			M	M	
Ask meaningful questions about real-world scientific issues	H	M			L			M			H	H	H		H	H								M	H	
Make scientifically based decisions and solve problems drawing on concepts and experiences from relevant areas	H	M			M						M	H	H		M	H								M	H	
Be able to describe phenomena with algebraic formulas, interpret graphs, and think quantitatively	H	H						M					H		*	*		H			M			L	L	M
Be able to use computers to simulate environmental processes	M	H			M						L	L	H		*	*										L
Be able to use existing information bases (library resources, computer databases, government documents, etc.)	H	M			H						H	H	H		H	H								L	H	
Have a basic understanding of the biological and physical environment (including knowledge of physical geology, atmospheric science, and biogeography).	H	H			L						H	M	H		M	M	M						H	M	H	
Be familiar with basic ecological concepts and ecological field methods	H	H			L						L	L	M		*	*	M							L	H	
Be familiar with the techniques (and underlying theory) of analytical chemistry								M			M	H	H		*	*					H			L	L	
Be familiar with geological concepts and field methods	L				L			H			H	H	H		*	*								M	H	
Be familiar with a variety of current environmental problems and with remediation and restoration techniques that can be applied to those problems	H	L			L						H	L	H		*	*								M	M	
Have in-depth knowledge in one of the fields of science developed in the Environmental Science Program (biology, chemistry, or earth science)	H	M									H	H	H		M	M	M		M	H	H		L	M	H	