



The Great Lakes environmental science (GLES) programs enable students to pursue graduate studies through two different interdisciplinary applied environmental science programs: a thesis-based master of arts (M.A.) and an internship-based professional master of science (M.S.).

## ABOUT THE PROGRAMS

Both GLES programs (master of arts and master of science) provide graduates with a broad understanding of the physical, chemical, biological, and social factors that constitute the Great Lakes ecosystems, while at the same time offering graduates the depth they need in a particular discipline to prepare them for entry into either a Ph.D. program or the workforce.

The GLES M.A. program offers a strong foundation in environmental science and allows students to approach problems from a purely scientific perspective. Graduates are trained to effectively deal with a broad range of problems and issues related to ecosystem structure and function within the Great Lakes and surrounding watersheds, which prepares them for advanced research, professional employment, or study at the Ph.D. level.

The GLES M.S. combines coursework in environmental science with business communication and project management classes and an internship experience. The M.S. program is designed to meet the needs of industry, consulting firms, nongovernmental organizations (NGOs), and governmental agencies, preparing graduates for leadership roles as they address a wide range of problems and issues related to the management of resources within the Great Lakes and surrounding watersheds.

The GLES programs are administered through the Great Lakes Center (GLC), a multidisciplinary research, education, and service institute of Buffalo State with a primary focus on the Great Lakes. In addition to GLC faculty, members of the Geography and Planning, Biology, Chemistry, and Earth Sciences and Science Education departments are involved in the GLES programs.

## WHAT YOU'LL LEARN

The two programs have a common set of core courses and shared electives. The required core courses provide a foundation in Great Lakes ecosystem science and research skills, including quantitative analysis and geographic information systems (GIS). Electives include coursework in ecology, biology, chemistry, physical geography, and geology. Electives offer flexibility in coursework to strengthen a specialty area, which may include

- biogeochemistry,
- ecology,
- hydrology of watersheds and wetlands,
- environmental geochemistry and environmental methods,
- global climate change and atmospheric science,
- watershed planning and management,
- biodiversity and conservation of freshwater ecosystems.

## ADMISSION REQUIREMENTS

1. A bachelor's degree in a science (e.g., chemistry, biology, geography, geology, earth science, environmental science) or mathematics discipline from an accredited college or university with a minimum cumulative GPA of 3.0 (4.0 scale).
2. Scores on the Graduate Record Examination (GRE) general test.
3. An official transcript of the applicant's undergraduate program, giving evidence of satisfactory completion of college science and mathematics courses. It is strongly recommended that all applicants have introductory college coursework in chemistry, biology, geography, geology, and mathematics or statistics. The absence of any of this coursework may be regarded as a deficiency, and students may be required to complete this recommended coursework before graduation.
4. Two letters of recommendation evaluating the applicant's academic qualifications.
5. A written statement of the applicant's academic background, academic and career plans, and area(s) of research interest.

In addition, all applicants should review the *Admission to a Graduate Program* section in the Graduate Catalog (<http://catalog.buffalostate.edu/graduate>).



## GREAT LAKES ENVIRONMENTAL SCIENCE (GLES)

### ABOUT THE GREAT LAKES CENTER

Understanding a complex system like the Great Lakes requires specialized knowledge from many disciplines. The Great Lakes Center at Buffalo State actively conducts collaborative research with other institutions and agencies in the United States, Canada, and Europe. Great Lakes Center research focuses primarily on Lakes Erie and Ontario and their tributaries, although national and international projects are also a priority.

The Great Lakes Center's mission is to improve the quality of the environment by providing the best possible science to decision makers concerned with the health and sustainability of resources, with a primary focus within the Great Lakes and their watersheds. This is accomplished through high-quality research, informed and current graduate and undergraduate education, and dissemination of information to the public through outreach.

### BEYOND THE CLASSROOM

The location and facilities of Buffalo State offer unique opportunities to study the effects and interactions of physical and biological processes with the social and economic activities of humans living within the Great Lakes ecosystem. The Great Lakes contain approximately 20 percent of the world's fresh water. All the Great Lakes, exclusive of Lake Ontario, drain through Lake Erie and the Niagara River and flow past the college's

Great Lakes Center field station on the Niagara River. This waterway is also an international border flanked by large metropolitan populations with extensive zones of both agriculture and industry. This is a prime site for students who wish to study how humans both create and resolve ecosystem-scale problems, especially those related to freshwater systems.

### FOR MORE INFORMATION

#### Great Lakes Center

Chris Pennuto, GLES Program Coordinator  
Alexander Y. Karatayev, Great Lakes  
Center Director

<http://greatlakescenter.buffalostate.edu>  
Science and Mathematics Complex 319  
(716) 878-4329  
[greatlakes@buffalostate.edu](mailto:greatlakes@buffalostate.edu)

#### Graduate Admissions Office

[www.buffalostate.edu/graduateschool](http://www.buffalostate.edu/graduateschool)  
Cleveland Hall 204  
(716) 878-5601  
[gradoffc@buffalostate.edu](mailto:gradoffc@buffalostate.edu)

#### Financial Aid Office

[www.buffalostate.edu/offices/finaid](http://www.buffalostate.edu/offices/finaid)  
Moot Hall 230  
(716) 878-4901  
[finaid@buffalostate.edu](mailto:finaid@buffalostate.edu)

### ABOUT BUFFALO STATE

1300 Elmwood Avenue • Buffalo, NY 14222

Buffalo State is the largest comprehensive college in the State University of New York (SUNY) system. Our 125-acre campus is located in the city of Buffalo's cultural corridor, so students enjoy a self-contained, intimate campus within one of Buffalo's most exciting neighborhoods. Both on-campus and nearby off-campus housing are available.

Buffalo State offers an ideal college experience that includes

- faculty members who are committed to both scholarship and teaching;
- more than 160 undergraduate programs and 65 graduate programs;
- work experience through internships, applied research, and community service;
- an athletics program featuring varsity, intramural, and club sports;
- more than 100 diverse student organizations for making friends and developing leadership skills;
- a wide variety of academic, cultural, and entertainment programs on campus.

[www.buffalostate.edu](http://www.buffalostate.edu)

**Because of Buffalo State.**