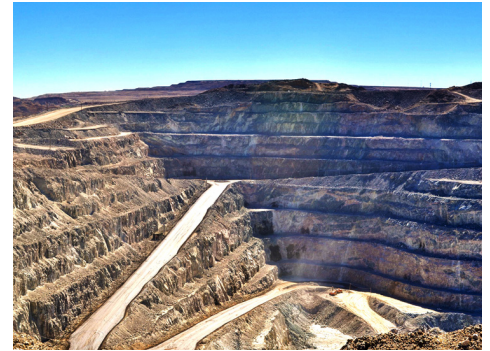


# MS and PhD Programs in GEOMECHANICS & GEOTECHNICAL ENGINEERING



The Geomechanics and Geotechnical Engineering program at the University at Buffalo is an integral component of the Department of Civil, Structural and Environmental Engineering and contributes to its long tradition of excellence in engineering research and education. The program supports MS and PhD degrees with robust offerings of graduate-level classes and opportunities for research in many areas of geomechanics and geotechnics. Research projects and coursework prepare our graduates for careers in geotechnical consulting, construction, research and academia. Funding is available for outstanding applicants.

The geotechnics faculty has a broad research domain as identified by the topics below. Other topics include site-response analysis, soil-structure interaction, structure-soil-structure interaction, behavior of geotechnical structures under extreme natural and man-made loadings, and advanced instrumentation and sensing systems for geotechnical applications. An integration of analytical and numerical methods, and large-scale experimentation, including the use of the largest geotechnical laminar box in the United States, is emphasized. The geotechnics faculty collaborate with structures faculty in the Department, with engineers and scientists in other departments and schools across UB, and with faculty and researchers across the United States.

## Course Offerings

- Mechanical Behavior of Geo-Materials
- Earthquake Engineering & Soil Dynamics
- Advanced Foundation Engineering
- Offshore & Bridge Foundation Design
- Risk & Reliability in Geotechnical & Structural Engineering
- Geotechnical Laboratory & In-situ Soil Characterization

## Project Topics

- Liquefaction induced lateral spreading
- Multi-hazard resiliency
- Offshore wind turbine foundation optimization
- Full-scale hybrid testing of soil-foundation-structure systems
- Long-term stability of critical flood protection systems
- Geotechnical risk analysis
- Stochastic simulations in geotechnical earthquake engineering

## Current Faculty Research Interests

### **Dr. Shahid Ahmad, [sahmad@buffalo.edu](mailto:sahmad@buffalo.edu)**

*Dynamics of soils and foundations; Vibration screening; Boundary element method and solid mechanics*

### **Dr. Kallol Sett, [kallolse@buffalo.edu](mailto:kallolse@buffalo.edu)**

*Earthquake engineering; Stochastic geomechanics; Risk analysis*

### **Dr. Anthony Tessari, [atessari@buffalo.edu](mailto:atessari@buffalo.edu)**

*Offshore and bridge foundation engineering; Geotechnical earthquake engineering; Flood protection systems*

### **Dr. S. Thevanayagam, [theva@buffalo.edu](mailto:theva@buffalo.edu)**

*Geotechnical earthquake engineering; Liquefaction; Ground improvement*