



BSGE Advisory Board Meeting Spring 2018

April 2nd, 2018 11:00 am - 12:00 pm, Eastern

Dr. John Gierke, Chair, Geological and Mining Engineering and Sciences

Dr. Thomas Oommen, Chair, Geological Engineering Curriculum Committee

AGENDA

- Introduction
- ABET successful visit and recommendation
 - Update revised educational objectives (see next page for revision)
 - Update the revised student outcomes (see next page for revision)
 - Update and discussion on advertising senior design to get more industry projects
- Update the revised senior design project and evaluation form
- Charter for Advisory Board
- Advisory board details on the department webpage

The Advisory Board:

1. Shannon Lemke, Senior Geologist at Vitruvian Exploration LLC.
2. Patricia M. Bryan, President/Principal Geologist at Bryan Environmental Consultants, Inc.
3. Kevin Richards, Engineer, U.S. Army Corps of Engineers
4. Andy Smits, Engineering Manager, Inland Seas Engineering Inc.
5. Bill Griffin, Principal, U.P. Engineers & Architects Inc.
6. Ray Wuolo, Hydrogeologist, Barr Engineering.
7. One vacant (to be filled with someone who has petroleum background)

Revised educational objectives

Geological Engineering Program Educational Objectives

It is expected that within a few years of graduation Geological Engineering graduates of Michigan Tech will have:

1. Secured an entry level position or enrolled in an advanced degree program in energy resources engineering, mineral resources engineering, groundwater engineering, or geomechanics, with special emphasis on applications of geophysics in these areas.
2. Continued their professional development by activities such as:
 - Taking the FE exam
 - Attending short courses and professional seminars
3. Demonstrated abilities to perform as effective members of multidisciplinary design teams in the design of effective solutions to modern geological engineering problems and function and communicate in effective ways to meet the needs of a multicultural society in a professional and ethical manner, consistent with the well-being of the public in areas of health, safety and the quality of their environment. Evidence for demonstrating these abilities include, but are not limited to:
 - Successful completion of graduate degree
 - Presentations at professional conferences
 - Awards for professional accomplishments
 - Continued progress (employment and/or promotion) in their chosen career
 - Involvement in professional societies and service organizations
 - Presentations or other substantial service to the community organizations (K12, etc.) related to the profession.

Revised student outcomes

Student Outcomes for the B.S. in Geological Engineering

- A. an ability to apply knowledge of mathematics, science, and engineering
- B. an ability to design and conduct experiments, as well as to analyze and interpret data
- C. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- D. an ability to function on multidisciplinary teams
- E. an ability to identify, formulate, and solve engineering problems
- F. an understanding of professional and ethical responsibility
- G. an ability to communicate effectively
- H. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- I. a recognition of the need for, and an ability to engage in life-long learning
- J. a knowledge of contemporary issues
- K. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- L. an ability to think critically and demonstrate field competence