### Software Engineering

### Software Engineering Program Educational Objectives

The educational objectives of the Penn State Behrend Software Engineering Program are to produce graduates who, within three years after graduation, are able to:

A. Be employed in industry, government, or entrepreneurial endeavors to demonstrate professional advancement through significant technical achievements and expanded leadership responsibility;

B. Demonstrate the ability to work effectively as a team member and/or leader in an ever-changing professional environment; and

C. Progress through advanced degree or certificate programs in computing, science, engineering, business, and other professionally related fields.  
  
**Software Engineering Outcomes**

Graduates of the program are expected to demonstrate:

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 multi-disciplinary 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.

q) the ability to analyze, design, verify, validate, implement, apply, and maintain software systems.

r) the ability to appropriately apply discrete mathematics, probability and statistics, and relevant topics in computer science and supporting disciplines to complex software systems.

s) the ability to work in one or more significant application domains.