FOREST TECHNOLOGY PROGRAM – OUTCOME ASSESSMENT

At the Pennsylvania College of Technology by G. Andrew Bartholomay
What is Outcome Assessment?

- A rose by any other name...
- An assessment tool for evaluating...
  - Student performance
  - Course effectiveness
  - Program content
  - School goals
  - College mission
- Evaluation tied to Specific goals.
Outcome Assessment Tools

- Quantifiable
- Related to specific goals
- Reductionistic
- Serve in the data collection role of a feedback loop
Institutional Hierarchy

Pennsylvania College of Technology
Mission Statement

School of Natural Resources Management
6 School Goals

Forest Technology Program
18 Program Goals

Course Outcomes
Curriculum Objectives
Defining Program Outcomes

- SAF Accreditation Guidelines
- Faculty Curriculum Design
- Forestry Advisory Board
- College Curriculum Review
Defining Program Outcomes

School of Natural Resources Management Goals

Students shall...

- Acquire the skills and knowledge to utilize industry focused technology
- Demonstrate approved safety standards and procedures for their related industry
- Critically read, understand, and apply concepts from technical resources
- Demonstrate written and oral communications that meet professional standards
- Apply critical thinking skills in problem solving and trouble shooting
- Be exposed to industry professionals in their field of study and other appropriate work based experiences.

www.pct.edu/schools/nrm/mission.htm
Defining Program Outcomes

- SAF Accreditation
  - Standard I: Program Objectives
    “The program shall have clearly defined, publicly stated objectives…”*
  - Standard II: Curriculum
    “Broad content descriptions of these subject matter areas…,”* are provided.

Defining Program Outcomes

- Faculty Curriculum Design
  - Classes fulfill NRM goals
  - Course content meets SAF Standards
  - Entire curriculum addresses all institutional and accreditation goals
    - Student outcomes determined and listed in syllabi.
    - Outcome redundancy built-in among courses
Course Level Example

- **School of Natural Resources Management Goal**
  
  “*Students will...acquire the skills and knowledge to utilize industry focused technology.*”

- **Society of American Foresters – Standard II.f**
  
  “*Land Surveying: Hand compass; surveying equipment and procedures; pacing and chaining; map reading; deed and title search; land descriptions; computer mapping; GPS; GIS.*”

- **FOR 120 Forest Surveying I – Student outcome**
  
  Following course completion, students should be able to:
  
  - apply the fundamentals of plane surveying;
  - properly use and care for surveying equipment;
  - create and interpret maps;
  - understand the theory of measurements.
Course Outcome Check-List

- FOR 120 – Forest Surveying I
  - Pace
  - Hand Compass
  - Chaining
  - Differential Leveling
    - Handle Instrument
    - Set up Tripod
    - Level Instrument
    - Read Rod
    - Take Notes
Theory Outcome Assessment

- Targeted examination
  - Individual analysis of questions
- Directed Free-Writing
  - Graded or Ungraded
- Socratic Method?
Content Overlap

- Society of American Foresters – Standard II.f
  “Land Surveying: Hand compass; surveying equipment and procedures; pacing and chaining; map reading; deed and title search; land descriptions; computer mapping; GPS; GIS.”

- Courses addressing these outcomes…
  - Forest Surveying
  - Mensuration & Advanced Mensuration
  - Introduction to GIS/GPS
  - Forest Land Management
  - Forest Ecology
Outcome Assessment

- **Within Course**
  - Discover patterns of success and struggle
  - Revisit areas where knowledge is still lacking
  - Confer with faculty to address problems in other courses

- **Post-Course Evaluation**
  - Add, subtract, leave it alone?
  - Data analysis of outcomes
    - (Course/Program/Accreditation)
  - Additional content in upcoming classes if necessary
Outcome Assessment Tools

- **Exams/Quizzes/Assignments/Labs/Papers**
  - Usually **Holistic** by design.
  - Sometimes impractical to use for specific outcomes.
  - May require question by question analysis.

- **Checklists**
  - Lend themselves to binary analysis.
  - “Encourage” active student participation.
Assessment of the Assessments

- Pennsylvania College of Technology
  - "Hard Data" generated and used in upwardly mobile outcome assessment.
  - Upcoming Middle States Association of Colleges and Schools accreditation.

- School of Natural Resources Management
  - Applied to recruitment and retention.
  - Data used to assess college mission.

- Forest Technology Program
  - Accreditation
  - Continuous Assessment