



2014 ASME International Mechanical Engineering Education Conference

March 13 – March 15
San Juan, Puerto Rico

ABET Preparation Workshop

Presented by
ASME Committee on Engineering Accreditation (CEA)

Patsy Brackin, Rose-Hulman Institute of Technology

Mo Hosni, Kansas State University (*ASME Vice President, Board on Education*)

Chris Weisbrook, University of Missouri System

Bill Wepfer, Georgia Institute of Technology (*ASME Senior Vice-President, Public Affairs and Outreach Council*)

ABET Workshop Agenda

13 March 2014

8:00 AM - 11:45 AM

- 7:30 Breakfast
- 8:30 General Introductions (Mo Hosni)
- 8:45 What is the ASME CEA? (Mo Hosni)
- 9:00 Don't forget the APPM (Chris Weisbrook)
- 9:15 Recent and proposed changes (Chris Weisbrook)
- 9:30 Criteria II, III and IV (Patsy Brackin)
- 10:30 Break
- 10:40 Preparing materials for your visit (Mo Hosni)
- 11:00 Responding to your visit (Bill Wepfer)
- 11:30 Recent ABET Review Discussions

General Introductions

- Name
- Institution
- Position
- When is your next ABET visit?
- Where are you with your assessment cycle?
- (30 seconds)

ABET Organization Design

- ABET is a **federation** of 33 professional engineering & technical societies
- Neither institutions nor individuals are members of ABET
- ABET relies on the services of almost **2000 volunteers** and 33 full-time and five part-time staff



Advancing the Science and Practice of Fire Protection Engineering Internationally



ABET's 33 Societies



National Institute of Ceramic Engineers (NICE)



National Society of Professional Engineers®



Who in the U.S. Recognizes ABET?

- 33 Member & Associate Member Societies of ABET
- Council for Higher Education Accreditation (CHEA)
- State Boards for Engineering & Surveying Licensure & Registration (over 55 jurisdictions)
- U.S. Patent Office
- U.S. Reserve Officers Training Corps
- Council of Engineering Specialty Boards (CESB)
- Board of Certified Safety Professionals (BCSP)
- Accreditors in other disciplines
- U.S. Trade Office
- U.S. State Department
- Employers (position announcements)

Who Recognizes ABET outside the U.S.?

- Washington Accord (accreditation of engineering programs for engineers by accreditors in 14 countries)
- Sydney Accord (accreditation of bachelors level engineering technology programs by accreditors in 8 countries)
- Seoul Accord (accreditation of computing programs by accreditors in eight countries)
- Dublin Accord (Provisional recognition status of accreditation of associates level engineering technology programs)
- Other accreditors outside of the United States (MOUs)
- Ministries of Education (several countries)
- Employers (position announcements)

ABET accomplishes its purposes through commissions and standing committees

Commissions are:

- Engineering Accreditation Commission (EAC)
- Technology Accreditation Commission (TAC)
- Computing Accreditation Commission (CAC)
- Applied Science Accreditation Commission (ASAC)

Standing committees of each commission are:

- Nominating Committee
- Criteria Committee
- Training Committee
- Consistency
- Continuous Improvements Taskforce

ASME Committee on Engineering Accreditation (CEA)

- The Committee on Engineering Accreditation (CEA) is a standing committee of the ASME Board on Education.
- CEA has frontline responsibility for ASME's role in the accreditation of engineering degree programs through the ABET Engineering Accreditation Commission.
- CEA reviews matters related to accreditation criteria for mechanical engineering and related degree programs in the U.S.
- CEA develops and maintains a cadre of over 125 highly qualified program evaluators, and supports 60-90 on-campus evaluation visits each year.

ASME Committee on Engineering Accreditation (CEA) Membership & Meetings

- **CEA Membership**

- 22 members: 11 current PEVs, and 11 EAC members

- **CEA Meetings**

- CEA meets twice a year

1) July - Immediately preceding the EAC meeting at which final accreditation actions are taken. Examine all ME and Engineering Mechanics statements with shortcomings to assure consistency across programs. CEA also reviews PEVs performance.

2) November - at the IMECE, General business meeting.

ASME CEA Subcommittees

- **Subcommittee A:** ME Program Criteria and PEV Training (for ME program criteria only)
- **Subcommittee B:** PEV Management
- **Subcommittee C:** Nominations

Don't forget the Accreditation Policy and Procedure Manual!

by

Chris Weisbrook
University of Missouri System

<http://www.abet.org/DisplayTemplates/Detail.aspx?id=4222>

ACCREDITATION POLICY AND PROCEDURE MANUAL

Effective for Reviews During the
2014-2015 Accreditation Cycle

Incorporates all changes
approved by the
ABET
Board of Directors
as of
October 26, 2013

Please Note:

The ABET Board of Directors adopted revisions to ABET Constitution and the ABET By Laws in October 2012.

This ABET Accreditation Policy & Procedure Manual is undergoing review and potential revision to ensure alignment with the ABET Constitution and By Laws.

As this work proceeds, and until it is complete, Policies and Procedures that require interpretation will be governed by the revised ABET Constitution and By Laws.



Applied Science Accreditation Commission
Computing Accreditation Commission
Engineering Accreditation Commission
Engineering Technology Accreditation Commission

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Baltimore, MD 21201

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Fax: 410-625-2238
E-mail: accreditation@abet.org
Website: www.abet.org



APPM: Reminders and Suggestions

- II.A.2. Official logo may be used by accredited programs on website, in course catalogs and in publications. Request logo from info@abet.org.
- II.A.6. Identification of accredited program on website and in catalogs and publications must use this language:

“Accredited by the _____ Accreditation Commission of ABET, <http://www.abet.org>.”



APPM: Reminders and Suggestions

II.G.4.a. Submittal of Transcripts - Prior to arriving on-site, the team will request official transcripts of the most recent graduates from each program. Each program being evaluated will **provide official transcripts with associated worksheets and any guidelines** used by the advisors.

Send transcripts to team chair and PEV.

- *Be sure to include documentation for transfer courses, substitutions and exceptions. Include worksheets or degree audits used to verify students meet graduation requirements. Include curriculum sheets, lists of electives, etc.*
- *Make it easy for the PEV to interpret the transcripts.*

APPM: Reminders and Suggestions

II.G.6.b.(1) Facilities - Evaluators will examine to assure the instructional and learning environments are **adequate** and are **safe** for the intended purposes.

- *Walk through laboratories, classrooms and hallways to check for safety equipment and conditions, e.g., fire extinguishers properly mounted, eye baths in proper locations and working, safety procedures posted and being followed, etc.*

APPM: Reminders and Suggestions

II.G.6.b.(2) Materials - Evaluators will review **samples of displayed course materials** including course syllabi, textbooks, example assignments and exams, and examples of student work, typically ranging from excellent through poor.

- *Materials must be organized so PEV can easily find work related to courses and to each outcome.*
- *Some institutions are providing sample work electronically – organization is particularly important with electronic files!*

What's New Policy and Procedures Manual

Go to Accreditation Alerts to keep up with changes:

APPM:

<http://www.abet.org/keep-up-with-accreditation-changes/>

What's New

Policy and Procedures Manual

2014-2015 Accreditation Cycle

– Changes approved October 26, 2013

- II.A.6.a. Each ABET-accredited program **must publicly state** the program's educational objectives and **student outcomes**.
- II.A.6.b. Each ABET-accredited program must **publicly post annual student enrollment and graduation data per program**.
- *Requires immediate implementation by all programs accredited by ABET.*
 - *ABET will examine institutional websites beginning with the next academic semester to ensure compliance.*

What's New

Policy and Procedures Manual

2014-2015 Accreditation Cycle

– Changes approved October 26, 2013

II.A.7. When a program submits a request for evaluation to ABET, it agrees to disclose publicly its accreditation status to assist external stakeholders, such as students, parents, and the general public, in making appropriate education decisions.

What's New

Policy and Procedures Manual

2014-2015 Accreditation Cycle

– Changes approved October 26, 2013

II.A.7.a. ABET publicly identifies programs whose accreditation has been denied or withdrawn by ABET.

ABET will begin posting the information on its website commencing with the decisions made at the July 2015 accreditation commission meetings on reviews conducted in the 2014-2015 accreditation cycle.

What's New

Policy and Procedures Manual

2014-2015 Accreditation Cycle

– Changes approved October 26, 2013

II.A.7.b. If ABET denies or withdraws its accreditation, then the institution/program must provide, upon request from the public, a statement summarizing ABET's reasons for denial or withdrawal of accreditation; that statement can be accompanied by a response from the affected program addressing the ABET decision. This statement must be available within 60 days of the final decision by ABET. ABET will post on its public website a notice regarding the availability of this statement from the institution/program.

What's New

Policy and Procedures Manual

2014-2015 Accreditation Cycle

– Changes approved October 26, 2013

II.A.7.c. In the event that the program files an official request for appeal, reconsideration, or immediate re-visit, ... the 60-day period for public notification will begin when the ... processes have provided a final accreditation action.

Policy and Procedures Manual – Highlights from Previous Cycles

2013-2014 Accreditation Cycle Highlights

Section II.A.1. – This section explicitly states that an institution may not use the same program name to identify both an accredited and a non-accredited program.

Section II.E.3.d. – This section includes the revised scope for engineering technology program accreditation to include revised program naming requirements.

Policy and Procedures Manual

Change with 2013-2014 Accreditation Cycle

Section II.F.1.e. – This section explicitly provides for a **program to withdraw from accreditation** at any time in the process up to the Commissions' decision meetings in July.

Section II.G.7. – This section has been revised to **remove all constraints** for programs seeking **initial accreditation** to request **two-year retroactive** coverage for graduates.

Criteria for Accrediting Engineering Programs

- I. General Criteria
 - Criterion 1. Students
 - Criterion 2. Program Educational Objectives
 - Criterion 3. Student Outcomes
 - Criterion 4. Continuous Improvement
 - Criterion 5. Curriculum
 - Criterion 6. Faculty
 - Criterion 7. Facilities
 - Criterion 8. Institutional Support
- II. General Criteria for Masters Level Programs
- III. Program Criteria

What's New In Engineering Criteria

2013-2014 Accreditation Cycle Highlights

See bottom of Accreditation Alerts page for changes in Criteria for Accrediting Engineering Programs:

<http://www.abet.org/keep-up-with-accreditation-changes/>

Recent Changes: Criteria for Accrediting Engineering Programs

Definitions (Changed with 2011-2012 accreditation cycle)

- **Program Educational Objectives** – Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation.
- *Old definition previously included "career and professional accomplishments that the program is preparing graduates to achieve."*

Recent Changes: Criteria for Accrediting Engineering Programs

Definitions (Changed with 2011-2012 accreditation cycle)

- **Program Educational Objectives** – Program educational objectives are based on the needs of the program's constituencies.

Common mistakes:

- *Not considering needs of all constituencies in program educational objectives.*
- *Listing constituencies from which it is difficult to get input (e.g., state of Missouri, or graduate schools)*

Recent Changes - Criteria for Accrediting Engineering Programs

Definitions (Changed with 2011-2012 accreditation cycle)

- **Student Outcomes** – Student outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire **as they progress through the program.**

Recent Changes- Criteria for Accrediting Engineering Programs

Definitions (Updated with 2013-2014 accreditation cycle)

- **Assessment** – Assessment is one or more processes that identify, collect, and prepare data to evaluate the attainment of student outcomes. Effective assessment uses relevant direct, indirect, quantitative and qualitative measures as appropriate to the outcome being measured. Appropriate sampling methods may be used as part of an assessment process.
- *There is no longer a requirement to assess program educational objectives!*

Recent Changes- Criteria for Accrediting Engineering Programs

Definitions (Updated with 2013-2014 accreditation cycle)

- **Evaluation** – Evaluation is one or more processes for interpreting the data and evidence accumulated through assessment processes. Evaluation determines the extent to which **student** outcomes are being **attained**. Evaluation results in decisions and actions **regarding program improvement**.
- *There is no longer a requirement to evaluate program educational objectives!*

Recent Changes - Criteria for Accrediting Engineering Programs

I. General Criteria

- **Criterion 2. Program Educational Objectives.** Removes the requirement for a program to have a process for the “review and revision” of its program educational objectives.
- *The new language requires a documented process that is systematically utilized and effective, involving the program’s constituents, for periodic review of the PEOs so that they remain consistent with the institution’s mission, the constituents’ needs, and the criteria.*

Recent Changes - Criteria for Accrediting Engineering Programs

I. General Criteria

- **Criterion 4. Continuous Improvement.**
Removes the requirement for a program to demonstrate graduate attainment of program educational objectives.
- *This change removes the stringent requirement for assessment of program educational objectives as is required for a program's student outcomes.*

Changes in Criteria for Accrediting Engineering Programs

(Changed with previous accreditation cycle)

Criterion 5. Curriculum.

- Basic sciences are defined as biological, chemical, and physical sciences.

Changes to the General Criteria

(Effective with 2014-2015 accreditation cycle)

Criterion 6. Faculty.

- The program must demonstrate that the faculty members are of sufficient number and have the competencies to cover all of the curricular areas of the program.
- Previous: The faculty must be of sufficient number and must have the competencies to cover all of the curricular areas of the program.

Changes to the Mechanical Engineering Criteria

(Changed with 2014-2015 accreditation cycle)

- **(Curriculum)** The curriculum must require students to apply principles of engineering, basic science, and mathematics (including multivariate calculus and differential equations); to model, analyze, design, and realize physical systems, components or processes; and prepare students to **work professionally in either thermal or mechanical systems areas while requiring courses in each area.**
- **Previous:** ... and prepare students to “work professionally in both thermal and mechanical systems areas.”

Criteria 2, 3, and 4

by

Patsy Brackin
Rose-Hulman Institute of Technology

PEV Worksheet

- Anyone can view the worksheet from abet.org by looking at the PEV pre-training
- Completing the PEV pre-training can be extremely helpful for your departmental ABET coordinator if she is not a PEV!

<http://www.abet.org/pev-candidate-training/>



Program Evaluators

Volunteer! Become a Program Evaluator

Current Program Evaluators

Professional Development

Training

> Program Evaluator Candidate Training

Module 1: Welcome and Overview

Module 2: The Accreditation Process

Module 3: The Role of the Program Evaluator

> Proficiency Assessment 1

Module 4: Quality Improvement of Student Learning

> Proficiency Assessment 2

Module 5: Applying the Criteria

Module 6: The PEV Appraisal Process

Program Evaluator Candidate Training

Text Size + - [Email] [Print] [Share]

Successful completion of the Program Evaluator Candidate Training is the first step in becoming an ABET program evaluator. The Program Evaluator Candidate Training process consists of three separate steps:

- successful completion of this online learning experience
- a Face-to-Face facilitated instruction (held every spring by invitation)
- completion of any additional [society-specific training](#) (if required)

The online portion of Program Evaluator Candidate Training typically takes 20-25 hours and requires written work and the completion of three end-of-module quizzes. Once the online training is complete, Program Evaluator Candidates may be invited to attend Face-to-Face Training, which is a 1 1/2 half day experiential workshop that simulates an on-site visit. Subject to the terms of ABET's Travel Policies and procedures, ABET covers all reasonable travel expenses related to participation in the Face-to-Face Training.

Who Takes Program Evaluator Candidate Training?

Program Evaluator Candidates who have completed the [online application](#) and received formal notification of their acceptance into the training program.

Schedule for Program Evaluator Candidate Training

The Program Evaluator Candidate Training process begins in March and ends in June. The online training must be completed before the Face-to-Face Training. The date on which the online material is due depends on the Face-to-Face Training

Featured ABET Event

February 15, 2014
Fundamentals of Program Assessment Workshop - San Diego, CA

[More Events](#)

ABET Facts

Accredited Programs at HBCUs

Howard University was the first historically black college or university to have ABET-accredited programs. ABET's predecessor, the Engineers' Council for Professional Development, accredited three engineering programs there in 1937.

ABET -- Windows Internet Explorer

http://www.abet.org/pev-candidate-training-module5/

File Edit View Favorites Tools Help

Convert Select

Google Search More >> Sign In

Upgrade Your Browser Angel IAIT index.html Logan Library Rose-Hulman Institute of ... Rose-Hulman MSDNAA

ABET -

Proficiency Assessment 1

Module 4: Continuous Quality Improvement of Student Learning

Proficiency Assessment 2

Module 5: Applying the Criteria

Module 6: The PEV Appraisal Process

Proficiency Assessment 3

Just-in-Time Training (Pre-visit Preparation)

Refresher Training

Training for Accreditation Visits Outside of the U.S.

New Team Chair Training

the Criteria

Previous Next

I. Analyzing the Simulated Self-Study Report

Are you ready to apply your newly gained knowledge to simulating PEV pre-visit activities? Please use the following sample data and forms to:

- Review a simulated Self-Study Report for a fictitious institution, Upper State University.
- Complete the PEV Visit Report and/or PEV Worksheet for your commission:

Applied Science Evaluation Forms

- [Program Evaluator Visit Report](#) (contains Program Evaluator Worksheet)

Computing Evaluation Forms

- [Program Evaluator Visit Report](#)
- [Program Evaluator Worksheet](#)

Engineering Evaluation Forms

- [Program Evaluator Visit Report](#)
- [Program Evaluator Worksheet](#)

Technology Evaluation Forms

- [Program Evaluator Visit Report \(T004\)](#) (contains Program Evaluator Worksheet)

Use the completed Program Evaluator Visit Report Forms and/or Program Evaluator Worksheet to walk through the Self-Study Report and capture your

organization changed its name to simply "ABET" in 2005.

[Learn more about ABET's history.](#)

Done, but with errors on page.

Internet | Protected Mode: On

125%

2013-2014 PROGRAM EVALUATOR WORKSHEET

(NOTE: Click on and type directly into shaded areas)

Institution			
Program Name		Program Evaluator(s)	
Team Chair		Visit Dates	

Use “C” for concern, “W” for weakness, and “D” for deficiency	Pre-visit Est.	Day 0	Day 1	Exit Stmt
If the program has no deficiencies or weaknesses, check this line.				
1. STUDENTS				
Evaluate student performance				
Monitor student progress				
Advise students regarding curricular and career matters				
Policies for acceptance of new and transfer students in place and enforced				
Policies for awarding transfer credits and work in lieu of courses taken at the institution				
Have and enforce procedure to ensure and document that students who graduate meet all graduation requirements				
2. PROGRAM EDUCATIONAL OBJECTIVES				
Published and consistent with mission, the needs of the constituencies, and these criteria				
Documented, systematically used and effective process, involving program constituencies, for the periodic review of PEO’s that ensures that they remain consistent with the institutional mission, program’s constituents’ needs and these criteria				

3. STUDENT OUTCOMES				
Program has documented student outcomes that prepare graduates to attain the program educational objectives				
(a) ability to apply knowledge of math, engineering, and science				
(b) ability to design and conduct experiments, as well as to analyze and interpret data				
(c) ability to design system, component or process to meet needs within realistic constraints				
(d) ability to function on multi-disciplinary teams				
(e) ability to identify, formulate, and solve engineering problems				
(f) understanding of professional and ethical responsibility				
(g) ability to communicate effectively				
(h) broad education				
(i) recognition of need for, and an ability to engage in life-long learning				
(j) knowledge of contemporary issues				
(k) ability to use techniques, skills, and modern tools in engineering practice				
Additional outcomes articulated by the program				
4. CONTINUOUS IMPROVEMENT				
Regular use of appropriate, documented processes for assessing and evaluating the extent to which the student outcomes are being attained				
Results of evaluations systematically utilized as input for the continuous improvement of the program				
Other information, if available, used to assist in improvement				

There are four possible findings that a PEV may state.

- **Deficiency:** A deficiency indicates that a criterion, policy, or procedure is not satisfied. Therefore, the program is not in compliance with the criterion, policy, or procedure.
- **Weakness:** A weakness indicates that a program lacks the strength of compliance with a criterion, policy, or procedure to ensure that the quality of the program will not be compromised. Therefore, remedial action is required to strengthen compliance with the criterion, policy, or procedure prior to the next evaluation.
- **Concern:** A concern indicates that a program currently satisfies a criterion, policy, or procedure; however, the potential exists for the situation to change such that the criterion, policy, or procedure may not be satisfied.
- **Observation:** An observation is a comment or suggestion that does not relate directly to the accreditation action but is offered to assist the institution in its continuing efforts to improve its programs.

We are going to use portions of the ABET training self-study, and you are going to be PEVs and review criteria 2, 3, and 4.

Process:

1. Review ABET requirements for the criterion.
2. Give examples of methods for attaining.
3. You review a sample self-study, act as the PEV using the worksheet, and report back.

Criterion 2. Program Educational Objectives

The program must have published program educational objectives that are consistent with the mission of the institution, the needs of the program's various constituencies, and these criteria. There must be a documented, systematically utilized, and effective process, involving program constituencies, for the periodic review of these program educational objectives that ensures they remain consistent with the institutional mission, the program's constituents' needs and these criteria.

Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies.

Sample PEOs from Various Web Sites

1. Graduates entering immediately into professional practice upon graduation are capable of performing duties of an entry-level engineering position.
2. Graduates pursuing graduate studies are capable of successfully completing an advanced degree.
3. Graduates recognize the need for and are capable of pursuing life-long learning.

Graduates will demonstrate technical excellence in their chosen fields, anticipate and respond to societal changes and develop careers with depth and flexibility, while retaining a professional and intellectual thrust throughout.

Specifically,

1a. Mechanical Engineers will show proficiency in the analysis, modeling and design of thermal and mechanical systems.

1b. Industrial Engineers will show proficiency in the design, analysis, optimization and improvement of integrated systems that include people, materials, information, equipment and energy.

2. Graduates will successfully integrate their academic preparation with engineering practice.

3. Graduates will effectively utilize management skills to design projects and/or programs, to lead their implementation and to present technical information, as appropriate to their field.

4. Graduates will engage in continuing education for professional development and career planning, including success in graduate education and research for those who choose to do so.

Within a few years of earning the baccalaureate degree in Aerospace Engineering at XXX our graduates are expected to achieve one or more of the following objectives:

1. Develop successful careers as aerospace engineers; demonstrate professional engineering competence via promotions and/or positions of increasing responsibility.
2. Successfully complete or pursue graduate education in engineering and related fields, participate in professional development and/or industrial training courses and/or obtain engineering certification.
3. Participate in research and development, and other creative and innovative efforts in science, engineering and technology, and/or pursue entrepreneurial endeavors.
4. If not in an aerospace engineering career, successfully transition into an education, business, legal, medical or government career.
5. Demonstrate a commitment to the community and profession through involvement with community and/or professional organizations.

Our program educational objectives are as follows:

- To train students with the ability to integrate, synthesize, and apply engineering principles in experimentation, analysis, and design of materials systems including metals, polymers, ceramics, composites, biomaterials, electronic materials and combinations of the above.
- To provide a supportive and stimulating environment for student development, leading to life-long learning and professional growth, as well as appreciation of the diverse roles and ethical responsibilities of their profession in society.
- To enhance understanding of materials engineering practice resulting from cooperative educational experiences.
- To provide students with a solid background in the theory and methods of their discipline and prepare them for a variety of challenging professional environments and post-baccalaureate education

What questions do we need to ask about objectives?

1. How do you ensure that your objectives are consistent with your mission, the needs of your constituencies, and the ABET criteria?
2. Do your objectives meet the ABET definition for program educational objectives?
3. What is your process?
4. How do you involve your constituencies?

How do you ensure that your objectives are consistent with your mission, the needs of your constituencies, and the ABET criteria?

Below are some examples of methods of successful demonstrations:

- Consistent with mission
 - Analytical paragraph, mapping, visual expression
- Consistent with needs of constituents
 - Survey of constituents indicating appropriateness of objectives, vote from industrial advisory board confirming objectives, focus groups, surveys
- Consistent with ABET criteria
 - Meets ABET definition for PEOs, matrix mapping objectives to ABET criteria, analytical paragraph

What is your process for the periodic review of your program educational objectives?

- Process flow diagram
 - Inputs
 - Outputs
 - Time frame
- Ordered list of steps
- Tables with milestones

How do we know if we have the correct PEOs?

- Focus groups
 - Alumni
 - Employers
 - Students
 - Graduate schools
- Surveys
 - Alumni
 - Employers
 - Students
 - Graduate schools
- Industrial advisory board
- Program Faculty

Note: This is not assessment of the attainment of your PEOs!

How do I demonstrate attainment of Program Educational Objectives?

- ***You no longer have to demonstrate attainment of Program Educational Objectives!***
- This is a new change, keep the criteria handy in case the PEV has not been properly trained.

Evaluate the Criterion 2 of ABET sample self-study using the Program Evaluator Worksheet supplied. (10 minutes)

Criterion 3. Student Outcomes

The program must have documented student outcomes that prepare graduates to attain the program educational objectives.

Student outcomes are outcomes (a) through (k) **plus any additional outcomes that may be articulated by the program.**

(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

Criterion 3. Student Outcomes, Continued

- (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.

What questions should we answer for Student Outcomes (SO)?

- What are your student outcomes?
- Are your SOs a-k? If not, do you include a-k?
- Do your SOs support your PEOs?

**Evaluate the selected SOs
from the ABET self-study.
(10 minutes)**

Criterion 4. Continuous Improvement

The program must regularly use appropriate, documented processes for evaluating the **extent** to which the student outcomes are being attained.

The results of these evaluations must be systematically utilized as input for the continuous improvement of the program. **Other available information may also be used** to assist in the continuous improvement of the program.

Criterion 4 Issues

- Are all SOs (a) through (k) + being regularly assessed and evaluated?
- Do the assessment and evaluation demonstrate the extent of attainment of the SOs?
- There is no language that requires:
 - all outcomes must be attained to the same degree
 - anything about a numeric scale measuring degree of attainment
- Are those results systematically utilized as input for the continuous improvement of the program?

Evaluate Criterion 4 in the ABET self-study.

- Outcome 1: ability to identify, formulate and solve engineering problems (p. 21)
- Outcome 7: understanding of professional and ethical responsibility (p. 38)
- Outcome 9: the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context (p. 44)
- Outcome 10: a recognition of the need for and an ability to engage in lifelong learning (p. 47)
- Outcome 11: a knowledge of contemporary issues (p.50)

Preparing your program for the ABET Visit

by

Mo Hosni
Kansas State University

ABET Website has the latest information on the accreditation process

ABET - Assuring Quality • Stimulating Innovation

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Assuring Quality in Technical Education

Learn More

- Students & Families
- Faculty & Administrators
- Volunteers
- Industry & Government

Upcoming Events

- March 14, 2013
Program Assessment Workshop - March 14, 2013
- April 11, 2013
Program Assessment Workshop - April 11, 2013
- April 12, 2013
2013 Symposium

What's New at ABET

- December 14, 2012
ABET Board Director Kirk Schulz Named 2012 CASE Chief Executive Leader
- November 1, 2012
ABET Installs 2012-13 Officers
- November 1, 2012
Stuart H. Zweben, Ph.D., Receives the 2012 Grinter Award Recipient

Find an Accredited Program

ABET accredits over 3,100 applied science, computing, engineering, and technology programs at more than 660 institutions in 23 nations.

[Accredited Program Search >](#)

[Log in to MyABET](#)

The ABET accreditation cycle is approximately **one-and-a-half years** from beginning to end

Preparation Process Tips

- Self-study report is due July 1 of year of visit
- Self-study report template posted on ABET website July of year prior to visit
- Appoint a leader for document preparation early in fall prior to year of visit
- Assessment should be a regular process
- Assign tasks to key persons at program, college, and institutional level as appropriate
- Synthesize materials into coherent whole
- Leave time for review before due date
- ABET HQ staff will help as questions arise

How is the Self-Study Organized?

In concert with the criteria:

- Students
- Program Educational Objectives
- Student Outcomes
- Continuous Improvement
- Curriculum
- Faculty
- Facilities
- Institutional Support
- Program Criteria

What is the Time Period For My Self-Study?

- The self-study should reflect the academic year in which it is produced and submitted
- Assessment results and analyses probably will go back several years
- Upcoming changes to the program should be mentioned, particularly if they will be effective by the time of the visit

We Made Major Changes in the Program Recently. What Do We Do Without New Data?

- You identified through your program of continuous improvement that change was needed to achieve objectives and/or outcomes
- Describe what led to the changes and when the impact of the changes will be determined

What Are the Visitors Really Looking For?

- A demonstration that your program meets the criteria
- Continuous improvement is an ongoing process. The visiting team is looking over the program's shoulder at that ongoing process to determine whether that process is being applied continuously and not just before the self-study report

Preparing Materials for the Visit

- Make it easy for the PEV...he/she is one of us.
- Large amounts of unprocessed data are not helpful
- Don't wait 5 years to prepare. Try to keep assessment and evaluation data current each academic year
- Look for guidance to the
 - Policies and Procedures Manual of ABET
 - Current Engineering Criteria
 - Engineering Self Study Questionnaire

<http://www.abet.org/self-study/>

Standard materials*

Representative samples of student work that reveal the spectrum of educational outcome..., it is necessary that the institution exhibit teaching materials such as:

- course outlines and textbooks for all courses required for graduation
- Sufficient examples of student work in technical, mathematics, and science courses must be available to the visiting team for the entire campus visit
- The examples should show a range of grades for assignments, including homework, quizzes, examinations, drawings, laboratory reports, projects, and samples of computer usage in technical courses
- Examples must also be presented to demonstrate compliance with the requirement for student competence in written and oral communications

*from Policies and Procedures Manual

Other Materials to include:

- Course outcomes linked to student outcomes,
- metrics with performance measures for these outcomes
- the results of any assessment processes done at the course level

Design/Computational Projects

- Projects and reports
- External assessments of Designs?
- If you do an external assessment be sure to include outcome specific language in the questionnaire to assessors

Assessment/Evaluation Notebook

- OK to be redundant with the self study (Criterion 4) itself.
- Lay out the formal assessment process
- Show the summary results of evaluations
- Include minutes of faculty meetings, curriculum committee meetings, retreats, student board meetings, external advisory board meetings, etc., at which assessment and evaluation were discussed and actions taken (or not!)

Common Mistakes Reporting Assessment Information

- Too many data, not enough information.
 - Reporting numbers or percentages without putting them into context
- How many students/graduates in cohort
- How many students/graduates provided data
- Not describing how the data are evaluated
- Using very complex charts describing your assessment processes
- Discussing all outcomes at once instead of one at a time
- Using the terms “objectives” and “outcomes” interchangeably

Other Comments:

- Visits follow a standard process
- Sunday afternoon allows for the PEV to tour labs and view materials
- A secure room for viewing materials, along with internet connection, a printer, and a paper shredder is helpful
- It is nice to point out the bathroom, water fountain, vending machines, etc. It is good to provide water if it isn't readily available
- Allow enough time on Sunday afternoon for the PEV to study materials...it is virtually their only opportunity. Be sure materials are available throughout the visit
- Accommodate PEV requests as much as possible. Do not hesitate to show your best stuff

Questions/Discussion?



Responding to your ABET visit

by

Bill Wepfer

Georgia Institute of Technology

Tuesday of the Visit

- Tuesday morning the PEV meets with the Department Head to read the draft exit statement
- Listen for the words: concern, weakness, and deficiency
- At the exit interview, the PEV reads the exit statement

The due-process period begins with the departure of the visit team.

Draft statement: Preliminary findings of the team

Due-process response: Due 30 days after the receipt of the Draft Statement

Final statement: The due-process response is incorporated into the Final Statement.

Continuation of due-process period:

Review of statement: The CEA reviews all ME department statements for consistency prior to the EAC meeting in July.

Final action: EAC meeting in July – the full commission reviews and votes on all recommended actions.

Notification of final action: ABET sends the Final Statement and transmittal letter informing you of the official accreditation actions for your programs.

Hints

- You can begin work on your due process response the day that the ABET team leaves your campus!
- Plan to address any weakness or deficiency noted.
- Make your response “criterion-based.”
- Consider addressing concerns.
- Observations do not need any action.

WRAP-UP DISCUSSIONS

TIPS FOR A SUCCESSFUL ABET VISIT



Questions

