Preparing the Self Study Report

Workshop for
Institutional Representatives

Presenter: Randal J. Keller

April 29, 2022

General Considerations

ABET Organization

ABET is essentially a group of over 2,200 volunteers from academia, industry, and public that is assisted by a core staff of professionals at headquarters.

Institution's Responsibilities

- **Request Accreditation**

- **Prepare Program Self-Study Report**

- **Implement Criteria and Policy and Procedures Requirements**

- **Host Visit**

- **Respond to Reports**

    - 7-Day Response to PAF and Exit Statement

    - 30-Day Due Process

    - Supplemental Information if needed

Types of Evaluation

- **Comprehensive**

- **Focused**

Types of Evaluation

- **Comprehensive** – Evaluations of all programs under a particular commission's purview must be conducted simultaneously every six years.

- **Focused**

Types of Evaluation

- **Comprehensive** – Evaluations of all programs under a particular commission's purview must be conducted simultaneously every six years.

- **Focused** – Evaluations occur when a program was found to have deficiencies or weaknesses in the prior evaluation. The evaluation could be done by either report or visit, depending upon the commission's findings.

Terms & Terminology

ABET Definitions

You will find the definitions of ABET's terms in the *Accreditation Policy and Procedure Manual (APPM)*.

You will also find definitions at the introduction to the ANSAC General Criteria, as follows:

ABET Definitions

While ABET recognizes and supports the prerogative of institutions to adopt and use the terminology of their choice, it is necessary for ABET volunteers and staff to have a consistent understanding of terminology. With that purpose in mind, the Commissions will use the following basic definitions:

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

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 knowledge, skills, and behaviors that students acquire as they progress through the program.

ABET Definitions

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.

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.

ANSAC Definitions

The Applied and Natural Science Accreditation Commission (ANSAC) of ABET recognizes that its constituents may consider certain terms to have certain meanings; however, it is necessary for the ANSAC to have consistent terminology. Thus the Applied and Natural Science Accreditation Commission will use the following definitions in applying the criteria:

ANSAC Definitions

College level Mathematics – consists of mathematics that require a degree of mathematical sophistication at least equivalent to that of college algebra. For illustrative purposes, some examples of college-level mathematics include college algebra, pre-calculus, calculus, differential equations, probability, statistics, linear algebra and discrete mathematics.

ANSAC Definitions

Natural Science – increases the knowledge base of a field of research and science collectively that are involved in the study of the physical world and its phenomena. Natural science consists of but is not limited to biology, physics, chemistry, geology and other natural sciences including life, earth and space sciences.

Applied Science – uses the knowledge base in natural science to solve specific programs.

Terminology

- Each institution is free to define its own terminology.

- For example, if "goal" is the term used to define the expected accomplishments of graduates the first few years after graduation, this is completely acceptable to ABET.

- The Self-Study Report should clarify this terminology.

Key Terms

- **Compliance** – The program satisfies the applicable criteria.

- **Concern** – 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.

Key Terms

- **Compliance** – The program satisfies the applicable criteria.

- **Concern** – 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.

Key Terms

- **Weakness** – 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.

Key Terms

- **Weakness** – 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.

- **Deficiency** – A criterion, policy, or procedure is
  - NOT satisfied. Therefore, the program is not in compliance with the criteria.

Key Terms

- **Weakness** – 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.

- **Deficiency** – **A criterion, policy, or procedure is NOT satisfied.** Therefore, the program is not in compliance with the criteria.

Institutional Preparation Process

- On-going compliance with criteria.

- Apply to ABET for accreditation or reaccreditation.

- Prepare program Self-Study Report, due July 1 of the year of the visit.

- Assemble supporting materials to be presented at an on-site visit to demonstrate achievement of student outcomes.

The Self-Study Report

- This is the foundation document.

- Use questionnaire template supplied by ABET ANSAC

- The campus visit serves to validate the program as presented in the Self-Study Report.

- Specifics can/should be clarified before the campus visit.

- Due to ABET HQ by July 1 of evaluation year

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

Criterion 1 – Students

- The program must:

  - Evaluate student performance, advise students, and monitor students' progress.

  - Have and enforce policies for acceptance of transfer students and validation of courses taken elsewhere.

  - Have and enforce procedures to assure that all students meet all program requirements.

Criterion 2 – Program Educational Objectives (PEOs)

The program must have in place:

- Published PEOs consistent with mission and these criteria.

- A process that periodically documents and demonstrates that the PEOs are based on the needs of the program's constituencies.

- A process that periodically reviews the PEOs to ensure they remain consistent with the institutional mission and needs of the program constituents.

Program Educational Objectives

- Broad statements that describe what graduates are expected to attain within a few years after graduation.

- PEOs are based on the needs of the program's constituencies.

- There must be a process to review and update PEOs.

- Must be "publicly stated" per APPM.

Program Educational Objectives FAQs

- What if the PEOs really sound like a collection of student outcomes (instead of objectives)?

  - If PEOs are not PEOs, there is a Criterion 2 shortcoming.

- What if PEOs are ambiguous or reflect student outcomes retooled to apply after graduation?

  - The team must determine if they meet the intent of the criterion.

- What if there is no process for determining the needs of the program's constituents?

  - If the PEOs do not incorporate constituents' needs, there is a Criterion 2 shortcoming.

Are These PEOs?

Graduates of the program will have:

- A solid understanding of the basic principles of mathematics, science, and applied and natural science and the technical competency to use the techniques, skills, and modern tools for professional practice as well as for graduate education.

- The ability to work in a team and develop problem-solving skills that include oral and written communication skills to effectively communicate technical and professional information.

Are these really broad statements that describe what graduates are expected to attain within a few years of graduation?

No, they are not really PEOs but rather student outcomes.

Criterion 3 – Student Outcomes

- The program must demonstrate that (1) – (6) are attained.

    - Note: For associate degree programs, (1) – (5) listed under "Associate Degree Programs."

- Student outcomes are defined as (1) – (6) plus any additional ones articulated by the program.

- Student outcomes must foster attainment of the PEOs.

    - There must be an assessment and evaluation process that periodically documents and demonstrates the degree to which outcomes are attained, which is addressed under Criterion 4 – Continuous Improvement.

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 knowledge, skills, and behaviors that students acquire as they progress through the program.

Criterion 4 – Continuous Improvement

- Programs shall use appropriate, documented processes for assessing and evaluating the extent to which the student outcomes are being attained.

- Each program must show evidence of actions taken to improve the program.

- These actions should be based on available information.

- The improvements can be based on any available information!

Continuous Improvement Issues

- Are all SOs (1) though (6) + being regularly assessed and evaluated?

- Do assessment and evaluation determine the extent of attainment of the SOs?

- Are those results systematically used as input to continuous improvement of the program?

Continuous Improvement Assessment

- 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 or objective being measured.

- Appropriate sampling methods may be used as part of an assessment process.
  - Not necessary to assess every course
  - Not necessary to assess every term.

Criterion 4 FAQs

What about assessment data? What are adequate data?

- Does it all have to be objective/direct?

Criterion 4 FAQs

What about assessment data? What are adequate data?

- Does it all have to be objective/direct? (NO)

- Can it be subjective?

Criterion 4 FAQs

What about assessment data? What are adequate data?

- Does it all have to be objective/direct? (NO)

- Can it be subjective? (Some of it may be, but the evaluation should not be based *only* on subjective assessment.)

- Is the observation or conclusion of course instructor adequate?

Criterion 4 FAQs

What about assessment data? What are adequate data?

- Does it all have to be objective/direct? (NO)

- Can it be subjective? (Some of it may be, but the evaluation should not be based only on subjective assessment.)

- Is the observation or conclusion of course instructor adequate? (Depends on his or her basis for the observation)

- Does evidence for each outcome have to be in the form of work the student has produced?

Criterion 4 FAQs

What about assessment data? What are adequate data?

- Does it all have to be objective/direct? (NO)

- Can it be subjective? (Some of it may be, but the evaluation should not be based only on subjective assessment.)

- Is the observation or conclusion of course instructor adequate? (Depends on his or her basis for the observation)

- Does evidence for each outcome have to be in the form of work the student has produced? (No, but the team needs to be convinced that the extent to which student outcomes are attained has been determined.)

Evaluation

- One or more processes for interpreting the data and evidence accumulated through assessment processes.

- Determines the extent to which student outcomes are being attained.

- Evaluation results in decisions and actions regarding program improvement.

What ANSAC Is Looking For

Processes in place which provide for:

- Definition of desired, measurable outcomes

- Collection of data linked to the outcomes

- Analysis of data and evaluation of results

- Implementation of change

- Repeat cycle and review

What ANSAC Is Looking For

Processes in place which provide for:

- Definition of desired, measurable outcomes

- Collection of data linked to the outcomes

- Analysis of data and evaluation of results

- Implementation of change

- Repeat cycle and review (closing the loop)

What ANSAC Is Looking For

Documentation of results and evidence that results are being used to improve the program

What ANSAC Is Looking For

Documentation of results and evidence that **results are being used to improve the program**

What ANSAC Is Looking For

Documentation of results and evidence that results are being used to improve the program, for example:

- ✓ Student portfolios

- ✓ Nationally-normed examinations

- ✓ Alumni and employer surveys

- ✓ Placement data

- ✓ Other

Level of Expectation

Exactly which attributes must each graduate have?

- A system must be in place to ensure that all graduates have, to some minimum extent, achieved the prescribed student outcomes.

- The level of achievement may vary.

Keep in Mind

- The institution must provide evidence that they have a **working and effective system of assessment in place**.

- The institution must describe a clear relationship between program educational objectives, student outcomes, and measurable indicators of success with **required levels of achievement.**

- The evaluation team is assessing programs **based on the criteria and the strength of the evidence provided by the institution**, not on their own personal references.

Criterion 5 – Curriculum

The curriculum requirements specify subject areas appropriate to applied and natural science programs but do not prescribe specific courses.

- How does the curriculum align with the program educational objectives?

- How does the curriculum and its associated prerequisite structure support the attainment of the student outcomes?

- Does the program have a culminating project or experience in the senior year?

Curriculum Culminating in Comprehensive Projects or Experiences Based on Cumulative Knowledge and Skills

- Students must complete a comprehensive project or experience that draws on previous courses and incorporates standards and realistic constraints. This is generally completed in the student's final year.

Criterion 6 – Faculty

- Sufficient number to maintain continuity, stability, oversight, student interaction, and advising

- Competence of faculty members must be demonstrated by such factors as education, professional credentials and certifications, etc.

- Responsibility and authority to improve the program

- Some program criteria have additional requirements.

Criterion 7 – Facilities

Classrooms, offices, laboratories, and associated equipment must be adequate to support attainment of the student outcomes and to provide an atmosphere conducive to learning.

Facilities

- Classrooms
  - Appropriate physical arrangement
  - Equipped with appropriate technology
  - Not overcrowded

- Support facilities
  - Sufficient computer access, with appropriate off-hours access
  - Appropriate spaces for students to gather (not an explicit criterion but relates to several criteria)
  - Appropriate shop with parts, repair facilities, etc.

- Faculty offices
  - Sufficient size, privacy

Facilities

Labs/Design Studios

- Sufficient number and size of labs

- Appropriate coverage across the breadth of specializations within the program

- Appropriate equipment, in good repair

- Appropriate student access (evening and weekend access?)

- Appropriate technician support and instructional support in lab

Criterion 8 – Institutional Support

Institutional support and leadership must be adequate to ensure the quality and continuity of the program.

- Resources include institutional services, financial support, and staff (both administrative and technical).

Program/Degree-Specific Criteria

- In addition to the eight General Criteria, the team will assess the program's compliance with applicable program- and degree- specific criteria, unless the program is being reviewed under the General Criteria only.

- Applicable program specific criteria are determined by the program title.

- Additional degree criteria apply to master's degree programs.

Questions?