ASCE PEV Training

ASCE Committee on Accreditation Operations (COAO)

Updated July 2024

ASCE®
AMERICAN SOCIETY OF CIVIL ENGINEERS

Supplement ABET PEV training by providing information related to

| ASCE reporting structure | Best practices in completing PEV forms | Program specific criteria | Review most commonly cited shortcomings |

ASCE

COE

COA, CFD, DHCC

COA

COAO

- **COA**
  - Coordinate ASCE's participation in ABET governance and ABET's development of strategic accreditation priorities.
  - In collaboration with the COAO, develop, update, and implement ASCE's policies and procedures for participation in ABET accreditation.

- **COAO**
  - Recruitment, training, evaluation, and assignment of program evaluators for the accreditation of architectural, civil, and construction engineering programs and architectural engineering, civil engineering, and construction engineering technology programs; and
    - Commentary
    - Training

COAO Supports the professional development of PEVs

- COAO provides a number of resources for PEVs online:

https://www.asce.org/career-growth/educators/accreditation-and-abet

- Please visit this website and review:
  - PEV Instructions
  - Commentary on the current and past program criteria
  - Webinar describing recent CE program changes
  - Example Reports for EAC and ETAC programs
  - Instructions for EAC PEVs making ETAC visits

EAC and ETAC PEV Instructions

Timeline for PEV activities

Guidance on pre-visit preparation

Documentation and completion of forms during visit

Post visit communication and submission of PEV report

https://www.asce.org/career-growth/educators/accreditation-and-abet

Additional Tips for ETAC PEVs

- ETAC accredits baccalaureate and associate programs. These are distinctly different and should be assessed differently

- The most notable differences important to you on your upcoming visit are:
  - Differences in Criteria and how they are interpreted
  - Differences in forms used to complete the visit
  - Differences in visit procedures

- For a detailed explanations in the differences and best practices, review the Guide for EAC PEVs Making ETAC visits document found at:

https://www.asce.org/career-growth/educators/accreditation-and-abet

Best Practices

ASCE

Example E331

Each box has a comment based on evidence

	A	B	C	D	E	F
1		State University				
2	Program Name	Civil Engineering			PEV	John Doe
3	Team Chair	Jane Smith			Visit Dates	October 10-12, 2022
4	Enter "C" for concern, "W" for weakness, "D" for deficiency, and "R" if the issue has been resolved	Pre-visit	Day 0	Day 1	Exit Statement	**Comments**
5				X	X	**Click for Video Tutorial**
6	**1. STUDENTS**	R	C	R		
7	Evaluate student performance	√				Criterion met per SSR: Criterion I, section B
8	Monitor student progress	√				Criterion met per SSR: Criterion I section B.1 & B.2 and Appx F
9	Advise students regarding curricular and career matters	I	C	R		Generally met per Criterion 1 section d & criterion 6 section 1 and 2. Confirm mandatory career/curricular advising takes place (comment sent in email to program on 7/26). Program Memo 7/31 provided additional detail on the mandatory advising, which occurs every term. Check during faculty/student interviews. From faculty and student interviews, mandatory advising is conducted with each student at least once per semester. Each faculty member advises approximately 90 students and has three hours a week devoted to meeting with six advisees per week on a scheduled basis. OK
						Generally met per SSR 1.F. However none of the six transcripts showed INTRO 101 was taken nor that

Review Info | Curriculum Analysis BS | Transcript Analysis BS | Interview List | **BS Shortcoming Tracking** | BS Sample Language | Tran ...

1. A. <u>Performance:</u> *Evaluate the extent to which the program attains the following elements of Criterion 1.*

Objective	Quality Rating	Comment
a. Policies for admission to the program exist and are enforced.	S	The university is a test optional school, requires <u>high</u> school GPA of 3.0 on a 4.0 <u>scacle</u> and a B or better in Algebra II. Test ACT 21 or better with <u>a math</u> score of 20 or better.
b. Student performance is evaluated and student progress through curriculum is monitored. Prerequisites are enforced and any waivers documented.		Need to see transcripts. Lots of computer checks for monitoring academic standing.
c. Policies exist and are enforced for accepting transfer students and transfer credit.	C	Self-study does not address the minimum grade for a transfer course.
d. Adequate procedures exist and are used for student advisement regarding curriculum and career matters.	S	ADDSSs conduct all academic advising. CET apparently shares one dedicated person with a student load of 298:1. CET has one primary faculty contact for career and curriculum <u>advise</u>. Contributions of other faculty is not well established.
e. Policies exist, are documented, and enforced for awarding credit in lieu of courses [note that not granting such credit is an acceptable policy].	S	Yes, <u>pretty standard</u> for academic placement tests and credit for work experience.
f. Policies exist and are enforced for ensuring and documenting that each graduate meets all program graduation		Yes, computer based and checked by college AD and department ADDSS. Will verify with Transcript review.

Completely fill out the Comment portions of the form with information that will inform the reader as to why you made the Quality Rating that you did!

- This will:
  - help you to clarify your thinking
  - assist your team chair as they work with the program after the visit
  - aid the COAO in understanding your decision processes

PROGRAM CRITERIA	C	R			
Curricular topics (if any)					
* Math through Differential Equations	√				Addressed in SSR, Table 5-2 OK
* Calculus Based Physics	√				Addressed in SSR, Table 5-2 OK
* Chemistry	√				Addressed in SSR, Table 5-2 OK
* One additional area of data science or basic Science	√				Met; biology also required. OK
* Engineering mechanics	√				Addressed in SSR, Table 5-2 include statics, dynamics and strength of materials OK
* Material science	√				Covered in ENGR 2xxx OK
* Numerical methods	√				Covered in CE 3xxx nad 3yyyy OK
* Principles of sustainability, risk, & resilience to civil engineering problems	I	√			Check capstone projects. Review of projects showed all areas considered. OK
* Principles of diversity, equity, and inclusion to civil engineering problems	I	√			Check capstone projects. Review of projects showed all areas considered. OK
* Engineering design process in at least 2 CE contexts	√				Met per SSR. OK
* Engineering code of ethics & ethical delimmas	√				p. 133: Covered in required professional practice course. Syllabus confirms.
* Complex problems in 4 areas of CE	√				Addressed in SSR. OK
* Conduct experiments in 2 CE contexts and report results	√				Met per SSR. OK

C3 and C5 Changes for the 2019-2020 Cycle and Beyond

Important Information about SOs

SO1: Complex problems: programs need to demonstrate ability to solve; complexity defined

SO2: Engineering Design: list of factors that must be CONSIDERED-even if one or more factors do not influence design

SO3: Communication: each program must determine "range of audiences"

Important Information about SOs

SO4: Responsibilities: judgements must consider impacts in **ALL**: global, economic, environmental and social

SO5: Teams: inclusiveness must be defined and project (task management) demonstrated

SO6: Experimentation: no requirement to design experiments but must show use of judgement in drawing conclusions

SO7: New Knowledge: broad; such as identifying needed information, reviewing literature & information, using appropriate sources, applying information

- Computer science: engineering topic NOT basic science***

- Basic science: now adds "other natural sciences including life, earth and space sciences"

- College-level math: pre-calculus and remedial math are not considered "college-level"

- Complex engineering problems: examples of characteristics of complexity listed in definition (at least 1)

- Engineering design: includes, realistic constraints, use of codes and standards, consideration of risk

- Team: requires diversity of skills, backgrounds or perspectives

*** Applies to Criterion 5a. See Commentry for definition of Computer Science for satisfying CEPC.

Most Common Shortcomings

For <u>EAC</u>, the program's PEOs are stated as outcomes

For <u>both</u> EAC and ETAC, the process for establishing and confirming PEOs do not involve <u>constituencies identified in the self-study</u>

For ETAC, some elements of the specified learned capabilities are not found in the program's published student outcomes

For EAC, some of the specified outcomes are not found in the program's published student outcomes

Avoid Reading Too Much Into the Criteria

Criterion 3 only requires that you can identify all of the required elements in the published criteria. There is no requirement for assessment of the outcomes for compliance with Criterion 3.

Criterion 4 requires assessment for the programs own published Student Outcomes, not explicitly the elements of Criterion 3.

ASCE

Ineffective assessment data

- (grade based, not a representative sample, tools that don't provide useful information, no direct measures, co-mingled data, etc…)

The program does not "close the loop"

- The data are not evaluated
- Data-based decisions concerning program improvement are not made
- implemented changes are not evaluated for effectiveness

ASCE

Lack of necessary basic math and science

- Counting an engineering science as basic science, counting math classes that do not require Cal I as a prerequisite, counting computer language course.

Culminating Design

- Lack of constraints and/or codes and standards. Project is analysis or research intensive. Does not meet the definition of Design.

Improper Accreditation information

- Now required to cite what program criteria the program is accredited under.

Safety

- Classroom and lab environments.

Curriculum

- One or more elements of the required curricular coverage is not met or is weakly addressed

Faculty

- Faculty teaching design are not qualified by virtue of licensure, or by education + design experience
- The program is critically dependent on one individual***

***This element is no longer a part of the program criteria, see Criterion 6

Program Criteria are provided on the ABET Website Under Accreditation

Commentary on the ASCE website is helpful for understanding and interpreting a Program's actions with respect to the criteria **https://www.asce.org/career-growth/educators/accreditation-and-abet**

1) Curriculum

The curriculum must include:

a) Application of:

   i) mathematics through differential equations, probability and statistics, calculus-based physics, chemistry, and either computer science, data science or an additional area of basic science

   ii) engineering mechanics, materials science, and numerical methods relevant to civil engineering

   iii) principles of sustainability, risk, resilience, diversity, equity, and inclusion to civil engineering problems

   iv) the engineering design process in at least two civil engineering contexts

   v) an engineering code of ethics to ethical dilemmas

b) Solution of complex engineering problems in at least four specialty areas appropriate to civil engineering

c) Conduct of experiments in at least two civil engineering contexts and reporting of results

d) Explanation of:

   i) concepts and principles in project management and engineering economics

   ii) professional attitudes and responsibilities of a civil engineer, including licensure and safety.

CHANGES IN WORDING OR REQUIREMENTS FROM PREVIOUS PROGRAM CRITERIA ARE HIGHLIGHTED IN GOLD

ASCE E331 for 2024-2025 Cycle

PROGRAM CRITERIA	C	R			
Curricular topics (if any)					
* Math through Differential Equations	√				Addressed in SSR, Table 5-2 OK
* Calculus Based Physics	√				Addressed in SSR, Table 5-2 OK
* Chemistry	√				Addressed in SSR, Table 5-2 OK
* One additional area of data science or basic Science	√				Met; biology also required. OK
* Engineering mechanics	√				Addressed in SSR, Table 5-2 include statics, dynamics and strength of materials OK
* Material science	√				Covered in ENGR 2xxx OK
* Numerical methods	√				Covered in CE 3xxx nad 3yyyy OK
* Principles of sustainability, risk, & resilience to civil engineering problems	I	√			Check capstone projects. Review of projects showed all areas considered. OK
* Principles of diversity, equity, and inclusion to civil engineering problems	I	√			Check capstone projects. Review of projects showed all areas considered. OK
* Engineering design process in at least 2 CE contexts	√				Met per SSR. OK
* Engineering code of ethics & ethical delimmas	√				p. 133: Covered in required professional practice course. Syllabus confirms.
* Complex problems in 4 areas of CE	√				Addressed in SSR. OK
* Conduct experiments in 2 CE contexts and report results	√				Met per SSR. OK

https://www.asce.org/career-growth/educators/accreditation-and-abet

2) Faculty

The program must demonstrate that faculty teaching courses that are primarily design in content are qualified to teach the subject matter by virtue of professional licensure, or by education and design experience.

Commentary for civil and construction engineering program criteria and all things ABET can be downloaded from ASCE's website

ASCE

Commentary on the ABET Program Criteria for Civil and Similarly Named Programs

Effective for 2024-2025 Accreditation Cycle

Initial Issue (Rev. 0), January 2024
    By the ASCE Civil Engineering Program Criteria Task Committee
Subsequent revisions
    By the ASCE Committee on Accreditation Operations

2

https://www.asce.org/career-growth/educators/accreditation-and-abet

The Visit

Developing the Exit Statement

First sentence of introduction must begin with the official name of the program

Describe the program as factually as possible. Include program's administrative location within the institution.

Information may be obtained from the materials provided, from the previous review, or from the program's website. Be sure to check the currency of the information with the program chair.

At a minimum, give:

- The current number of students enrolled
- The current number of faculty members
- The number of graduates in the academic year prior to the visit

For a new program include the formal start date, and year of its initial graduates.

See E402 and E403 in PEV Workbook

Each shortcoming should have three components:

- Applicable part of the criterion, using the exact language from the Criteria or APPM where possible. Each shortcoming should start with the phrase "This criterion requires that a program …….."
- Observed facts that are inconsistent or potentially inconsistent with the stated criterion or APPM element
- Negative impact on the program of the inconsistencies or potential inconsistencies

- Submit your work according the timeline and checklist found in the instructions.

- Submit your final documents to Dion Coward at:

bit.ly/ascesubmitpevreport

within 3 weeks of the visit.

For EAC Visits

- E331 Workbook, which includes:

  - Curriculum Analysis

  - Transcript Analysis

  - Interview List

  - Shortcoming Tracking

- PAF from AMS (Include Recommended Accreditation Action)

For ETAC Visits

- The T351 Report Form, which includes:

  - General Information Sheet, Criteria Evaluation, Transcript Analysis

  - Program Review Worksheet

- Signed PEV Program Summary Form with Recommended Accreditation Action (Last page of the T351)

- PAF from AMS, Including the program introduction section in accordance with the T422.

Input

PEV Report Submissions

PEV Performance Evaluations (360 Reviews)

EAC Executive Committee

Decisions

Approved for future visits

Visit with Visit Team Chair and Resolve Problems

Assign Training

Remove from ASCE Active List

Basis for Team Chair & Commissioner nomination

Service on COAO or COA

CONFIDENTIAL EAC PROGRAM EVALUATOR REVIEW
American Society of Civil Engineers - Committee on Accreditation Operations

EVALUATOR:	
INSTITUTION:	
PROGRAM:	

LEVEL:	☐ Baccalaureate	☐ Masters	☐ Senior PEV

VISIT TYPE:	☐ General	☐ Focus	

QUALITY OF DISCUSSION ON PEV WORKSHEET	Inadequate 1	Marginal 2	Adequate 3	Good 4	Excellent 5
Students					
Program Educational Objectives					
Student Outcomes					
Continuous Improvement					
Curriculum					
Faculty					
Facilities					
Institutional Support					
ASCE Program Criteria					
APPM					

PROPOSED STATEMENT TO THE INSTITUTION	Inadequate 1	Marginal 2	Good 3	Not Submitted

ARE THESE FORMS COMPLETED SATISFACTORILY?

	Yes	No	Not Submitted		Yes	No	Not Submitted
PEV Report Form (E 351)				PEV Worksheet (E 341)			
Curriculum Analysis				Program Audit Form (E 301)			
Transcript Analyses							

CLARITY OF WRITING:	Good	Adequate	Minor Improvements Needed	Considerable Improvements Needed

RECOMMENDED ACCREDITATION ACTION:	NGR	IR	RE	IV	VE	SC	SC-E	NA

Is the above recommendation:

☐ Consistent with the report?
☐ Somewhat inconsistent with evidence presented?
☐ Inconsistent with evidence presented in the report?

If the recommendation was for less than full term accreditation, did the statement to the institution clearly state what must be corrected?	Yes	No

see next page for additional comments

CONFIDENTIAL EAC PROGRAM EVALUATOR REVIEW
American Society of Civil Engineers - Committee on Accreditation Operations

EVALUATOR:	
INSTITUTION:	
PROGRAM:	

LEVEL:	☐ Baccalaureate	☐ Masters	☐ Senior PEV

VISIT TYPE:	☐ General	☐ Focus	

QUALITY OF DISCUSSION ON PEV WORKSHEET	Inadequate 1	Marginal 2	Adequate 3	Good 4	Excellent 5
Students					
Program Educational Objectives					
Student Outcomes					
Continuous Improvement					
Curriculum					
Faculty					
Facilities					
Institutional Support					
ASCE Program Criteria					
APPM					

PROPOSED STATEMENT TO THE INSTITUTION	Inadequate 1	Marginal 2	Good 3	Not Submitted

ARE THESE FORMS COMPLETED SATISFACTORILY?

	Yes	No	Not Submitted		Yes	No	Not Submitted
Interview List				PEV Workshee E331			
Curriculum Analysis				Program Audit Forr AMS			
Transcript Analyses							

CLARITY OF WRITING:	Good	Adequate	Minor Improvements Needed	Considerable Improvements Needed

RECOMMENDED ACCREDITATION ACTION:	NGR	IR	RE	IV	VE	SC	SC-E	NA

Is the above recommendation:

☐ Consistent with the report?
☐ Somewhat inconsistent with evidence presented?
☐ Inconsistent with evidence presented in the report?

If the recommendation was for less than full term accreditation, did the statement to the institution clearly state what must be corrected?	Yes	No

see next page for additional comments

ASCE Program Evaluator Performance Evaluation Rubric

Review of PEV Worksheet (form 341)

	Inadequate	Marginal	Adequate	Good	Excellent
Quality of Discussion on PEV Worksheet	No comments in any worksheet comment boxes	Minimal comments (e.g. N/A, yes, no) in some of the comment boxes	Detailed comments provided for only topics identified as potential shortcomings	Detailed comments in all boxes relevant to all the criteria provided	All comment boxes filled with references to the SSR, criterion and tracking of status

Overall assessment of PEV worksheet: Inadequate   Marginal   Good

*To indicate E 341 is satisfactorily completed, the PEV must have received a rating of good or excellent on all elements listed under the section titled **Quality of Discussion on PEV Worksheet**

Review of Exit statement

	Inadequate	Marginal	Good
Format of the proposed statement to the institution	Lacking three-part construct	Contains three-part construct but statement lacks clarity and completeness	Uses three-part construct effectively with clear and complete explanation of the shortcoming
Consistency between statement and worksheet	Statement and worksheet content inconsistent	Statement minimally consistent with criterion and/or worksheet	Statement consistent with the worksheet
Quality of the proposed statement	Shortcoming statement not consistent with the criterion or level of findings; strengths are not strengths	Shortcoming statement not consistent with the level of findings; connection to evidence weak; implications to the program are not fully formed	Statement and evidence clearly support shortcoming level and provides a clear implication to the program

Overall assessment of exit statement: Inadequate   Marginal   Good

In Closing

Be open to innovative ways of meeting the criteria

Programs don't have to do things the way that you would

You may not want to adopt their practices, but if they satisfy the criteria, then they are okay

- Please be sure to complete your training in Brightspace
  - Pre-visit PEV training
  - Virtual Review training

- Don't forget your Team Chair is a resource and they want to see you be successful!

- Don't forget:
  - to submit your travel waiver (slennon@abet.org) and book travel early.
  - Get your expense report into Concur
  - Submit your report to Dion via Cognito forms within three weeks after your visit.

bit.ly/ascesubmitpevreport

COAO Representatives to Help You

- Incoming Chair COAO

- Norman Dennis
- ndennis@uark.edu

- Dion Coward-Senior Manager Educational Activities, ASCE

- dcoward@asce.org

Questions?

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS