# Civil Engineering Program Implementation of Proposed ABET EAC Criterion

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# Civil Engineering Program Implementation of Proposed ABET EAC Criterion 5

#### **Abstract**

The Engineering Accreditation Commission of ABET (EAC/ABET) adopted changes to General Criterion 5 (Curriculum) to include components addressing diversity, equity, and inclusion. ABET Criterion 3 (Student Outcomes), 5, and 6 are not harmonized across ABET Commissions, meaning that the changes only apply to programs accredited under the EAC/ABET. The proposed changes to Criterion 5 were distributed in the 2022-23 accreditation cycle for public discussion. A two-year voluntary pilot study was in effect since the 2023-24 accreditation cycle. The proposed changes were approved and were to become effective in the 2025-26 accreditation cycle.

In anticipation of the changes, a survey was developed and distributed to department heads and chairs of civil engineering programs in Fall 2024. The survey was intended to gauge the level of awareness of, and support for, the changes to Criterion 5 (Curriculum), the ease of implementation of changes, and to gather examples of how programs meet or are preparing to meet requirements of this criterion. The objectives of this study were to:

- Identify supportiveness of Civil Engineering Department heads and chairs for the Criterion 5 change
- Identify the ease of implementing the proposed changes
- Identify the perceived acceptance within the broader community (local, county, state, professional)
- Identify example practices within the department that can be shared with the community

In early February 2025, the ABET Board of Directors conveyed the decision that ABET was removing all references to diversity, equity, inclusion, and accessibility in all accreditation criteria including program criteria. Despite this change, feedback gathered on questions and concerns related to compliance with the proposed changes indicated recognition of the importance of considering these factors in engineering practice. Although specific training on these factors will be unlikely given the changes to the criteria, the feedback indicates the need for training by ABET and ASCE accreditation communities when changes are made to accreditation criteria.

#### Introduction

ABET accreditation seeks to define the standard of quality for which students, employers, and society can be confident that graduates of an ABET accredited program are prepared to enter the discipline after graduation. ABET criteria are developed by professionals associated with the 34 technical societies that comprise ABET [1]. Although originally focused on accrediting engineering and technology programs, today, ABET also accredits college and university programs in other areas such as the applied and natural sciences and computing. Programs can be accredited at the associate's, bachelor's, and master's degree levels. ABET General Criteria, and where applicable, Program Criteria, identify elements required in the program curriculum.

ABET is a non-profit, non-governmental organization with ISO 9001:2015 certification. ABET volunteers represent industry, academia, and government [1]. Four accreditation commissions

lead and perform the accreditation activities of ABET: Applied and Natural Sciences Commission (ANSAC), Computing Accreditation Commission (CAC), Engineering Accreditation Commission (EAC), and Engineering Technology Accreditation Commission (ETAC). Each commission is responsible for reviewing educational programs and making the final decision regarding the accreditation status of the programs under review. Programs are evaluated based on eight General Criteria and, where applicable, relevant Program Criteria. The General Criteria are: 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), and Criterion 8 (Institutional Support). Criteria 1, 2, 4, 7 and 8 are harmonized across the commissions, meaning they are identical in language. Because Criterion 5 (Curriculum) addresses criteria for a program's curriculum and is responsive to the needs of the different professions, this criterion is not harmonized across commissions.

The Engineering Accreditation Commission of ABET (EAC/ABET) launched an effort to update Criterion 5 (C5) in 2019 to include consideration of diversity, equity, and inclusion (DEI). The EAC discussed different approaches for several years. The proposed language that was adopted stated that the curriculum must include "content that ensures awareness of diversity, equity, and inclusion for professional success consistent with the institution's mission." [1] Actions taken by the EAC are subject to approval by the Engineering Area Delegation (EAD). In October 2022, the EAD approved the proposed language. The EAC also proposed, and the EAD approved, a plan to conduct a two-year voluntary pilot study to identify how programs may comply with the DEI components in Criterion 5. Ultimately, changes to Criterion 5 were approved by the EAD in October 2024 and were to become effective in the 2025-26 accreditation cycle.

Programs visited during the 2023-2024 and 2024-2025 review cycles were given the opportunity to opt-in to the voluntary pilot study. Programs that participated in the voluntary effort completed a report on their program actions that addressed compliance with the DEI components added to Criterion 5. Participating programs submitted this report separately from their Self Study Report. Participating programs' compliance with the DEI components was not considered as part of the ABET review and did not affect any accreditation actions. Information presented in the voluntary reports was used by EAC leadership to identify changes needed in the Self-Study template to guide programs in documenting compliance with Criterion 5.

In support of changes to Criterion 5, ABET defined diversity, equity, and inclusion as follows [1]: (https://www.abet.org/about-abet/idea-inclusion-diversity-equity-accessibility, accessed prior to February 2025).

"Inclusion is the intentional, proactive, and continuing efforts and practices in which all members respect, support, and value others.

**Diversity** is the range of human differences, encompassing the characteristics that make one individual or group different from another. Diversity includes, but is not limited to, the following characteristics: race, ethnicity, culture, gender identity and expression, age, national origin, religious beliefs, work sector, physical ability, sexual orientation, socioeconomic status, education, marital status, language, physical appearance, and cognitive differences.

**Equity** is the fair treatment, access, opportunity, and advancement for all people, achieved by intentional focus on their disparate needs, conditions, and abilities."

Coincidentally, during the period when the EAC/ABET was considering addition of DEI concepts in engineering curricula, ASCE was reviewing and revising the Civil Engineering Program Criteria as part of the 8-year review cycle. The 2024-2025 Civil Engineering Program Criteria, which is based on the Civil Engineering Body of Knowledge, 3rd Edition (CE BOK3), states the "curriculum must include the application of principles of sustainability, risk, resilience, diversity, equity, and inclusion to civil engineering problems" [2]. Diversity, equity, and inclusion were incorporated into the CE BOK3 [3] as part of the teamwork and leadership outcome. This outcome recognizes that leaders need to be capable of fostering inclusion of diverse perspectives, cultural backgrounds, individuals' perspectives, and individuals' experiences. Details and examples provided in the Civil Engineering Program Criteria Commentary [4] guide programs to identify ways to address diversity, equity, and inclusion in the curriculum. The revised CE Program Criteria were implemented in the 2024-2025 accreditation cycle. Program criteria for other programs can be found on the EAC/ABET web site. A review of the program criteria conducted prior to February 2025 showed that among all program criteria, only the Civil Engineering Program Criteria included the words "diversity," "equity," and "inclusion."

Civil Engineering programs can consider their responsibilities to provide "content that ensures awareness of diversity, equity, and inclusion for professional success" [1] in light of the American Society of Civil Engineers (ASCE) Code of Ethics [5]. Among all engineering disciplines, awareness of diversity, equity, and inclusion has particular relevance to civil engineers. The ASCE Code of Ethics [5] establishes a clear hierarchy of stakeholder groups, in descending order of priority: Society, Natural and Built Environment, Profession, Clients and Employers, and Peers. Ethical responsibilities towards "Society", the highest level of stakeholder identified in the ASCE Code of Ethics, begin with: "first and foremost, protect the health, safety, and welfare of the public" (Provision 1a, [5]). Provisions 1f and 1g also address DEI within Society, namely, "treat all persons with respect, dignity, and fairness, and reject all forms of discrimination and harassment" (Provision 1f) and "acknowledge the diverse historical, social, and cultural needs of the community, and incorporate these considerations in their work" (Provision 1g).

The Natural and Built Environment, Profession, and Peers are identified as stakeholder groups 2, 3, and 5, respectively. Equity appears in a number of places. Provision 2c of the ASCE Code of Ethics requires engineers "to mitigate adverse societal, environmental, and economic effects," 3e requires engineers to "promote mentorship and knowledge-sharing equitably with current and future engineers," 5d requires engineers to "promote and exhibit inclusive, equitable, and ethical behavior in all engagements with colleagues," and 5g requires engineers to "supervise equitably and respectfully." [5] The expected ethical behaviors of civil engineers can be reinforced in a civil engineering curriculum.

In addition to addressing equity in the Code of Ethics, ASCE maintains a resource website focused on equity in infrastructure [6] with examples that connect equitable infrastructure to sustainability, resilience, and technological advancement. These examples show the need for, and benefits of,

preparing students to advance infrastructure that is beneficial for all stakeholders of civil engineering projects.

How does including DEI in the engineering curriculum support industry's needs? Phillips [7] argues that diversity of expertise is essential. No automobile company would want to build a new car without the expertise of engineers, designers, and quality control experts. Each group represents informational diversity. A team with informational diversity brings different information to solve a problem. Likewise, individuals representing social diversity bring different social perspectives to solve a problem. The more diverse the thoughts, the more creative and diverse the solution. Social and racial diversity have been shown to enhance company growth and financial gains. Phillips notes that diversity is more than bringing different thoughts to the table; diversity creates discomfort when information deltas exist between members of the community. To address the discomfort, members of the group anticipate differences of opinions and perspectives, work harder to see topics from different perspectives, and thus enhance the group's outcome.

ABET criteria were developed to provide guidance to engineering programs to "prepare graduates ... for the global workforce" [1]. Addition of diversity, equity, and inclusion to the EAC/ABET Criterion 5 was intended to ensure that engineering solutions meet the diverse needs of stakeholders. The importance of considering diversity can be demonstrated across all engineering disciplines, including biomedical engineering. For example, Rincon [8] notes that one-third of osteoporosis related hip fractures in the U.S. and Europe are in men. However, osteoporosis is viewed as a disease that primarily affects women. Consequently, risk factors for men are not as well understood as they are for women. This example highlights the importance of considering diversity in engineering research and design to address risk factors and remedies.

Since writing the draft paper, a Presidential Executive Order named "Ending Radical And Wasteful Government DEI Programs And Preferencing" was released on January 20, 2025. In recognition of policy changes, ABET leadership released a letter on February 4, 2025 stating the following [9]:

"In recognition of the challenges many institutions, academic programs and industry partners are currently facing in various aspects of implementing diversity, equity, inclusion and accessibility, the ABET Board of Directors met in executive session yesterday and voted to approve the following three motions:

- That the Board of Directors approve the removal of those sections of the harmonized and non-harmonized general and program criteria that address diversity, equity, inclusion, and/or accessibility starting in the 2025-26 accreditation cycle.
- That the Board of Directors approve the closure of the public comment period for those proposed non-harmonized general and program criteria that address diversity, equity, inclusion, and/or accessibility
- That the Board of Directors direct the Commissions to not act upon the criteria that address diversity, equity, inclusion, and/or accessibility for any review being evaluated starting in 2024-2025.

These decisions will be implemented alongside additional operational adjustments. The approved motions provide us with more time to better understand the needs of our constituents and ensure that our quality assurance processes remain effective and sustainable."

As part of this action, the Civil Engineering Program Criteria language was modified to remove any reference to diversity, equity, and inclusion. The ABET website was updated effective February 18, 2025 with the modifications. One objective of this paper was to demonstrate how programs could comply with criteria elements addressing DEI. Although these elements no longer exist, the findings are still useful to demonstrate perceptions about application of DEI principles to engineering practice.

#### **Methods**

The goals of this study were to identify the level of awareness and support among programs and faculty for the changes in Criterion 5 addressing DEI, to identify perceived ease of implementing changes for compliance with the criterion, and to identify example practices that could be shared with the civil engineering community. To address these goals, the authors developed a voluntary anonymous survey that was distributed by an email request to approximately 260 Heads and Chairs of Civil Engineering programs. A request was also posted on the ASCE Collaborate site. Survey components are shown in Appendix A. The survey was administered using Microsoft Forms and distributed with IRB approval (Oklahoma State University).

Forty-four responses were received. Although it was possible for respondents to complete the survey multiple times, the authors thought that would be unlikely given the timing of the request, i.e., at the end of the Fall 2024 semester, and the effort required to complete the survey. Survey responses were gathered and analyzed as described below. The authors also completed the survey, representing their respective departments or programs.

### **Results**

As shown in Figure 1, 72 programs were represented among the 44 responses received. The majority of programs represented were civil engineering, followed by environmental engineering. The program size, as represented by the number of graduates of the program, is shown in Figure 2. Thirty percent of programs have 1-30 graduates, 49% have 31-100 graduates, and 21% have more than 100 graduates. Sixty eight percent of respondents are at public institutions and 32% are at private institutions.

The highest degree offered at the institution is shown in Figure 3, with 11% offering the bachelor's as the highest degree, 23% offering the master's as the highest degree, and the remainder offering the Ph.D. as the highest degree. As shown in Figure 4, 12% of respondents had a scheduled ABET visit in the 2024-2025 cycle and were not yet affected by the changes in Criterion 5, but the remaining 88% were subject to the changes in the criterion. Unfortunately, the survey neglected to include "2029-2030" as an option for the next scheduled visit. It is possible that respondents whose next visit is scheduled for 2029-2030 instead selected 2028-2029, yielding a greater percentage of responses in the 2028-2029 category.

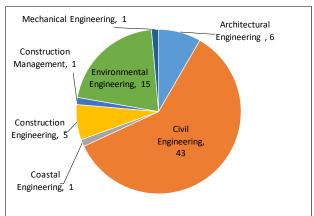


Figure 1. Number and programs represented by survey respondents

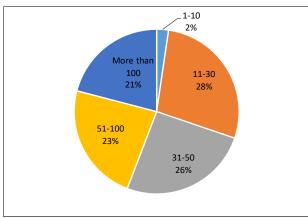


Figure 2. Program size, as represented by average number of graduates

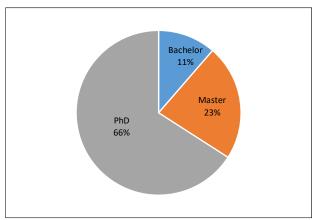


Figure 3. Highest degree offered at survey respondents' institution

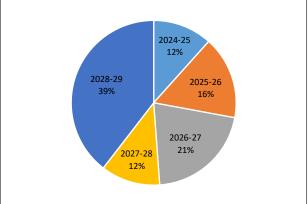


Figure 4. Date of next scheduled ABET visit

Respondents' familiarity with the proposed changes to Criterion 5 is shown in Figure 5. Forty percent have some familiarity, 45% have taken action to address the changes, and 13% participated in the pilot study. Only one respondent reported lack of awareness about the changes. However, it is possible that programs that are not yet aware of the changes might also be less likely to respond to this survey.

Using ratings of "low", "medium", and "high", respondents were asked to identify the importance of including consideration of diversity, equity, and inclusion in their civil engineering program, in the civil engineering profession, and ease of implementation of incorporating DEI in their program. As shown in Figure 6, approximately 80% reported consideration of DEI as having medium or high importance in the program, whereas a greater percentage - approximately 90% - rate consideration of DEI as important for the profession. Approximately 23% considered including DEI components in the curriculum to be easy ("High" ease) and an equal percentage considered implementation to have "low" ease. Comments provided with the survey included many requests for examples that could be used by the programs to be able to comply with the criteria.

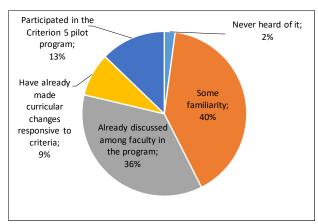


Figure 5. Level of respondents' familiarity with changes in Criterion 5

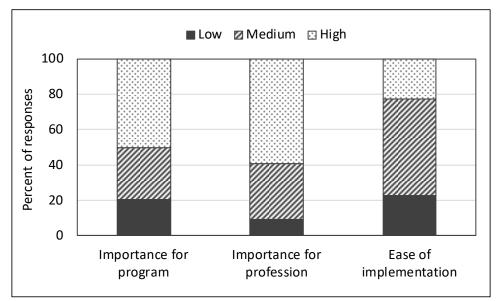
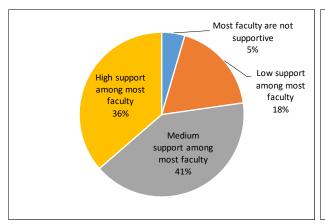


Figure 6. Importance and ease of implementation of diversity, equity, and inclusion

The levels of support among faculty and at the institution for addressing diversity, equity, and inclusion in the curriculum are shown in Figures 7 and 8, respectively. Approximately 23% of responses indicated lack of support or low support among faculty and at the institution. Approximately 36% reported high support among faculty and 45% reported high institutional support for including DEI in the curriculum. Given the curricular and other changes since release of the Executive Order on January 20, 2025, it is possible that levels of support may have since changed.

Finally, the expected levels of faculty involvement in addressing DEI in the curriculum are shown in Figure 9. Only 4% expected that only the Chair/Head would be involved in the effort, whereas 82% expected some faculty involvement, and 14% expected that all faculty in the program would participate in the effort.



High support at the institution 45%

Medium support at the institution 34%

Figure 7. Faculty support for addressing DEI in the curriculum

Figure 8. Institution support for addressing DEI in the curriculum

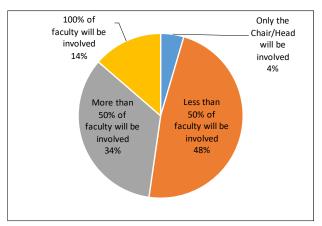


Figure 9. Anticipated faculty participation in addressing DEI in the curriculum

The survey included four open-ended questions, the first of which asked for a brief description of any current coverage of DEI topics in the program. The goal of asking this question was to gather examples that may be helpful to other programs. Thirty responses were provided and included some common ways of addressing DEI topics, including the following:

- In required courses, e.g., capstone, a first year course, engineering ethics course, professional practice course
- In general education courses or other courses required by the university
- Distributed throughout the curriculum where relevant
- Case studies in subject-matter courses (e.g., transportation access in a transportation course, urban infrastructure placement in an infrastructure course, community factors in a sustainability course). Programs that include case studies in civil engineering subject matter courses may be using the case studies to assess attainment of Criterion 3, Student Outcome 2 "an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors." [1]

Although not specific to curricular coverage, several responses indicated faculty training in DEI and the presence of relevant questions on student evaluations. While that training may be required

at the institution level, faculty training itself does not demonstrate compliance with Criterion 5 requirements to provide curricular "content that ensures awareness of diversity, equity, and inclusion for professional success consistent with the institution's mission." [1] These responses demonstrate the need to clarify the difference between faculty training and content included in the curriculum.

Some responses indicated that inclusion of DEI topics may be a function of a specific faculty member's experience. Such an approach is possible for satisfying curricular criteria, but if faculty members leave or course assignments change, there is a possibility that course topics may change, creating a lack of coverage of required curricular elements. Program responses such as these also indicate the need for training so that programs can successfully and consistently comply with the criteria, particularly when changes are made between the program's visit cycles.

Although examples are helpful, negative comments can be even more enlightening because they reveal concerns or perceptions about the criteria. One respondent perceived this effort to be significantly promoted by ASCE, and noted that in their curriculum, DEI is:

"... not addressed in the way that ASCE wants it done. We don't try to specifically create cosmetic diversity in group selections or other activities, and that seems to be a big push from ASCE."

This response indicates a misperception that there is one "right" way to comply with criteria - which is not the case - and reveals opportunities for discussions in future seminars to train program faculty and Program Evaluators on the criteria. The misinterpretation is understandable, given previous iterations of Student Outcomes (Criterion 3) that focused on diverse teams, and which have since been revised.

#### Another commenter noted:

"We have always strived to be open and inviting to under-represented groups. One group that we thought we would start with is female students. We wanted to recruit more and see more succeed in our program. We have female alumni who have been very successful in their careers. They are owners/managers in their respective fields. Our ideas converged around an initial symposium "panel of experts" from our female alumni. They could share ideas, tips, and networking to help. When we brought this forward to our ASCE chapter, at least three female students approached the department chair individually and conveyed essentially this concept. "If you hold that symposium, I will not attend." When asked why, they said, "I want to be known as a good engineer, not as a good woman engineer." They did not want to be separated out in a special category or get their start because they were a woman. They wanted to stand toe-to-toe and be known for what they can do and accomplish. This changed our perspective. We realized that while people want to be part of a group, we want that group to have civil/environmental engineering as the common bond. It's not subgroups within civil engineering creating the divisions of us versus them. It's respecting that we are all different, but we all enjoy engineering. And anytime you start to identify and separate into these special "sub-groups" you create more division than you build."

This comment reveals intentional efforts on the part of the program to recruit and support under-represented students. While these efforts may be useful for the program - or not, as noted - this comment indicates a misunderstanding of the criterion. Prior to the recent change, Criterion 5 required that the curriculum include "content that ensures awareness of diversity, equity, and inclusion for professional success consistent with the institution's mission" [1]. Curricular content is not the same as a program's support or recruitment actions. Such comments identify the need to clarify the criteria when training faculty and Program Evaluators on interpretation of the criteria.

Some common themes were apparent in response to the request to identify any questions or concerns about addressing diversity, equity, and inclusion to comply with EAC/ABET Criterion 5. These themes were:

- How to demonstrate compliance with the criterion
- Training for Program Evaluators to ensure accurate and consistent evaluation of the new requirements
- How to address DEI in light of State-level policies that prohibit DEI-focused initiatives, and how these policies may affect a program's ability to comply with the criterion
- Increased faculty workload to address more topics

Several respondents stated that they did not have questions and that the program was already addressing DEI topics. One respondent expressed concern that ASCE was promoting an agenda through this initiative, while another noted that although addressing DEI was important for the profession, it should not be included in the curriculum. One response indicated concern that the criterion was significantly weakened by the phrase "consistent with the institution's mission" as there are no other curricular requirements in Criterion 5 that allow for coverage consistent with the institution's mission (e.g., for math).

Some respondents expressed concern about assessing DEI in the curriculum. Questions and comments addressing "assessment" clearly identify an area for improvement in training as there is no requirement to assess curricular topics identified in Criterion 5. The preamble to Criterion 5 states, "The curriculum requirements specify subject areas appropriate to engineering but do not prescribe specific courses. The program curriculum must provide adequate content for each area, consistent with the student outcomes and program educational objectives, to ensure that students are prepared to enter the practice of engineering." [1]

The third open ended question asked to identify information that would be helpful for addressing diversity, equity, and inclusion to comply with EAC/ABET Criterion 5. Of the 27 responses provided, 19 suggested providing examples for compliance with the Criteria. As one responded noted:

"It is not difficult to mention that all projects should include diversity of perspectives and users, be inclusive in the development [of] the solution of a project, and consider the needs of users for a particular project. It is more difficult, in my opinion, to instill these concepts into basic engineering curriculum courses."

Some responses requested examples that could also be compliant with State-level policies that prohibited DEI-focused initiatives. Several responses requested examples and methods to assess

the curricular topics, but as mentioned previously, Criterion 5 does not require assessment. Finally, one respondent requested clarification of how to address diversity vs. equity vs. inclusion and the expected level of achievement on Bloom's taxonomy for the cognitive domain.

The final question asked for any additional comments. Three respondents said "thank you", two addressed lack of clarity on one question, once respondent suggested the change be rescinded until all programs could be in compliance (same respondent who raised the concerns about consistency with the institution's mission), and three respondents suggested that the changes were a bad idea, heavy handed, or unnecessary.

#### Discussion

Survey responses indicated that program heads and chairs are generally aware of changes in the EAC/ABET Criterion 5 and that there is a general base of support among the faculty for addressing DEI in the curriculum and in the profession. However, survey results also indicate that there is a clear need to improve training for program faculty, and possibly for Program Evaluators, on implementation and evaluation of compliance with Criterion 5.

Although Criterion 5 and the Civil Engineering Program Criteria no longer address diversity, equity, or inclusion, the feedback provided in this study indicates the need for communication and training whenever any changes are made to the criteria. Responses indicated several means by which programs intended to comply with proposed changes, indicating there's no one "right way" to address ABET criteria, but that many programs were interested in learning from others and sought examples of how to comply with the criteria.

The authors hope that this information will be useful for department heads and chairs and for faculty who wish to continue to improve civil engineering programs and better prepare graduates for professional practice.

## Acknowledgments

The authors thank the Department Heads and Chairs who participated in the survey.

### References

- [1] https://www.abet.org. Accessed November 18, 2024.
- [2] Criteria for Civil and Similarly Named Engineering Programs. <a href="https://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-engineering-programs-2024-2025/">https://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-engineering-programs-2024-2025/</a> Accessed Dec 30, 2024.
- [3] Civil Engineering Body of Knowledge, 3rd edition, American Society of Civil Engineers, April 2019.
- [4] Commentary on the ABET Program Criteria for Civil and Similarly Named Programs, American Society of Civil Engineers, January 2024.

- [5] ASCE Code of Ethics, <a href="https://www.asce.org/career-growth/ethics/code-of-ethics">https://www.asce.org/career-growth/ethics/code-of-ethics</a> January 2025.
- [6] ASCE Equity and Infrastructure. <a href="https://www.asce.org/topics/equity-infrastructure">https://www.asce.org/topics/equity-infrastructure</a>. Accessed Jan 3, 2025.
- [7] Phillips, K.W. 2014. How Diversity Makes us Smarter, Scientific American, October.
- [8] Rincon, R. 2022. Promoting the Need for Greater Diversity and Inclusion in Engineering, The Electrochemical Society Interface, Spring, 49-51.
- [9] Correspondence, Sarah A. Rajala, ABET President and Michael K. J. Milligan, Chief Executive Officer, February 4, 2025.

# Appendix A. Survey: Civil Engineering Program implementation of Proposed Changes to EAC ABET Criterion 5

Thank you for your time and assistance in completing this voluntary survey which should take ~5 mins to complete. Our goal is to gather information programmatic activities to support program compliance with the EAC ABET Criterion 5 proposed curriculum revisions. As you complete the survey, we ask that you consider the civil engineering program specifically. All responses will be anonymous. We will appreciate your response by Dec 20, 2024. If you have any questions, please contact Norb Delatte (norb.delatte@okstate.edu), Audra Morse (anmorse@mtu.edu), Camilla Saviz (csaviz@pacific.edu)

Background: Proposed changes to the Engineering Accreditation Commission (EAC) of ABET General Criteria 5 (Curriculum) and Criterion 6 (Faculty) address diversity, equity, and inclusion and are expected to be adopted effective in the 2025-26 accreditation cycle. The proposed change to EAC ABET Criterion 5 is addition of: "content that ensures awareness of diversity, equity, and inclusion for professional practice consistent with the institution's mission." https://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-engineering-programs-2024-2025/.

#### Definitions are as follows:

- Inclusion is the intentional, proactive, and continuing efforts and practices in which all members respect, support, and value others.
- Diversity is the range of human differences, encompassing the characteristics that make one individual or group different from another. Diversity includes, but is not limited to, the following characteristics: race, ethnicity, culture, gender identity and expression, age, national origin, religious beliefs, work sector, physical ability, sexual orientation, socioeconomic status, education, marital status, language, physical appearance, and cognitive differences.
- Equity is the fair treatment, access, opportunity, and advancement for all people, achieved by intentional focus on their disparate needs, conditions, and abilities
- 1. I have read the above information. I have had the opportunity to ask questions and have my questions answered. I consent to participate in the study.
  - Yes. (please continue with the survey)
  - No (please exit the survey)
- 2. Type of academic institution
  - Public
  - Private
- 3. Program name (check all that apply in your department or unit)
  - Architectural Engineering
  - Civil Engineering
  - Chemical Engineering
  - Construction Engineering
  - Environmental Engineering
  - Mechanical Engineering
- 4. Highest degree offered in your civil engineering program
  - Bachelor
  - Master
  - PhD
- 5. Average annual number of civil engineering program graduates (undergraduate)
  - 1-10
  - 11-30
  - 31-50
  - 51-100
  - More than 100
- 6. Civil engineering program's next scheduled ABET visit
  - 2024-25

- 2025-26
- 2026-27
- 2027-28
- 2028-29
- 7. Your knowledge of proposed changes to ABET Criterion 5 to include diversity, equity, and Inclusion
  - Never heard of it
  - · Some familiarity
  - Already discussed among faculty in the program
  - Have already made curricular changes responsive to criteria
  - Participated in the Criterion 5 pilot program
- 8. Level of importance of including consideration of diversity, equity, and inclusion in your civil engineering program
  - Low
  - Medium
  - High
- 9. Level of importance of including consideration of diversity, equity, and inclusion in the civil engineering profession
  - Low
  - Medium
  - High
- 10. Ease of implementing consideration of diversity, equity, and inclusion in your civil engineering program
  - Low
  - Medium
  - High
- 11. How supportive is your program faculty about addressing diversity, equity, and inclusion in the curriculum
  - Most faculty are not supportive
  - Low support among most faculty
  - Medium support among most faculty
  - High support among most faculty
- 12. How supportive is your institution about addressing diversity, equity, and inclusion in the curriculum
  - Not supportive
  - Low support at the institution
  - Medium support at the institution
  - High support at the institution
- 13. Approximate percentage of faculty in your civil engineering program who are likely to be involved in addressing diversity, equity, and inclusion in your program
  - Only the Chair/Head will be involved
  - Less than 50% of faculty will be involved
  - More than 50% of faculty will be involved
  - 100% of faculty will be involved
- 14. If your program is already addressing diversity, equity, and inclusion in the civil engineering curriculum, please describe briefly:
- 15. Please identify any questions or concerns about addressing diversity, equity, and inclusion to comply with EAC ABET Criterion 5.
- 16. If ASCE prepares training for addressing diversity, equity, and inclusion to comply with EAC ABET Criterion 5, what information would be helpful for you and your program?
- 17. Additional comments, if any