

# FAQ for Master's Level Engineering Programs Seeking Accreditation

This document provides advice with respect to certain criteria issues and the completion of the Self-Study Questionnaire for engineering programs that seek accreditation under the General Criteria for Masters Level Programs.

Completion of any Engineering Accreditation Commission (EAC) accredited program represents readiness to enter professional practice in the area indicated by the program name. The currently applicable criteria (including the program criteria) for baccalaureate programs represent the foundation for satisfaction of this principle. For that reason, it can be expected that students entering master's level programs after completion of EAC accredited baccalaureate programs will have a relatively straightforward path to demonstration of satisfaction of master's criteria. It may be possible for master's level programs to provide a means for students from non-EAC accredited baccalaureate programs to also demonstrate satisfaction of the criteria, as outlined in this document.

It is important to recognize that revisions of the master's level criteria are under discussion within the EAC and its constituencies. Until this effort yields a specific result, programs seeking master's level accreditation must meet the requirements of the current General Criteria for Masters Level Programs. In the meantime, programs should monitor ABET publications to anticipate changes that will be published at least one year prior to implementation.

This document is advisory only and does not supersede or replace any part of the *Criteria for Accrediting Engineering Programs*. Accreditation decisions rest solely with the EAC relative to the Criteria.

If you have any questions, please contact the Accreditation Department.

## **Must a five-year master's program meet all of the criteria for baccalaureate programs?**

All graduates of an EAC-accredited master's program must have a postsecondary program of study that fulfills the baccalaureate level general criteria.

## **In what ways, if any, must the program educational objectives and the student outcomes required for a master's program be different than those for a baccalaureate program?**

The Criteria for Masters Level Programs require that the program develop, publish, and periodically review the educational objectives and student outcomes.

1. The *Criteria for Accrediting Engineering Programs* stipulate that the program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation and that these objectives are based on the needs of the program's constituencies. For master's programs, the program educational objectives must describe expectations that are consistent with one year of study beyond the baccalaureate level and the expectation that the student have an ability to apply master's level knowledge in a specialized area of engineering.
2. The *Criteria for Accrediting Engineering Programs* stipulate that student outcomes describe what students are expected to know and be able to do by the time of graduation. Therefore, the student outcomes must be consistent with one year of study beyond the baccalaureate level and the requirement that the program demonstrate that graduates have an ability to apply master's level knowledge in a specialized area of engineering related to the program area. Experience has shown that it may be possible for the student outcomes of a master's level program to be the same as those for a baccalaureate level program as long as the expectations concerning attainment of these outcomes are consistent with one year of study beyond the baccalaureate level and the requirement that the program demonstrate that graduates have an ability to apply master's level knowledge in a specialized area of engineering related to the program area.

**Must the "major design experience" required by Criterion 5 be separate from the demonstration of "an ability to apply master's level knowledge" required by General Criteria for Masters Level Programs?**

These are two different requirements. A major design experience is required to fulfill the baccalaureate level general criteria. The program must demonstrate that all graduates have fulfilled the baccalaureate level general criteria. Thus it must ensure that each graduate has followed a postsecondary program of study that includes a major design experience that satisfies Criterion 5 of the General Criteria for Baccalaureate Programs. The program is also required to demonstrate that graduates have an ability to apply master's level knowledge in a specialized area of engineering related to the program area. If the program chooses to use a common set of activities to satisfy both of these requirements, care must be taken to ensure that all requirements of the design experience are met and that the level of knowledge that is applied meets the standard of master's level knowledge. Experience indicates programs that use individual research project activities for the master's level requirement have difficulty demonstrating that this activity also satisfies the requirements for the major design experience.

**Can a master's program that admits only students who are graduates of EAC of ABET accredited undergraduate programs demonstrate only the requirements of the Masters Level Criteria in their assessment and evaluation activities and in the Self-Study Report submitted to ABET? May we assume that all requirements of the Baccalaureate Level Criteria have been met?**

The program must show that the General Criteria for Baccalaureate Programs are fulfilled. The program must show evidence under Criterion 1 that only students who are graduates of EAC of ABET accredited undergraduate programs are admitted. Any deviation from this restriction for this type of program would not be acceptable.

In addition, there are four other elements of the General Criteria for Masters Level Programs that must be satisfied: the requirement that the program develop, publish, and periodically review educational objectives and student outcomes; the requirement for fulfillment of program criteria appropriate to the master's level specialization area; the requirement for one academic year of study beyond the baccalaureate level; and the requirement that the program demonstrate that graduates have an ability to apply master's level knowledge in a specialized area of engineering related to the program area.

It is important to remember that the EAC of ABET accredits engineering programs leading to the professional practice of engineering, and that the program name must be descriptive of the content of the program. Master's level programs usually have two modifiers in the program name: the modifier "Master's" and a modifier indicating the area of the master's program. Thus the master's level program must have advanced content relevant to the specialized body of engineering knowledge indicated by the modifier in the program name. If the program admits students who are graduates of EAC of ABET accredited engineering programs in areas other than the area of the master's program, and if there are program criteria applicable to the master's level specialization area, the program must indicate how it ensures that all students completing the program in a given specialization area have fulfilled the part of the applicable program criteria that relates to the specialization area.

**How does a master's program that admits students who are graduates of non-accredited undergraduate engineering and/or non-engineering programs address the requirement to fulfill the baccalaureate level general criteria?**

If a program admits students who are graduates of baccalaureate programs that are not engineering programs or students who are graduates of engineering programs that are not EAC of ABET accredited, the program needs to demonstrate that its graduates meet the General Criteria for Baccalaureate Programs. The program must therefore document each of the following aspects of the General Criteria for Baccalaureate Programs.

- i. The master's program must have and enforce policies and procedures (including admissions procedures) that verify completion of baccalaureate level requirements. These policies and procedures must also ensure monitoring of student progress and completion of degree requirements for the master's degree.
- ii. If it admits students who are not graduates of EAC-accredited baccalaureate level engineering programs, the master's program must document that each such student has had a total program of study that has student outcomes covering all of Criterion 3(a) through 3(k) by the time the master's program is completed.
- iii. The master's program must document the extent to which the student outcomes 3(a) through 3(k), plus any that are locally articulated have been met by the students. It must also make use of this information as input for continuous improvement.
- iv. The master's program must indicate how the entire educational experience of each student includes at least one year of math and basic science as well as at least one and one-half years of engineering topics and a major design experience that meets the requirements of Criterion 5.
- v. The program must indicate how its faculty members meet the requirements of Criterion 6, its facilities meet the requirements of Criterion 7, and the level of institutional support and leadership meet the requirements of Criterion 8.

It is possible that in order to do this, the program may have to enforce policies ensuring that students who have not graduated from a program that is EAC or ABET accredited take additional courses as needed to fulfill all of the baccalaureate level general criteria and be adequately prepared to demonstrate an "ability to apply master's level knowledge in a specialized area of engineering related to the program area."

### **How do we use the Self-Study Questionnaire Template for a Masters Level accreditation?**

1. The cover page should clearly show accreditation is sought relative to the General Criteria for Masters Level Programs. A section should be added at the outset of the Background Information section that informs the Program Evaluator that the program seeks Masters Level accreditation and whether the program is a five-year program or a one-year or two-year post-baccalaureate program. The admission requirements should be briefly described for a post-baccalaureate program.
2. Information must be provided for all eight General Criteria for Baccalaureate Level Programs. The questions answered and tables provided should be altered to provide the information required as described in the FAQs above.
3. Information must be provided for the section titled General Criteria for Masters Level Programs.

4. Information must be provided for all Appendices. The questions answered and tables provided should be altered to provide information relative to the program.