**CONFIDENTIAL**

Report of the Visiting Team on the Accreditation Visit to

|  |
| --- |
| **<enter Institution name here>** |
| Name of Institution |
|  |
| **<enter visit date here>** |
| Visit Date |

|  |  |  |
| --- | --- | --- |
| **[enter name of program]** |  | **[enter name of program; remove if not required]** |
| Program title |  | Program title |
|  |  |  |
| **[enter name of program; remove if not required]** |  | **[enter name of program; remove if not required]** |
| Program title |  | Program title |

|  |  |  |
| --- | --- | --- |
| **Name of Team Chair** |  | insert signature here |
| Visiting Team Chair |  | Signature |

|  |
| --- |
|  |

Date of Report

**Canadian Engineering Accreditation Board**300 – 55 Metcalfe Street Ottawa, ON K1P 6L5 Tel.: (613) 232-2474

[visits@engineerscanada.ca](mailto:visits@engineerscanada.ca)

|  |  |
| --- | --- |
| **Action** | **Date** |
| Tracking of Issues Completed by Team Chair | insert |
| Tracking of Issues Received by Secretariat |  |
| Report Finalized by Team Chair |  |
| Report Sent to Editor |  |
| Report Received from Editor |  |
| Report Sent to Institution |  |

Update: August 2023

For the 2024/2025 visit cycle

Table of Contents

[Acknowledgements 8](#_Toc111103595)

[1. Overview 9](#_Toc111103596)

[1.1 Visit information 9](#_Toc111103597)

[1.2 Accreditation history (to be completed by the Secretariat) 9](#_Toc111103598)

[1.3 Institutional and engineering unit contacts 9](#_Toc111103599)

[1.4 Institutional context 9](#_Toc111103600)

[1.5 The engineering unit 9](#_Toc111103601)

[2. Overall Summary of Issues 10](#_Toc111103602)

[3. Report on the <Name 1> program 17](#_Toc111103603)

[3.1 General information 17](#_Toc111103604)

[3.2 Visit Information 17](#_Toc111103605)

[3.3 Evaluation of accreditation criteria 18](#_Toc111103606)

[3.4 History, current status and future plans 27](#_Toc111103607)

[3.5 Summary of strengths and suggestions for improvement 27](#_Toc111103608)

[3.6 Curriculum content information 27](#_Toc111103609)

[4. Supplementary information 28](#_Toc111103610)

[4.1 Visit schedule 28](#_Toc111103611)

[4.2 Individuals interviewed by the Team Chair, Vice Chair and General Visitor 28](#_Toc111103612)

[4.3 Facilities toured by the Team Chair, Vice Chair and General Visitor 28](#_Toc111103613)

[4.4 Comments on documentation 28](#_Toc111103614)

**General Visitors**

The CEAB has been informed that the provincial and territorial engineering regulators will no longer appoint General Visitors (GVs) to CEAB accreditation visiting teams.

Regulators may choose to send an observer to an accreditation visit. This change to the team composition will be managed internally by CEAB Visiting Team Chairs and the Secretariat. The Visiting Team Chair may identify a visiting team member to fulfill the role of the General Visitor, as needed.

**Instructions (not to be included in final report)**

***Introduction***

Accreditation decisions are made by the Canadian Engineering Accreditation Board using published accreditation criteria based on its analysis of:

* the questionnaire completed by the institution,
* the report of the visiting team,
* the institution’s response to the visiting team’s report, and
* clarifications, updates, and other final input provided by the institution and/or the visiting team.

The Accreditation Board will determine the specific criteria that affect an accreditation decision and will assign the level of importance to the criteria. The criteria affecting accreditation decisions and the level of importance of such criteria as determined by the Accreditation Board will be contained in the Accreditation Board decision letter to the institution. The Accreditation Board Chair’s letter reporting the accreditation decisions is the only official position of the Accreditation Board.

***The Report of the Visiting Team***

The *Report of the Visiting Team* is critical to the Canadian Engineering Accreditation Board’s accreditation decision-making process. To serve its intended purpose, the completed *Report of the Visiting Team* must contain all of the data, team member observations, and information collected during the accreditation visit.

This document is intended to be used as the template and guide for writing the *Report of the Visiting Team*. The overall structure and headings listed within this document are recommended for the completed report; deviations in content and structure of the report are acceptable to accommodate any unique or unusual circumstances that may arise.

The *Report of the Visiting Team* consists of the following distinct sections:

* Acknowledgements
* Overview: background information about the institution and the accreditation visit
* Summary of issues tables
* The report(s) on the program(s)
* Supplementary information – including information about effective/efficient practices noted by the team.

The *Report of the Visiting Team* may also include other supporting documents as required. These should be attached as appendices to the report and referenced in the table of contents.

***Instructions for the Summary of Issues tables***

Each program visitor is required to complete the Summary of Program Issuestables. The team chair will use the visitors’ program issues tables to complete the overall Summary of Issues tables provided in Section 2. The Summary of Issues table helps identify issues that are common to all of the programs under evaluation.

***Instructions for supplementary information***

Each program visitor is required to collect information regarding interviews or facility tours that were not specifically identified in the visit schedule, and any comments on documentation. The team chair will compile these in Section 5. Lists of persons interviewed will be held by the secretariat and will not appear in the final Report of the Visiting Team.

***Timelines for completion of the Report of the Visiting Team***

Preparation of the *Report of the Visiting Team* requires the collaboration of all team members. The team chair will assign tasks to various team members, such as examination of the common core, academic support departments (e.g. mathematics, physics, chemistry, complementary studies, so on.) and institutional facilities (e.g. library, central shops, computer centre, so on.), to ensure coverage of all aspects of accreditation for all programs.

It is recommended that each program visitor completes, to the extent possible, the issue tracker before the “exit statement” that takes place at the end of the visit. Completion of the Report on the Program is to be based on the program visitor’s review of the information contained in the questionnaire completed by the institution and on observations made during the visit, along with reviews and comments made by the General Visitor(s), Vice-Chair, and Team Chair.

Within two weeks of the visit, program visitors submit their final issue tracker to the team chair, if they have not already done so.

Within four weeks of the visit, the team chair submits the final issue tracker(s) to the Accreditation Board Secretariat. During this time, the team chair may contact members of the visiting team to request clarification or discuss aspects of the report. The Secretariat uses this/these documents to create the final report of the visit.

The final report, which is submitted to the institution for comment, should not contain any major findings that have not been previously communicated to the institution.

Instructions pages are not be included in the submitted report.

***Notes and Definitions***

In preparing *the Report of the Visiting Team* care must be taken to avoid the use of the words ‘concern’, ‘weakness’ and/or ‘deficiency’ (except when referring directly to issues identified in previous accreditation decision letters) so that these words are not used outside their now-defined meanings.

**Definitions**

**Concern:** Criterion satisfied; potential exists for non-satisfaction in near future.

**Weakness:** Criterion satisfied; insufficient strength of compliance to assure the quality of the program will be maintained.

**Deficiency:** Criterion is not satisfied.

The Accreditation Board decision letter is the only document that will classify issues using these categories.

***Instructions for the Report on the Program***

The Report on the Program document consists of a series of forms to be completed by the program visitor(s), with the assistance of the General Visitor(s), Vice-Chair, and Team Chair, as appropriate, and includes an opportunity to provide observations about the program’s strengths and suggestions for improvement.

The information reported should reflect the situation as observed at the time of the visit and were related to information provided by the institution in their completed *Questionnaire for Evaluation of an Engineering Program*.

**Only one report per program is submitted regardless of the number of visitors involved in evaluating the program.** It is imperative that when more than one member of the visiting team is participating in the drafting of the Report on the Program that the visitors come to an agreement regarding the contents of the individual program report.

***Observations and comments***

The following are the general principles for comments in visiting team reports:

* A ✓ means that there is no observed issue on the criterion or that it is a numerical criterion which has a positive binary result.
* A \* means that the Program Visitor’s Observation field will contain a description of an observed item flagged for CEAB or HEI review that, in the opinion of the visiting team, has the potential to either jeopardize future compliance or currently prevents compliance with the criterion.

Please remember that a comment has multiple audiences and purposes:

1. The Program; that allows them to understand the issue and questions the visitor had about compliance with a criterion, and allows them to formulate an appropriate response.
2. The Reviewer; that allows them to understand issues with meeting the criterion, so that they can formulate a motion to the CEAB.
3. The Team Chair, Editor and CEAB members; that allows them to clearly understand the issue.

When a \* is assigned, a detailed comment is required. Comments should all have the following structure:

1. Reference the appropriate criterion language.
2. State the evidence observed.
3. State the way in which the evidence indicates a negative impact on the program.
4. Comments should be precise and concise.

When a ✓ is assigned, do not comment.

***For programs containing options***

The “weakest-link” principle is to be used when evaluating curriculum content, i.e. each criterion is evaluated for each option, but only the lowest rating is reported for each criterion. It is essential that factors flagged for CEAB review marked with an \* observation type include an indication of which **program option** has been flagged. This detail must be included in the Program Visitor’s Observations.

***Guidance for evaluating graduate attributes***

The Program Visitor and/or Visiting Team are tasked with assembling evidence that the program has demonstrated measured student-performance (as a group or cohort) in respect of each attribute. Such evidence may be drawn both from the documentation provided by the program and from interviews and observations during the site visit.

A summary of the specific evidence accumulated from the documentation review and site visit for each attribute should be reported to the Accreditation Board to support the decision-making process (and will be disclosed to the institution for correction of factual errors). Reports should report observations – formative comments can be provided by the Program Visitor and/or Visiting Team, but the provision of summative analysis is the role of the Accreditation Board at the decision meeting.

***Instructions regarding the quantitative evaluation of curriculum content***

The Canadian Engineering Accreditation Board criteria require that the curriculum of an accredited program have minimum content in each of five categories: mathematics, natural science, engineering science, engineering design and complementary studies.

An “accreditation unit” (AU), based on the amount of lecture and laboratory time, is used to measure total curriculum content in a course. In cases where there is instruction outside of the usual lecture and lab format, a proportional method based on course credits or the equivalent can be used (so-called k-factor). The curriculum analysis requires the identification of the number of AU of each category identified with each course or an equivalent module.

Discussion among team members is essential, and it is most important that assessments be consistent across all programs.

***Instructions regarding the qualitative and quantitative evaluation of Engineering Design***

Engineering design AU allocation is found in two places: (1) design projects (significant design experience, or “capstone project”); and (2) in subject courses in which elements of design are taught, often in combination with other curriculum categories.

In the case of capstone projects, a proportional (i.e., k-factor) method is used to compute the number of AUs. The course description, its administration, and the student work are examined. The activity, especially as evidenced by project reports, should conform reasonably to the definition of design for the course to be accepted as 100% engineering design.

In the case of subject-specific courses in which engineering design AUs are claimed, the entire scope given by the definition of engineering design in the Accreditation Board criteria documentation is not usually found. When the institution is claiming engineering design AUs in such a course or learning activity, it should be evident to the program visitor that the student would be aware that they are learning about elements of design, and there should be evidence of creative activity and “open-ended” problems that normally accompany such learning. If project or laboratory activities are part of such a course, the full scope of the engineering design definition may not be present in the project report, as one would expect in a capstone project. The proportion of engineering design AUs from such a course would depend on the amount of design teaching and learning. The program visitor must be satisfied that the institution’s assessment is reasonable. If the program visitor is not satisfied, the value assigned to the engineering design AUs for the course can be adjusted after consultation with the appropriate people responsible for the program.

# Acknowledgements

A brief statement acknowledging the contributions and cooperation of individuals involved in the visit and visit arrangements should be included.

*Possible text: The visiting team would like to thank the administration, faculty, staff, and students from [HEI] for their efforts to make the visit an efficient process for all involved. Also, thanks to the staff at Engineers Canada for support of the visit logistics*

# Overview

## Visit information

On dates, a visiting team conducted an accreditation visit to the HEI, to evaluate one (1) engineering program.

The visiting team was comprised of:

|  |  |
| --- | --- |
| **Team chair** | Name and professional designation(s) as per Final Team List |
| **Vice chair** | Name and professional designation(s) as per Final Team List |
| **Program visitor – <program name>** | Name and professional designation(s) as per Final Team List |
| **Observer** | Name and professional designation(s) as per Final Team List |

## Accreditation history (to be completed by the Secretariat)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Program title** | **First accredited** | **Last accredited** | **Resulting from** | **Previous Decision** |
| <Program name> | < year > | < year > | * + Visit <date>   + Report due <date> |  |

## Institutional and engineering unit contacts

**Name and title of the President, or equivalent, of the institution**

**Name and title of the Dean**

**Person responsible for organizing the visit**

## Institutional context

The below are guidelines that can be custom written for each Institution.

<HEI> is located <city>, <province> and was founded in <date>. The <HEI> has <number> campuses in <city>.

The institution is divided into <number> Faculties with <number> research centers, offering more than <number> courses. Currently, there are more than <number> students enrolled and more than <number> academic and non-academic staff involved in teaching and administration

## The engineering unit

The school/faculty of engineering offers <number> undergraduate programs, one of which (<program name>) is the subject of this report.

Officers responsible for the engineering unit are listed below.

|  |  |  |  |
| --- | --- | --- | --- |
| Name of officer | Position | Professional designation | Province/ territory where licensed |
|  | Dean/Chair |  |  |
|  | Vice Dean/Vice Chair |  |  |
|  | Program Head 1 |  |  |
|  | *Add other relevant staff where appropriate* |  |  |

# Overall Summary of Issues

For criteria 3.1, 3.2, 3.3, 3.4, 3.5, and 3.6, the observations shall be:

* ✓ means that there is no observed issue on the criterion or that it is a numerical criterion which has a positive binary result.
* \* means that the Program Visitor’s Observation field will contain a description of an observed item flagged for CEAB and HEI review that, **in the opinion of the visiting team**, has the potential to either jeopardize future compliance or currently prevents compliance with the criterion.

|  |
| --- |
| ***3.1 Graduate attributes*** |

[**Please consult the GA/CI rubric found on Engineers Canada’s website here.**](https://engineerscanada.ca/sites/default/files/2021-03/gaci-rubrics-en.pdf)

|  |  |  |
| --- | --- | --- |
| **Accreditation Board Criteria** | | <Program 1> Engineering |
| 3.1.1 | Organization and engagement |  |
| 3.1.2 | Curriculum maps |  |
| 3.1.3 | Indicators |  |
| 3.1.4 | Assessment tools |  |
| 3.1.5 | Assessment results |  |
| ***Justification(s) regarding Graduate attributes criteria:*** | | |

| ***3.2 Continual improvement*** | | |
| --- | --- | --- |
| **Accreditation Board Criteria** | | <Program 1> Engineering |
| 3.2.1 | Improvement process |  |
| 3.2.2 | Stakeholder engagement |  |
| 3.2.3 | Improvement actions |  |
| ***Justification(s) regarding Continual improvement criteria:*** | | |

| ***3.3 Students*** | | |
| --- | --- | --- |
| **Accreditation Board criteria** | | <Program 1> Engineering | |
| 3.3.1 | Admission |  | |
| 3.3.2 | Promotion and graduation |  | |
| 3.3.3 | Academic Advising |  | |
| 3.3.4 | Degree auditing |  | |
| ***Justification(s) regarding student criteria:*** | | | |

| ***3.4 Curriculum content and quality*** | | |
| --- | --- | --- |
| **Accreditation Board criteria** | | <Program 1> Engineering |
| 3.4.1 | **Approach/methodology** for quantifying content | |
| 3.4.1.1 | Accreditation Units |  |
| 3.4.1.2 | Equivalent measure for AU |  |
| 3.4.1.3 | K Factor |  |
| 3.4.1.4 | Departures from approach |  |
| 3.4.2 | **Minimum Curriculum Components** (quantity) |  |
| 3.4.3 | **Mathematics and natural sciences:** min. 420 AU |  |
| 3.4.3.1 | **Mathematics:** min. 195 AU  Must include appropriate elements of linear algebra, differential and integral calculus, differential equations, probability, statistics, numerical analysis and discrete mathematics. |  |
| 3.4.3.2 | **Natural sciences:** min. 195 AU  Must include elements of physics and chemistry; elements of life sciences and earth sciences may also be included. |  |
| 3.4.4 | **Engineering science and engineering design:** min. 900 AU |  |
| 3.4.4.1 | **Specific engineering science and engineering design**: min. 600 AU shall be delivered by faculty members holding, or progressing toward, professional engineering licensure as specified in *the Interpretive statement on licensure expectations and requirements.* |  |
| 3.4.4.2 | **Engineering science:** min. 225 AU  Application of mathematics and natural science to practical problems. Engineering science must require the application of modern engineering tools. |  |
| 3.4.4.3 | **Other engineering disciplines**  In addition to program-specific engineering science the curriculum must include engineering science content that imparts an appreciation of other engineering disciplines. |  |
| 3.4.4.4 | **Specific engineering design:** min. 225 AU shall be delivered by faculty members holding professional engineering licensure as specified in the *Interpretive statement on licensure expectations and requirements.* |  |
| 3.4.4.5 | **Engineering design: min. 225 AU**  Engineering design integrates mathematics, natural sciences, engineering sciences and complementary studies to meet specific needs. Engineering design must require the application of modern engineering tools. |  |
| 3.4.4.6 | **Significant design experience** The program must culminate in a significant design experience under the professional responsibility of a licensed engineer. |  |
| 3.4.4.7 | **Modern engineering tools** Appropriate content requiring the application of modern engineering tools must be included in the engineering sciences and engineering design components of the curriculum. |  |
| 3.4.5 | **Complementary studies**: min. 225 AUMust include engineering economics; impact of technology on society; humanities and social sciences; oral and written communication; health and safety; professional ethics, equity and law; sustainable development and environmental stewardship. |  |
| 3.4.5.1 | **Essential components of complementary studies**While considerable latitude is provided in the choice of suitable content for the complementary studies component of the curriculum, some areas of study are essential in the education of an engineer. Accordingly, the curriculum must include studies in the following:a. Subject matter that deals with the humanities and social sciences;b. Oral and written communications;c. Professionalism, ethics, equity and law;d. The impact of technology and/or engineering on society;e. Health and safety;f. Sustainable development and environmental stewardship;g. Engineering economics and project management. |  |
| 3.4.6 | **University-level content** (quality): min. 1,850 AU |  |
| 3.4.7 | **Laboratory experience; safety procedures**Must be an integral component of the program and must include instruction in safety procedures. |  |
| 3.4.8 | **Evaluation of curriculum content** (transcript analysis)May include instruction prior studies in mathematics, natural science and complementary studies. May include any delivery mode. |  |
| 3.4.8.1 | Prior university-level education in admission considerations |  |
| 3.4.8.2 | Allowance for various modes of learning |  |
| ***Justification(s) regarding Curriculum content and quality criteria:*** | | |

| ***3.5 Program environment*** | | |
| --- | --- | --- |
| **Accreditation Board criteria** | | <Program 1> Engineering |
| 3.5.1 | **Quality of the educational experience** | |
| 3.5.1.1 | **Quality, morale and commitment**Students; faculty; support staff; and administration. |  |
| 3.5.1.2 | **Quality, suitability and accessibility**Laboratories; library; computer facilities; non-academic advising and other support services. |  |
| 3.5.2 | **Faculty** | |
| 3.5.2.1 | **Scope of faculty expertise**Sufficient faculty to cover, by experience and interest, all areas of the curriculum. |  |
| 3.5.2.2 | **Sufficient full-time faculty** Sufficient number of full-time faculty to assure adequate levels of student-faculty interaction; student curricula counselling; faculty participation in curriculum development. |  |
| 3.5.2.3 | **Balance of duties**Time for research; scholarly work; professional development; and industry interaction. |  |
| 3.5.2.4 | **Program dependence**Under no circumstances should a program be critically dependent on a single individual. |  |
| 3.5.3 | **Leadership** **(dean, program head or equivalents) licensure** |  |
| 3.5.4 | **Experience and competence of faculty members**High level of expertise and competence; dedicated to aims of engineering education; dedicated to the self-regulating profession. Faculty (as a whole) must have teaching, research and professional practice experience. |  |
| 3.5.5 | **Professional status of faculty members** ***This criterion is no longer relevant as it is assessed in criteria 3.4.4.1 and 3.4.4.4.*** | |
| 3.5.6 | **Financial resources**Sufficient to ensure faculty renewal; staff renewal; equipment maintenance; equipment renewal. |  |
| 3.5.7 | **Authority and responsibility for the engineering program**Under the control of licensed engineers. |  |
| 3.5.8 | **Curriculum committee under the control of licensed engineers**Under the control of licensed engineers. |  |
| ***Justification(s) regarding Program environment criteria:*** | | |

| ***3.6 Additional Criteria*** | | |
| --- | --- | --- |
| **Accreditation Board criteria** | | <Program 1> Engineering |
| 3.6.1 | **“Weakest Link” option**Following the principle that a program is only as strong as its “weakest link”, a program is accredited only if all such variations meet the criteria. |  |
| 3.6.2 | **“Engineering” in title**An accredited program must include the word “engineering” in its title. |  |
| 3.6.3 | **Descriptive title**The title of an accredited engineering program must be properly descriptive of the curriculum content. |  |
| 3.6.4 | **Composite titles**If a program, by virtue of its title, becomes subject to the content requirements for two or more engineering curricula, then the program must meet the Accreditation Board requirements for each engineering curriculum named. |  |
| 3.6.5 | **Distinct options**The Accreditation Board must have evidence that all engineering options contain a significant amount of distinct curriculum content and that the name of each option is descriptive of that curriculum content. |  |
| 3.6.6 | **Appropriate title**The Accreditation Board must have evidence that the program name is appropriate for all students graduating in the program regardless of the option taken. |  |
| ***Justification(s) regarding Additional criteria:*** | | |

### ***Justifications for \* observations:***

|  |
| --- |
|  |

### ***Additional remark(s):***

|  |
| --- |
|  |

# Report on the <Name 1> program

## General information

**Program visitor(s):**

**Degree designation:**

**Option(s) in the program:**

List the names of all the options for the program being evaluated, if applicable. Use the names as specified in the calendar.

**Person responsible for the program:**

Provide the name, title, mailing address, telephone number and other means of communication (e.g. courier address, e-mail address, fax number, etc.) of the person responsible for the program.

**Enrolment and degree data (from Table 4.3):**

|  |  |  |  |
| --- | --- | --- | --- |
| **Academic Year** | **Enrolment (FTES)** | | **Degrees Conferred** |
| First Year | Upper Years |
| *Program as a whole* | | | |
| Current year (<date>) |  |  |  |
| Current year (less one) |  |  |  |
| Current year (less two) |  |  |  |
| *Option:< Name>* | | | |
| Current year (<date>) |  |  |  |
| Current year (less one) |  |  |  |
| Current year (less two) |  |  |  |

## Visit Information

**Individuals interviewed:**

**Facilities toured:**

## Evaluation of accreditation criteria

### **Graduate attributes**

*The institution must demonstrate that the graduates of a program possess the twelve graduate attributes. The attributes will be interpreted in the context of candidates at the time of graduation. It is recognized that graduates will continue to build on the foundations that their engineering education has provided.*

[**Please consult the GA/CI rubric found on Engineers Canada’s website here.**](https://engineerscanada.ca/sites/default/files/2021-03/gaci-rubrics-en.pdf)

| **<NAME1> PROGRAM** | | | |
| --- | --- | --- | --- |
| **GRADUATE ATTRIBUTES** | | | |
|  | **Criterion 3.1** | **Observation Type** | **Program Visitor’s Observations** |
| 3.1.1 | **Organization and engagement** There must be demonstration that an organizational structure is in place to assure the sustainable development and measurement of graduate attributes. There must be demonstrated engagement in the process by faculty members and engineering leadership. |  |  |
| 3.1.2 | **Curriculum maps** There must be documented curriculum maps showing the relationship between learning activities for each of the attributes and the semesters in which these take place. Those activities where assessments are undertaken must be indicated. |  |  |
| 3.1.3 | **Indicators** For each attribute, there must be a set of measurable, documented indicators that describe what students must achieve in order to be considered competent in the corresponding attribute. |  |  |
| 3.1.4 | **Assessment tools** There must be documented assessment tools that are appropriate to the attribute and used as the basis for obtaining data on student learning with respect to all twelve attributes over a cycle of six years or less. |  |  |
| 3.1.5 | **Assessment results** At least one set of assessment results must be obtained for all twelve attributes over a period of six years or less. The results should provide clear evidence that the graduates of a program possess the attributes or that remedial action is in progress. |  |  |

### **Continual improvement**

Engineering programs are expected to continually improve. There must be processes in place that demonstrate that program outcomes are being assessed in the context of these attributes, and that the results are applied to the further development of the program.

| **<NAME1> PROGRAM** | | | |
| --- | --- | --- | --- |
| **CONTINUAL IMPROVEMENT** | | | |
|  | **Criterion 3.2** | **Observation Type** | **Program Visitor’s Observations** |
| 3.2.1 | **Improvement process** Engineering programs are expected to continually improve. There must be processes in place that demonstrate that program outcomes are being assessed in the context of the graduate attributes, and that the results are applied to the further development of the program |  |  |
| 3.2.2 | **Stakeholder engagement**There must be demonstrated engagement of stakeholders both internal and external to the program in the continual improvement process. |  |  |
| 3.2.3 | **Improvement actions**There must be a demonstration that the continual improvement process has led to consideration of specific actions corresponding to identifiable improvements in the program and/or its assessment process. ***This does not apply to new programs.*** |  |  |

### **Students**

*Accredited programs must have functional policies and procedures that deal with quality, admission, counselling, promotion and graduation of students. Although all accreditation criteria connect directly and indirectly with their education, attention is drawn to the following in particular: admission; promotion and graduation; and counselling and guidance.*

| **<NAME1> PROGRAM** | | | |
| --- | --- | --- | --- |
| **STUDENTS** | | | |
|  | **Criterion 3.3** | **Observation Type** | **Program Visitor’s Observations** |
| 3.3.1 | **Admission** There must be documented processes and policies for admission of students. Admission involving advanced standing, prior studies, transfer credits and/or exchange studies must be in compliance with the associated Accreditation Board regulations. |  |  |
| 3.3.2 | **Promotion and graduation** There must be documented processes and policies for promotion and graduation of students. The institution must verify that all students have met all its regulations for graduation in the program identified on the transcript, and that the curriculum followed is consistent with that of the accredited program. The program name must be appropriate for all students graduating from the program. |  |  |
| 3.3.3 | **Academic Advising** There must be processes and sufficient resources for the advising of students. |  |  |
| 3.3.4 | **Degree auditing** A requirement for accreditation is that the institution has verified, using methodologies accepted by the Accreditation Board, that all its student-related policies, procedures, and regulations apply to, and are met by, all students. |  |  |

### **Curriculum content and quality**

*The curriculum content criteria are designed to assure a foundation in mathematics and natural sciences, a broad preparation in engineering sciences and engineering design, and an exposure to non-technical subjects that supplement the technical aspects of the curriculum. All students must meet all curriculum content criteria.*

| **<NAME1> PROGRAM** | | | |
| --- | --- | --- | --- |
| **CURRICULUM CONTENT AND QUALITY** | | | |
|  | **Criterion 3.4** | **Observation Type** | **Program Visitor’s Observations** |
| 3.4.1 | **Approach and methodologies for quantifying curriculum content** | | |
| 3.4.1.1 | **Accreditation Units** Accreditation units (AU) are defined on an hourly basis for an activity which is granted academic credit and for which the associated number of hours corresponds to the actual contact time between the student and the faculty members, or designated alternates, responsible for delivering the program:   * one hour of lecture (corresponding to 50 minutes of activity) = 1 AU * one hour of laboratory or scheduled tutorial = 0.5 AU   This definition is applicable to most lectures and periods of laboratory or tutorial work. Classes of other than the nominal 50-minute duration are treated proportionally. In assessing the time assigned to determine the AU of various components of the curriculum, the actual instruction time exclusive of final examinations should be used. |  |  |
| 3.4.1.2 | **Equivalent measure for AUs** For an activity for which contact hours do not properly describe the extent of the work involved, such as significant design or research projects, curriculum delivered through the use of problem-based learning, or similar work officially recognized by the institution as a degree requirement, an equivalent measure in accreditation units, consistent with the above definition, should be used by the institution. |  |  |
| 3.4.1.3 | **K Factor** One method for determining an equivalent measure in AU is a calculation on a proportionality basis. This method relies on the use of a unit of academic credit defined by the institution to measure curriculum content. Specifically, a factor, K, is defined as the sum of AU for all common and compulsory courses for which the computation was carried out on an hourly basis, divided by the sum of all units defined by the institution for the same courses. |  |  |
| 3.4.1.4 | **Departures from approach** The Accreditation Board can give consideration to departures from this approach and these methodologies in any case in which it receives convincing documentation that well-considered innovation in engineering education is in progress. |  |  |
| 3.4.2 | **Minimum Curriculum Components** An engineering program must include the minimum for each of its components. |  |  |
| 3.4.3 | **Mathematics and Natural Sciences** A minimum of 420 AU of a combination of Mathematics and Natural Sciences are required. Within this combination, each of mathematics and natural sciences must not be less than 195 AU. |  |  |
| 3.4.3.1 | **Mathematics**  Mathematics minimum of 195 AU, elements and level appropriate to the program. |  |  |
| 3.4.3.2 | **Natural Sciences** A minimum of 195 AU in Natural Sciences are required. The natural sciences component of the curriculum must include elements of physics and chemistry; elements of life sciences and earth sciences may also be used to satisfy this category. These subjects are intended to impart an understanding of natural phenomena and relationships through the use of analytical and/or experimental techniques. |  |  |
| 3.4.4 | **Engineering science and engineering design**: min. 900 AU |  |  |
| 3.4.4.1 | **Specific engineering science and engineering design** A minimum of 600 AU of a combination of engineering science and engineering design curriculum content in an engineering program shall be delivered by faculty members holding, or progressing toward, professional engineering licensure as specified in the *Interpretive statement on licensure expectations and requirements*. |  |  |
| 3.4.4.2 | **Engineering science**: min. 225 AU Application of mathematics and natural science to practical problems. Engineering science must require the application of modern engineering tools. |  |  |
| 3.4.4.3 | **Other engineering disciplines** In addition to program-specific engineering science the curriculum must include engineering science content that imparts an appreciation of other engineering disciplines. |  |  |
| 3.4.4.4 | **Specific engineering design**A minimum of 225 AU of engineering design curriculum content in an engineering program shall be delivered by faculty members holding professional engineering licensure as specified in the *Interpretive statement on licensure expectations and requirements*. |  |  |
| 3.4.4.5 | **Engineering design** A minimum of 225 AU in Engineering Design are required.  Engineering design integrates mathematics, natural sciences, engineering sciences and complementary studies in order to develop elements, systems and processes to meet specific needs. It is a creative, iterative and open-ended process, subject to constraints which may be governed by standards or legislation to varying degrees depending upon the discipline. These constraints may also relate to economic, health, safety, environmental, societal or other interdisciplinary factors. |  |  |
| 3.4.4.6 | **Significant design experience** The engineering curriculum must culminate in a significant design experience conducted under the professional responsibility of faculty licensed to practice engineering in Canada, preferably in the jurisdiction in which the institution is located.  The significant design experience is based on the knowledge and skills acquired in earlier work and it preferably gives students an involvement in teamwork and project management. |  |  |
| 3.4.4.7 | **Modern engineering tools** Appropriate content requiring the application of modern engineering tools must be included in the engineering sciences and engineering design components of the curriculum. |  |  |
| 3.4.5 | **Complementary Studies**  A minimum of 225 AU of Complementary Studies in humanities, social sciences, arts, management, engineering economics and communications is required to complement the technical content of the curriculum. |  |  |
| 3.4.5.1 | **Essential components of complementary studies**While considerable latitude is provided in the choice of suitable content for the complementary studies component of the curriculum, some areas of study are essential in the education of an engineer. Accordingly, the curriculum must include studies in the following:Subject matter that deals with the humanities and social sciences;Oral and written communications;Professionalism, ethics, equity and law;The impact of technology and/or engineering on society;Health and safety;Sustainable development and environmental stewardship;Engineering economics and project management |  |  |
| 3.4.6 | **University-level content (quality): min. 1,850 AU**The program must have a minimum of 1,850 Accreditation units that are at a university level. |  |  |
| 3.4.7 | **Laboratory experience; safety procedures** Appropriate laboratory experience must be an integral component of the engineering curriculum. Instruction in safety procedures must be included in preparation for students’ laboratory and field experience |  |  |
| 3.4.8 | **Evaluation of curriculum content** The requirements for curriculum content must be satisfied by all students, including those claiming advanced standing, credit for prior post-secondary-level studies, transfer credits, and/or credit for exchange studies. |  |  |
| 3.4.8.1 | **Prior university-level education in admission considerations** It is recognized that, for programs at some institutions, some of the mathematics, natural sciences and complementary studies components of the curriculum may have been covered in prior university level (or post-secondary) education and this circumstance must be considered in the institution’s admission policy. |  |  |
| 3.4.8.2 | **Allowance for various modes of learning** These criteria do not limit accreditation to any particular mode of learning. In the case of distance learning, the Accreditation Board will rely on the Interpretive statement on distance learning, which is attached as an appendix to this document. |  |  |

### **Program Environment**

*The Accreditation Board considers the overall environment in which an engineering program is delivered.*

| **<NAME1> PROGRAM** | | | |
| --- | --- | --- | --- |
| **PROGRAM ENVIRONMENT** | | | |
|  | **Criterion 3.5** | **Observation Type** | **Program Visitor’s Observations** |
| 3.5.1 | **Quality of the educational experience**  Major importance is attached to the quality of the educational experience. | | |
| 3.5.1.1 | **Quality, morale and commitment**  Students, faculty, support staff and administration, |  |  |
| 3.5.1.2 | **Quality, suitability and accessibility**  Laboratories, library, computing facilities, non-academic advisory service, and other supporting facilities |  |  |
| 3.5.2 | **Faculty**  The character of the educational experience is influenced strongly by the competence, expertise, and outlook of the faculty. | | |
| 3.5.2.1 | **Scope of faculty expertise** There must be sufficient faculty to cover, by experience and interest, all areas of the curriculum. |  |  |
| 3.5.2.2 | **Sufficient full-time faculty**Even though the faculty involved in delivery of program elements may include full-time and part-time members, there must be a sufficient number of full-time faculty members to assure adequate levels of student-faculty interaction, student curricular counselling, and faculty participation in the development, control, and administration of the curriculum. |  |  |
| 3.5.2.3 | **Balance of faculty duties** Faculty administrative and teaching duties should be appropriately balanced to allow for adequate participation in research, scholarly work, professional development activities, and industrial interaction. |  |  |
| 3.5.2.4 | **Program dependence** Under no circumstances should a program be critically dependent on one individual. |  |  |
| 3.5.3 | **Leadership** **(dean, program head or equivalents) licensure** The Dean of Engineering (or equivalent officer) and the head of an engineering program (or equivalent officer with overall responsibility for each engineering program) are expected to provide effective leadership in engineering education and to have high standing in the engineering community. They are expected to be engineers licensed in Canada, preferably in the jurisdiction in which the institution is located. In those jurisdictions where the teaching of engineering is the practice of engineering, the officers are expected to be engineers licensed in that jurisdiction. |  |  |
| 3.5.4 | **Expertise and competence of faculty** Faculty delivering the engineering curriculum are expected to have a high level of expertise and competence, and to be dedicated to the aims of engineering education and of the self-regulating engineering profession. Factors may include: Level of academic education of facultyDiversity of facultyAbility of faculty members to communicate effectivelyExperience in teaching, research and design practiceLevel of scholarshipParticipation in professional and learned societiesSupport of program-related extra-curricular activitiesAttitudes to professional licensure |  |  |
| 3.5.5 | **Professional status of faculty members** ***This criterion is no longer relevant as it is assessed in criteria 3.4.4.1 and 3.4.4.4.*** | | |
| 3.5.6 | **Financial Resources**Qualified academic staff and support staff can be recruited, retained and provided with continuing professional development. Infrastructure and equipment can be acquired, maintained, and renewed. |  |  |
| 3.5.7 | **Authority and responsibility for the engineering program** The Engineering Faculty Council (or equivalent engineering body) must have clear, documented authority and responsibility for the engineering program, regardless of the administrative structure within which the engineering program is delivered. |  |  |
| 3.5.8 | **Curriculum committee** **under the control of licensed engineers** Engineering program curriculum changes are expected to be overseen by a formally structured curriculum committee. The majority of the members of the committee are expected to be licensed professional engineers in Canada, preferably in the jurisdiction in which the institution is located. In those jurisdictions where the teaching of engineering is the practice of engineering, they are expected to be licensed in that jurisdiction. |  |  |

### **Additional Criteria**

| **<NAME1> PROGRAM** | | | |
| --- | --- | --- | --- |
| **ADDITIONAL CRITERIA** | | | |
|  | **Criterion 3.6** | **Observation Type** | **Program Visitor’s Observations** |
| 3.6.1 | **“Weakest Link” option**  For purposes of accreditation, a program is characterized by a formally approved and published curriculum that is regarded as an entity by the institution and that can be considered independently. All options in the program are examined. Following the principle that a program is only as strong as its “weakest link”, a program is accredited only if all such variations meet the criteria. |  |  |
| 3.6.2 | **“Engineering” in title**  An accredited program must include the word “engineering” in its title. |  |  |
| 3.6.3 | **Descriptive title**  The title of an accredited engineering program must be properly descriptive of the curriculum content. |  |  |
| 3.6.4 | **Composite titles**  If a program, by virtue of its title, becomes subject to the content requirements for two or more engineering curricula, then the program must meet the Accreditation Board requirements for each engineering curriculum named. |  |  |
| 3.6.5 | **Distinct options**  The Accreditation Board must have evidence that all engineering options contain a significant amount of distinct curriculum content and that the name of each option is descriptive of that curriculum content. |  |  |
| 3.6.6 | **Appropriate title**  The Accreditation Board must have evidence that the program name is appropriate for all students graduating in the program regardless of the option taken. |  |  |

## History, current status and future plans

### **Resolution of previous issues**

If specific deficiencies, weaknesses or concerns were noted by the Accreditation Board (as reported in the Accreditation Board Chair’s accreditation decision letter) for the program following the last evaluation, refer to them and indicate the action taken in each case.

### 

### **Comments on self-appraisal and objectives**

## Summary of strengths and suggestions for improvement

### **Strengths and exemplary practices**

### **Suggestions for improvement**

The following comments are offered which the institution may consider in future revisions to its program. These suggestions are those of the author of this report and do not necessarily represent the views of the Accreditation Board or others.

## 

## Curriculum content information

Original curriculum content tables (from the Questionnaire) are no longer reproduced here. If there were AU re-allocations made by the Visiting Team, please provide a summary of changes for every option and the final visiting team summary table.

**Visiting Team course-by-course changes to AU-counts. Need to re-insert a table to show changes.**

# Supplementary information

## Visit schedule

## Individuals interviewed

List those not specifically identified in the visit schedule:

## Facilities toured

List those tours not specifically identified in the visit schedule:

## Comments on documentation