

# Consultation Document

## Proposed Academic Qualification Criteria

### Manual of Admissions

#### INTRODUCTION

Engineers Geoscientists Manitoba’s Manual of Admissions Task Group is consulting on proposed new academic criteria for first time professional engineering and geoscience applicants.

Council established new interim academic criteria in December 2024 until comprehensive academic qualification criteria with confirmatory program options are available. The new criteria in the Manual of Admissions are intended to align more closely with other engineering and geoscience regulators across Canada to ensure consistent academic requirements for the purposes of labour mobility while ensuring compliance with provincial fair registration practices legislation requirements. The Manual of Admissions is the Association’s policy manual on admission and registration requirements.

In order to obtain professional registration, Engineers Geoscientists uses a two-phase approach for first-time applicants: 1) academic qualification, and 2) competency-based assessment (CBA) to confirm competencies and work experience. Once an applicant is deemed academically qualified, the applicant is enrolled as an intern and completes the CBA process. To qualify for professional registration, in addition to completing CBA, the applicant must pass the National Professional Practice Exam.

The following proposed changes to the Manual of Admissions including academic criteria and confirmatory program options are available for feedback **until Thursday, February 20, 2025**.

Comments and feedback on the consultation document should be submitted to:  
[info@EngGeoMB.ca](mailto:info@EngGeoMB.ca)

## Section 2 Authority

### 2.2 Registration Committee

It is the role of the Registration Committee “to consider and decide upon applications for certificates of registration, temporary licence, specified scope licence and enrolment as engineering interns or geoscience interns”.

### 2.3 CEO & Registrar

Council has assigned the CEO of the Association the duties of Registrar. Council has charged the CEO to ensure that all applications that are to be considered and decided upon by the Registration

Committee are complete. To aid the CEO in this responsibility, the CEO may delegate authority to staff, assessors or committees. The Registrar has authority to consider and decide upon applications for certificates of registration for applicants registered and in good standing with a regulatory body of professional engineers or geoscientists of another jurisdiction; and for Section 2: Committees and Groups of the CEO

## 2.4 Committees & Groups [NEW SECTION]

Committees and Groups of the Registrar/CEO include:

The **Academic Review Committee** is a committee of academic assessors who individually assess and make recommendations on the academic suitability of an applicant.

The **Competency-Based Assessor (CBA) Group** is a group of assessors who individually assess an assigned applicant's experience and competency-based assessment report and assess readiness for professional registration.

At its discretion, the Registration Committee may accept the recommendations developed by the Registrar, Academic Review Committee assessors or CBA Assessors, modify recommendations or make any other recommendation regarding an applicant that is consistent with the Manual of Admissions. In accepting a recommendation made by the Registrar, Association staff or any committee in the registration process, the Registration Committee accepts the responsibility of that decision as if they had made it.

An applicant who is not satisfied with a recommendation submitted by a committee, assessor or staff may:

- Provide a written request, within 30 days of receiving the information, asking the committee, assessor or staff to reconsider.
- In the reconsideration, the assessor, staff or committee may make enquiries with other resources in order to form a new recommendation.

An applicant who disagrees with the new recommendation may request additional reconsideration, or as necessary, request the Registration Committee to review.

## Section 4: Academic Qualification for Professional Engineering and Professional Geoscience

In accordance with the Act and the by-laws, all applicants must be deemed academically qualified as a requirement for professional registration. Engineers Geoscientists Manitoba has adopted a confidence-based approach to determine academic qualification that strives to align and harmonize with other Canadian engineering and geoscience regulator academic assessment approaches and is objective, impartial, fair and transparent.

### 4.1 Confidence-Based Approach to Academic Assessment

Engineers Geoscientists Manitoba has defined three confidence levels based on the confidence of the Association that the academic program is acceptable to practice professional engineering or professional geoscience safely in Canada. The rigor of the assessment process for each level is proportionate to the level of risk that the program does not meet the standard required to ensure protection of the public.

**For Confidence Level 1**, Engineers Geoscientists Manitoba is confident that the academic program is acceptable to practice professional engineering or professional geoscience in Canada, and an academic assessment is not required.

Applicants providing verified and authenticated proof of any of the following qualifications will be deemed to have met the academic requirement for professional licensure and will not be required to undergo an academic assessment.

- Completed a post-secondary program (typically a bachelor's degree) of at least four-years in duration from:
  - an [Engineers Canada Canadian Accreditation Engineering Board \(CEAB\) accredited program](#) or;
  - an engineering program accredited by a signatory of the [Washington Accord](#) or [Commission des Titres d'Ingénieur \(CTI\) France](#); or
- Completed a post- graduate degree in engineering in addition to a four-year bachelor's degree from an institution that has accredited programs, in addition to a four-year bachelor's degree. The graduate degree **must** be in a closely related engineering discipline to the bachelor's degree; or
- Completed a post-secondary program (typically a bachelor's degree) of at least four years in duration in geoscience and demonstrates compliance with the coursework requirements of the [Geoscientists Canada Knowledge and Experience \(GKE\)](#) reference document. Compliance with the GKE may be achieved through a combination of undergraduate and graduate coursework; or
- Is a professional engineer or geoscientist of any other engineering or geoscientific Association within Canada who has been given the authority by a provincial or territorial

government to register professional engineers, professional geoscientists, geophysicists, or geologists; or

- Is a former member or intern of Engineers Geoscientists Manitoba applying for re-instatement, or,
- Is a professional engineer or geoscientist of any entity that licenses engineers or geoscientists, geophysicists, or geologists in any jurisdiction that has signed a Mobility Agreement with Engineers Geoscientists Manitoba.

To qualify under the **Washington Accord**:

- The date of graduation must be after the accreditation organization in the country became a member of the Washington Accord.
- The degree must be on the list of accredited programs in the country.
- The program must have been accredited at the time of graduation.
- All subjects must have been taken as part of an accredited program.

List of all Washington Accord country signatories with dates:

<https://www.internationalengineeringalliance.org/accords/washington/signatories/>

If at any point in the assessment process, including after results have been received, an applicant meets one of the above situations, these criteria will supersede the original assessment.

An applicant is deemed to be academically qualified if the applicant meets at least one Confidence Level 1 criteria. For Confidence Level 1, Engineers Geoscientists Manitoba is confident that the academic program is acceptable to practice professional engineering or professional geoscience in Canada.

**For Confidence Level 2**, Engineers Geoscientists Manitoba deems that the academic program may be comparable to university level engineering or geoscience in Canada but needs to ensure this through an academic assessment. Applicants that fall into this level will have the breadth, depth, progression and coherence of their education assessed and the level confirmed.

To ensure public safety, Engineers Geoscientists Manitoba must assess and confirm that each individual applicant has sufficient breadth, depth, progression and coherence of education and competence in professional practice. Additional details on assessment are detailed in the Appendix.

Engineers Geoscientists Manitoba considers 120 WES credits at an undergraduate level to be the minimum requirement for a 4-year bachelor's level degree to be considered a comparable amount of education to a 4-year Canadian bachelor's degree. Applicants deemed to be missing the equivalent of one or more years of full time study (30 Credit Units (CU)) at a bachelor's level, will be denied.

A bachelor's degree in engineering, a bachelor's degree in science in engineering or a

bachelor's degree in science in geoscience are acceptable for consideration. If the degree is a bachelor's degree in science (not geoscience or engineering), computer science, engineering technology or geoscience technology an applicant may or may not qualify for an academic assessment. If an applicant does not qualify, the application will be denied, and the applicant will be advised if the education meets the academic requirement for engineering or geoscience licensee (specified scope of practice licence).

### **Self Assessment**

A self assessment is required for **engineering applicants** only if the applicant does not meet any of the academic qualification criteria in confidence level 1.

A self assessment is required for **all geoscience applicants** because there is no accreditation of geoscience programs.

During a self-assessment, an applicant will undertake an analysis of their academic program in comparison to the expected content of current Canadian programs.

- For engineering, the applicant will use the CEQB syllabi assessments checklists by discipline available on the Association's website [link to be inserted].
- For geoscience, the applicant will use the GKE checklists by discipline available on the Association's website [link to be inserted].

**For Confidence Level 3**, Engineers Geoscientists Manitoba deems that the program is missing the equivalent of one or more years of fulltime bachelor's level engineering/geoscience study in Canada, which is too much to be remediated through Engineers Geoscientists Manitoba processes. Applicants that fall into confidence level 3 will be denied registration as an intern and will be advised whether the academic background meets the requirements for engineering or geoscience licensee.

There are two types of programs that commonly fall into this category, and can typically be identified without doing a detailed assessment:

- Laddering programs containing diploma credits deemed by WES to be post-secondary rather than undergraduate, such that less than 90 of the total credits are at the undergraduate or post graduate level.
- Bachelor's degrees in science or technology rather than engineering or geoscience that are either lacking first- and second-year science/math/engineering science subjects and/or depth in discipline specific subjects (low credit values). These programs are typically not acceptable to practice professional engineering/geoscience in the country where they were obtained.

The Association will use prior assessments and/or other reliable resources to determine whether the level of education is sufficient to practice professional engineering or geoscience in the country where it was obtained.

- If the level of education is not sufficient, then the applicant may be eligible for a specified scope of practice license (SSPL).
- If the level of education is sufficient, then the applicant will qualify for a Confidence Level 2 assessment.
- If it is not possible to clearly determine the level of education, then it will qualify for Confidence Level 2 assessment.

## 4.2 Assessment Approach for First Time Applicants

To ensure that registrants are qualified to practice professional engineering or professional geoscience safely in Canada, Engineers Geoscientists Manitoba must ensure that their educational program is comparable to bachelor's level engineering or geoscience in Canada.

To do this, Engineers Geoscientists Manitoba relies on third-party credential assessments to provide an analysis of the level and length of each credential compared to the Canadian education system and a translation of the credential name and major/specialty.

The credential assessment may also provide a listing (and translation as required) of all the course names and Canadian equivalent credit units and grade for each course. They do not provide analysis of the program content and whether it compares to bachelor's level engineering or geoscience in Canada.

The Engineers Geoscientists Manitoba academic assessment process takes the information from the credential assessment and decides whether the program content is comparable to bachelor's level engineering or geoscience in Canada. It is the content of the program, not the name of the credential or the major/specialty that determines whether the program is acceptable.

## 4.3 Document Requirements

### 1. Transcripts

All first-time applicants must provide authenticated and verified documents, to demonstrate their academic training, except in extenuating circumstances, as determined by the Registrar or delegated authority.

#### 1a. Canadian Education

Official transcripts issued directly to Engineers Geoscientists Manitoba by the institution either by mail, email or via an electronic delivery system supported by the institution (e.g., MyCreds), that include degree awarded, and date conferred. If the date conferred is not on the transcript, then a letter indicating that the requirements have been met for conferral must be provided directly to Engineers Geoscientists Manitoba from the institution. The letter must contain: the applicant's name, degree awarded (including discipline), and date of conferral. This can be emailed directly from the institution to Engineers Geoscientists Manitoba at: [transcripts@EngGeoMB.ca](mailto:transcripts@EngGeoMB.ca)

## **1b. International Education**

International Credential Advantage Package (ICAP) document-by-document or course-by-course credential assessment by World Education Services (WES) is required. If WES does not assess specific credentials, then alternative arrangements can be approved by the Registrar, or delegated authority, depending on the situation.

### **2. Self Assessment Checklist**

Engineering applicants undergoing the academic review process (Confidence level 2) are required to submit a self-assessment where the applicant has mapped their bachelor's degree (or equivalent) to the Canadian Engineering Qualifications Board (CEQB) syllabus that best matches their program of study.

All geoscience applicants must complete a self-assessment where the applicant has mapped their bachelor's degree (or equivalent) to the Geoscience Knowledge and Experience Requirements (GKE).

### **3. Resume**

Applicants with engineering and geoscience work experience should submit an up-to-date resume, focusing on technical work experience.

## **4.4 Assessment Process for First-Time Applicants**

The credit units (CU), and credit type from the WES course-by-course assessment are used to quantify the amount and level (and by inference the depth) of education in different subject areas. In most cases the title of the course is used to infer the appropriate subject area for the credits to be assigned to, but if the course titles are not specific enough, a program syllabus will also be considered (if available). At the discretion of the Registrar, if staff identify extenuating circumstances, other means to verify the content may be considered on a case-by-case basis.

Staff and academic assessors ensure that the breadth, depth, progression, and content produce a coherent program that aligns with the specified discipline/specialization of the program. Any gaps deemed to be significant will be explained to the applicant and must be remediated before the applicant may continue in the process.

If the gaps identified are equivalent to one or more years of study in a typical Canadian program, then the program is too deficient to be remediated by Engineers Geoscientists Manitoba processes and will be deemed to not meet the academic requirement for licensure as a professional member. However, the program may meet the academic requirement for a specified scope of practice license (SSPL).

### **Content Assessment Engineering**

An assessment of breadth, depth, progression, and coherence of program content will be done through a comparison to the Canadian Engineering Qualifications Board (CEQB) syllabi, in

accordance with the Academic Assessment Guideline.

### **Content Assessment Geoscience**

An assessment of breadth, depth, progression, and coherence of program content will be done through a course-by-course comparison to the Geoscience Knowledge and Experience Requirements for Professional Registration in Canada (GKE) in accordance with the Academic Assessment Guideline.

## **4.5 Confirmation of Program Level & Confirmatory Program**

An assessment may result in the following recommendations based upon the number of deficiencies found:

### ***Program Acceptable***

If there are 9 credit units (CU) or less in deficiencies (approximately 3 one-semester courses) AND no more than 6 CU of these are from the discipline specific topics, the program is acceptable, and the applicant will be assigned one of the following:

#### **a) Confirmatory Exams**

Applicant can choose three exam subjects that they write.

- For engineering, the applicant must choose **two technical exam subjects from group A and 1 from group B**, of the discipline specific subjects in their content assessment.
- For geoscience, the applicant may choose **three technical exam subjects from group 2A and/or group 2B** of the GKE stream they were assessed in.

#### **Fundamentals Exam**

As an alternative to the three exams, an applicant may choose to write the National Council of Examiners for Engineering and Surveying (NCEES) Fundamentals of engineering (FE) exam or the National Association of State Boards of Geology (ASBOG) Fundamentals of geology (FG) exam.

If an applicant fails any combination of exams three times (e.g., one confirmatory exam three times, or three different exams or the FE/FG three times), then they will be deemed to have not met the academic requirement for licensure and their application will be denied. They may only reapply after they have gained additional education or experience.

**b) Postgraduate Option to Waive Confirmatory Exams** – This is assigned if the applicant has a postgraduate engineering credential (i.e. a master’s degree, a Ph.D. degree, a postgraduate diploma, a postgraduate certificate, etc.) in the same, or closely related, discipline of study containing postgraduate courses that complement or build upon the bachelor’s degree content, and the credential content was not used significantly to fulfill knowledge area requirements during the bachelor’s degree assessment.



**c) Work Experience (WE) Option to Waive Confirmatory Exams** – If a review of the applicant’s resume gives an indication that they have **at least 4 years** of professional engineering or geoscience experience closely related to their bachelor’s degree and where application of engineering and geoscience knowledge and skills are likely, the applicant may be assigned the Work Experience (WE) Option to Waive Exams.

The applicant will go through technical work experience assessment in competency-based assessment (CBA) (Competency Category 1 for engineering, Competency Categories 2 and 3 for geoscience). If the experience is approved by an Assessor and Registration Committee, then they will be approved as an intern. If after three submissions the experience is not approved, then confirmatory exams must be written.

### ***Program Not Acceptable with Deficiencies***

If a program does not meet the “Program acceptable” requirements, and there are less than 30 CU of deficiencies in total, the applicant will be assigned the deficiencies and may clear them through appropriate actions. After the applicant has completed courses/exams to fill the gaps, the breadth and depth is considered acceptable.

### **Clearing Deficiencies**

Unless an assessor and/or the Academic Review Committee (ARC) states otherwise, CU deficiencies due to partially met topics are not assigned. Only deficiencies due to “Not met” topics need to be cleared by the applicant.

An applicant who has been assigned “Not met” deficiencies may clear them by taking courses for credit at a university or college recognized by the appropriate government authority in the country where they are taken. These courses must be approved by a staff assessor or the ARC, and the institution must issue a transcript directly to Engineers Geoscientists Manitoba showing that the courses were passed.

Assigned courses may be taken as part of a post baccalaureate diploma program such as the Post Baccalaureate Diploma in Engineering (PBDEng) at the University of Manitoba.

### ***Application Denied***

If the assessment results in 30 or more CU deficiencies (approximately one or more years’ worth of full-time academics), the applicant will be denied registration as an intern but may be deemed to meet the academic requirement for the specified scope of practice license (SSPL) pathway.

## **4.6 Reassessment**

If an applicant disagrees with their assessment result, then they may provide additional information and request a re-assessment. The re-assessment result is final.

### **Review of Other Relevant Information**

First-time applications for intern enrollment are subject to the review of any relevant information from other Canadian regulators where the applicant has applied. This includes, but is not limited to, the outcome of academic assessments and/or the results of any assigned technical exams.

**Other Canadian Regulator Outstanding Requirements**

A first-time application for intern enrollment will not be approved by the Registration Committee if the applicant has outstanding requirements with another Canadian regulator until those requirements are satisfied. The applicant may be required to complete a confirmatory program to become academic eligible for professional registration or licensure.

**4.7 Timelines**

After an applicant has received the result of the academic assessment, they will have **four years** to complete any outstanding requirements, or their file will be closed, and they will have to reapply.

**Dormant Applications**

If an application has been dormant (no activity of any kind) for **more than two years**, it will be closed and the applicant will have to reapply if they want to continue in the process. After the file is closed, **all** documents will be scanned, shredded and disposed. Electronic records will be kept for 10 years and then deleted.

# Appendix

## Assessment Information

### Breadth, Depth, Progression and Coherence of Education

Engineers Geoscientists Manitoba has adopted the *Regulator Guideline on the Academic Assessment of Non-Canadian Engineering Accreditation Board (CEAB) Applicants*, prepared by the Canadian Engineering Qualification Board (CEQB), which identifies three important aspects that must be included in the assessment of academic requirements:

- 1) Authentication and verification of academic documents
- 2) Assessment of breadth and depth of education
- 3) Confirmation of breadth and depth of education.

To ensure public safety, Engineers Geoscientists Manitoba will confirm the depth and breadth of education of each applicant in a demonstrable way, regardless of degree origin or degree name.

Engineers Geoscientists Manitoba also follows the following guiding principles from the CEQB regulator guideline for the assessment of non-CEAB applicants:

1. Assessment processes must be individualized.
2. Assessment processes must be fair.
3. Education documents must be authenticated and verified.
4. Assessment of breadth and depth of education should primarily be quantitative and partly qualitative.
5. Confirmation of breadth and depth of education is a requirement for all applicants.
6. Flexibility should be allowed between breadth and depth, as long as a minimum threshold is met.

Definitions include:

**Breadth:** amount and type of theoretical and practical knowledge in mathematics, natural sciences, geoscience, engineering sciences, engineering design and related non-technical skills.

**Depth:** level of theoretical and practical knowledge in mathematics, natural sciences, geoscience, engineering science, engineering design and related non-technical skills.

**Progression and Coherence:** education should demonstrate progression from concept introduction to complex analysis/problem solving, as well as coherence of subject matter related to the discipline of study.

## Engineering

The Canadian Engineering Accreditation Board (CEAB) accredits programs at Canadian higher education institutions and ensures the breadth, depth, progression and coherence of their programs. Graduates of accredited engineering programs are accepted as having confirmed breadth, depth, progression, and coherence of content beyond the threshold for registration. <https://engineerscanada.ca/accreditation/about-accreditation>

The Canadian Engineering Qualification Board (CEQB) develops and maintains syllabi that are representative of accredited Canadian engineering programs in a variety of disciplines as well as basic studies (math, natural science, and engineering science) that are common to many disciplines. Engineers Geoscientists Manitoba uses the CEQB syllabi to assess the breadth, depth, progression, and coherence of education of applicants who do not have a CEAB accredited engineering program. <https://engineerscanada.ca/regulatory-excellence/examination-syllabi>

## Geoscience

The Canadian Geoscience Standards Council maintains the geoscience knowledge requirement for professional registration as part of the *Geoscience Knowledge and Experience Requirements for Professional Registration in Canada* (GKE). Engineers Geoscientists Manitoba uses the GKE to assess the breadth, depth progression and coherence of education of all geoscience applicants. <https://geoscientistscanada.ca/source/pubs/images/GIT%20Guide-2024-DIGITAL-03142024.pdf>

## Guiding Principles for Academic Assessment

Engineers Geoscientists Manitoba uses the following guiding principles for academic assessment, which align with the general duties set out in [The Fair Registration Practices in Regulated Professions Act](#) of Manitoba:

**8(2)** If a regulated profession makes its own assessment of qualifications, it must do so in a way that is transparent, objective, impartial and fair; and,

**8(4)** The criteria used in an assessment of qualifications must be necessary to assess competence in the practice of the profession.

### **1. The amount of regulation should be proportionate to the level of risk to the public**

Engineers Geoscientists Manitoba adopts the concept of *right-touch regulation*, which means that the level of regulation is proportionate to the level of risk to the public. A confidence-based approach is used to determine the rigor of academic assessment processes.

### **2. Assessment processes must be individualized**

Each applicant's assessment should be based on their individual educational program

and experience. All post-secondary education, verified by authenticated academic documents, will be considered. Post-secondary level engineering or geoscience courses taken or taught, or a thesis written as part of a master's or Ph.D. program, may be used toward satisfying the academic requirements. Professional level work experience may be considered to compensate for gaps in the academic program.

### **3. Assessment processes must be fair**

Engineers Geoscientists Manitoba strives to ensure the following three types of fairness when assessing qualifications for registration:

- **Substantive fairness:** the decision is the result of pre-determined and defensible criteria, understandable to applicants.
- **Procedural fairness:** the assessment procedure is clear, transparent, timely and provides an equal opportunity to all applicants to demonstrate their education.
- **Relational fairness:** applicants feel that they are treated fairly during the process and their perception is considered and addressed.

#### **3a. Qualifications must be authenticated and verified**

In most cases, Engineers Geoscientists Manitoba relies on the impartiality and specialized expertise of a third-party credential assessment agency (e.g., World Education Services) to authenticate and verify academic documents. These agencies provide analysis of the level and length of the applicant's program compared to the Canadian education system. They do not assess the engineering or geoscience content of the program. That is the role of Engineers Geoscientists Manitoba.

If there is a valid reason why a third-party academic credential assessment cannot be obtained, alternative arrangements can be made on a case-by-case basis, by the Registrar.

Work experience history and competence must be validated by appropriately qualified individuals, none of whom are the applicant.

#### **3b. Breadth, depth, progression and coherence of education must be assessed consistently**

For programs that are not CEAB accredited, Engineers Geoscientists Manitoba compares the content of an applicant's program to the CEQB syllabi or the GKE to assess breadth, depth, progression and coherence.

Academic assessors will undertake an assessment to determine whether the program of study includes sufficient educational content in mathematics, natural sciences, complementary studies, geoscience or engineering science and design as well as progression from concept introduction to complex analysis/problem solving, and coherence of subject matter related to the discipline of study. Any gaps deemed to be significant will be explained to the applicant.

**3c. Level of education must be confirmed**

The level of education can be confirmed by:

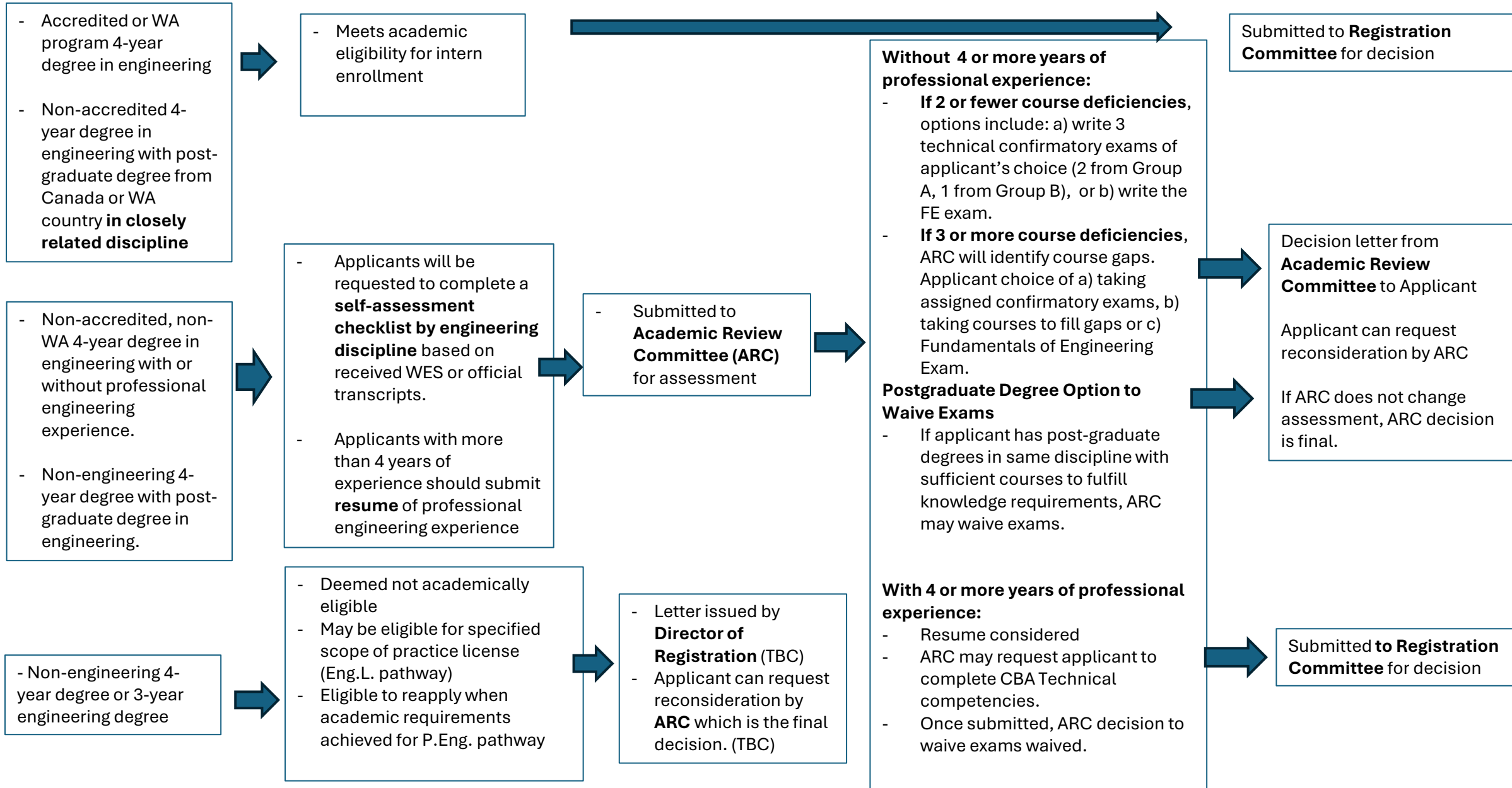
- i. CEAB accreditation
- ii. Accreditation by a system that is deemed to be substantially equivalent to CEAB (e.g, Washington Accord)
- iii. Technical exams
- iv. Work experience at a professional level in the discipline of education
- v. Technical, post-graduate education in a closely related discipline

**3d. Applicants must be given an opportunity for reassessment**

If an applicant disagrees with the assessment outcome, they will be given an opportunity for a reassessment.

# Engineering – P.Eng. Academic Qualifications

DRAFT FOR CONSULTATION



# Geoscience – P.Geo. Academic Qualifications

DRAFT - FOR CONSULTATION

