Professional Engineers
and Geoscientists of BC

# COMPETENCY-BASED ASSESSMENT
# OF ENGINEERING WORK EXPERIENCE

This document is intended to provide a brief introduction to APEGBC's Competency-Based Assessment system.

## OVERVIEW

APEGBC's Competence Assessment System is intended to preserve the valued reputation, responsibility, and professionalism of the P.Eng. designation. The Competency Framework and online system was developed in order to ensure that APEGBC's requirements uphold and protect the public interest while maintaining an equitable, transparent, consistent and efficient registration process. The Competency Framework comprises the required proficiencies to enter the engineering profession and provides clear guidance on the path to registration for applicants, referees, reviewers, and employers alike.

The Competency Experience Reporting System, which enables the experience component of a P.Eng. application to be submitted, validated, and assessed online, was launched in 2012 and is now a recommended reporting option for new applicants and Engineers-In-Training.

## COMPETENCY-BASED ASSESSMENT: ELEMENTS AND DEFINITIONS

### COMPETENCY

Competency can be defined as the ability to perform the tasks and roles of an occupational category to standards expected and recognized by employers and the community at large. APEGBC's Competency Framework delineates the common competencies related to work experience that are essential for Professional Engineers in all disciplines to ensure effective practice and public safety.

### COMPETENCY CATEGORY

APEGBC's Competency Framework includes seven Competency Categories, which are categorical groupings of competencies or skills. The seven categories represent the essential areas in which Professional Engineers of all disciplines must have expertise in order to ensure effective practice and public safety. Each Competency Category contains a list of the Key Competencies required in that area.

The seven Competency Categories that applicants must demonstrate in order to achieve professional registration are:

1. **TECHNICAL COMPETENCE**
2. **COMMUNICATION**
3. **PROJECT & FINANCIAL MANAGEMENT**

4. **TEAM EFFECTIVENESS**
5. **PROFESSIONAL ACCOUNTABILITY**
6. **SOCIAL, ECONOMIC, ENVIRONMENTAL & SUSTAINABILITY**
7. **PERSONAL CONTINUING PROFESSIONAL DEVELOPMENT (CPD)**

## KEY COMPETENCIES

Key Competencies are defined as an identified skill-set or knowledge-base which the candidate must have attained to achieve professional registration. They are behavioural-type descriptions of what an applicant should demonstrate they have done in practice to meet the required level of expertise in each Competency Category. A successful candidate must meet each key competency to at minimum level one on the Competency Rating Scale (a training level), while achieving the required average level for each category as a whole, which varies from 2 to 3.

## INDICATORS

Indicators are defined as specific examples of activities, actions, skills or behaviours that an applicant could use to demonstrate the existence and achievement of a competency. APEGBC provides a list of indicators for each Key Competency in order to help applicants to understand what types of examples are required to meet each requirement, or what specific knowledge-base, experience or skill they must develop before achieving registration. The indicators provided may be generic to all engineering disciplines (as in the case of Competency Categories 2-7) or discipline specific (Category 1). Indicators are listed under each Key Competency throughout the online system.

## COMPETENCY RATING SCALE & COMPETENCE LEVEL

Achievement of each category is measured through a Competency Rating Scale that outlines six different levels of competence (0-5). The rating scale serves to set out the minimum level of competence required to satisfy the requirements for registration as a professional engineer. The overall level of competence required will be specified for each category, and candidates must have achieved at least level one in each Key Competency. A brief outline of each level appears in Table 1.

## Table 1: Competency Rating Scale Summary

| Level of competence | Short Description:<br><br>Category 1 | Short Description:<br><br>Categories 2-6 | Short Description:<br><br>Category 7 | Direct Supervision Required | Responsibility & Risk | Complexity of applicant's own work | Supervision & Development of others*<br>*Category 1 Only |
|---|---|---|---|---|---|---|---|
| 0 | Little or no exposure to the competency | Little or no exposure to the competency | No CPD completed and/or planned; no gap analysis | N/A | N/A | N/A | N/A |
| 1 | Training Level: A general appreciation and awareness of the competency is required | Training Level: A general appreciation and awareness of the competency is required | Minimal amount of CPD completed and/or planned; CPD completed may not address professional competence; An incomplete gap analysis | Significant | minimal | minimal | none |
| 2 | Requires knowledge and understanding of objectives; Uses standard engineering methods and techniques in solving problems | At a level of limited experience; Carries out activities of limited scope and complexity; Requires knowledge and understanding of objectives | A marginal amount of CPD completed and planned; A marginal/insufficient gap analysis | considerable | some | Some | limited |
| 3 | Carries out assignments of | Approaching a professional level; | Adequate amount of CPD completed | some | considerable | moderate | some |

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| | moderate scope and complexity; is typically seen to be prepared to assume professional engineering responsibilities. | Carries out activities of moderate complexity. | and/or planned; An adequate gap analysis | | | | |
| **4** | Carries out responsible and varied assignments requiring general familiarity with a broad field of engineering and knowledge | Working at a professional level; carries out responsible and varied activities | A good amount of CPD completed and/or planned; a strong gap analysis | minimal | significant | considerable | some |
| **5** | Uses mature engineering knowledge; independent accomplishment, and coordination of difficult and responsible assignments | At a mature professional level; Independent coordination of difficult and responsible activities | Provides and demonstrates leadership in continuing professional development activities; a superior gap analysis | autonomous | total | significant | some |

## APPLICATION COMPONENTS

There are two main components that applicants must submit as part of their Competency-Based Assessment, both of which are submitted through the online system:

1. A brief, chronological **Work experience and Education History**. This provides a short form overview of an applicant's experience.

2. A **Competency Self-Assessment** using examples drawn from work experience to demonstrate achievement of each Key Competency

## EXAMPLES

Applicants are asked to describe an example of their recent engineering activities that best demonstrates their achievement of each Key Competency, and divide their description into the categories of situation, action, and outcome. Brevity is encouraged. The examples that applicants select should reflect activities or projects in which they had responsibility and must be in the discipline of engineering indicated on their application.

## REFERENCE REQUIREMENTS

An applicant's **Competency Self-Assessment** must be confirmed by their Validators (References). An applicant assigns each example to a Validator that has personal knowledge of the work described, ideally a P.Eng. Supervisor, and that Validator confirms the competence level they believe the applicant to have demonstrated. Validators also answer overall questions identical to those on APEGBC's current Reference Form. Applicants must provide a minimum of four Validators.

## FURTHER QUESTIONS

More information about the Competency-Based Assessment and the online tool can be found here: https://www.apeg.bc.ca/Become-a-Member/Competency-Experience-Reporting-System.

If you have any further questions regarding the Competency Based Assessment system, please contact Allison Brownlee at abrownlee@apeg.bc.ca.