

Examination Blueprint

Our Examination Commitment

RECA's Board of Directors and Industry Councils are committed to following accreditation examination best practices. This Examination Blueprint describes RECA's accreditation examination process. Our Examination Blueprint is based on the *National Commission for Certifying Agencies (NCCA) Standards for Accreditation of Certification Programs* and *ISO 17024 Conformity Assessment - General Requirements for Bodies Operating Certification of Persons*.

These certification principles require examinations to be developed and weighted based on objective criteria for assessing the specific knowledge, skills, and abilities required for competent practice. Including the appropriate number and type of questions for each competency and learning outcome is essential to differentiate between "competent" and "not yet competent" applicants. Psychometric reports on RECA's Licensing Examinations will be used to assess the reliability and validity of exam questions. RECA will publish Examination Report Summaries to help Course Providers improve their courses and enable learners to make informed education decisions.

Licensing Exams

1.1

RECA will administer written licensing examinations that comply with the standards in this document.

A written examination provides verifiable evidence of a learner's mastery of competencies. It ensures that licenses are only provided to individuals who understand their regulatory obligations and can provide competent service. This is congruent with RECA's mandate of consumer protection.



Guidance

constructed response

• Scenarios or cases

Exam question formats

• Multiple-choice

may include:

Objective



Threshold

RECA will carry out examinations of sufficient length and quality to meet the standards set out in this document



Documents

RECA will publish and maintain a RECA Licensing Exam Types document that lists and defines the possible exam item formats.

RECA will run independent psychometric reports on all examinations and remediations or validity enhancements.

Psychometric reports indicating successful learner pass rates by course provider will be published on RECA's website.

Design and Development

Design and Development standards apply to the process of translating job requirements into competencies, then converting them into an examination that measures the appropriate breadth, depth, and cognitive processes related to each competency. Design and development standards ensure examinations are valid and reliable.

2.1

Individual course exam blueprints are created based on the competencies to be assessed and identify the proportion of marks/items allocated to each competency.

Licensing course competencies correlate with the licensing exam. This is the basis for establishing that an exam measures what it purports to measure, also know as content validity. Each competency is tested, at least in part, at the cognitive learning level (i.e., Bloom's level) identified as appropriate in the Competency Profile.



Guidance

The Examination Blueprint outlines the competencies that will be assessed on a specific licensing exam.

While every competency is tested on each exam, different forms of an exam may cover different specific learning outcomes within a competency.



Threshold

An exam blueprint that demonstrates how license specific competencies will be assessed on the licensing exam.



Documents

RECA will develop an exam blueprint for each course that identifies the allocation of marks/items to each competency and Bloom's level.

Exam marks and content are allocated to a competency area based on the relative importance of a competency, frequency of use in practice, and ability to assess the competency through a written examination.

The competencies demonstrated support the exam's content validity. Allocating content based on these characteristics ensures that the exam measures both what it purports to measure, and that what it measures is relevant to subsequent practice. This sets the "groundwork" for predictive validation.



An exam cycle must cover all critical and important competencies. Not all competencies are equal. Some are more important because of the principles they teach; others take on added importance because they are used constantly.

While the Competency Profile is the starting point for an exam blueprint, there is an element of judgment involved in creating the blueprint.

Exam blueprints are reviewed periodically, both prospectively and retrospectively. The blueprints include the rationale for item allocation.



Critical and Important competencies are assessed on each exam with proportionally more weight allocated to Critical competencies.



Exam blueprint for licensing exam.

All Critical and Important competencies are tested over a defined cycle of exams. A "cycle of exams" is a set of exams with differing questions offered over a

Part of content validity is ensuring all significant competencies are sufficiently tested at the appropriate cognitive level over a cycle of exams. Variation in coverage ensures that learners must study all competencies to succeed on the exam.

defined period of time.





Threshold



Critical competencies should be assessed through more questions and carry a greater weight on exams than Important competencies

Within each group of competencies, some sub-competencies will also merit more coverage than others.

Over a cycle of exams, all testable competencies

should be covered.

achieved across multiple versions of a single exam and through successive cycles of an exam.

Coverage may be

Exam blueprints are reviewed periodically, both prospectively indicating planned testing of content, and retrospectively to evaluate how the exam/exam items performed.

Evidence that all testable competencies are included in the exam cycle.

Exam blueprint for licensing exam.

RECA will use qualified assessment designers, with relevant credentials, experience, training, and/or knowledge, to competently write fair, valid, and reliable examinations.

Writing high quality credentialling exam questions requires educational theory knowledge and subject-matter information to ensure that questions are correct, reflect current practice, and measure the intended competency at the desired cognitive level. Training on item writing helps ensure questions are fair.

Test items should only measure the competencies they are designed to measure. Achieving this aim requires education and training. Subject matter information is necessary but not sufficient as preparation for item development.



Assessment design competency is based on work experience and formal education. This is often combined with explicit in-house item writing training. RECA will employ established methodologies to identify Subject Matter Experts and employ qualified assessment designers to work with them.

An alternative to training and vetting assessment designers is to engage a company that develops test items commercially.



Collect, assess, and retain assessment designers and SME resumes



Proof of competency (e.g., evidence of work experience and academic preparation or cooperative work between individuals with work experience and academic preparation).

Questions are developed according to the exam blueprint. A knowledgeable independent party reviews the questions and identifies the area of competence without prior knowledge of the assessment designer's intent.

There is a standardized process for resolving disagreements.

Correspondence between item content and the test blueprint is a basic building block of content validity. There is often some subjectivity in assessing the competence that an item measures. Independent review helps to standardize competence assessment.



Independent reviewers can prove helpful, but if the pool of learners is small, a single independent reviewer will suffice. An item can reflect more than one competency. Reviewers must be subject-matter experts to assess competencies examined.



Threshold

At least 75% agreement in classification of core competencies and at least 60% for secondary competencies.



Evidence of independent review and report on agreement rate before and after resolution of differences.

Assessment item quality must be independently reviewed. Quality review includes item construction and avoidance of biases at a minimum. Where there is a large number of learners, quality review should also include answer accuracy and item difficulty reviews.

Test items should only measure the competencies they are designed to measure. This review aims to eliminate "construct irrelevant variation" and helps ensure consistency from one exam to the next.



Guidance

See guidelines from NOCA, CLEAR, or other organizations regarding typical faults with objective style questions and apply these to the items developed.

Familiarity with item writing is more important than subject matter expertise. There are academic and commercial services available that can be engaged to review question structure and bias.



Threshold

At least one independent reviewer



Documents

RECA will publish a document describing the independent review process.

Where possible, exam questions will be pre-tested before they are included in an exam.

This is a final check on item quality that ensures an item measures the intended competency. It supports exam reliability, validity, and consistency through the exam cycle and over successive exams.





Threshold



There are three basic methods, which may be combined or used independently in larger jurisdictions:

- Use questions from prior exams with known levels of difficulty
- Put trial questions on each exam that don't count toward the learner score
- Enlist the help of recently qualified professionals to try out the questions on a confidential basis

Alternatively, an independent reviewer can be engaged to assess the difficulty of the item in broad terms (i.e., easy, average, difficult).

Using an approved pre-testing method.

Documentation of pretesting process and results.

Examinations will have a sufficient number of competency-specific scoring opportunities to adequately and fairly assess competence. Adequate time should be provided to answer these questions.

The number of questions on an exam puts limits on the reliability of the exam. To ensure adequate overall reliability, there must be a sufficient number of questions.



Examinations should contain a sufficient number of questions or scoring opportunities. More are desirable to improve reliability.

If an exam contains constructed response questions or other complex items, scoring opportunities should be counted rather than questions.



A minimum of 50 items or scoring opportunities per examination for every 2-hour period.

Do

Documents

Exam blueprint and administration instructions.

Examinations will contain a mix of questions that allow for assessment of learning at different levels and content integration.

For an exam to be a good indicator of competence on the job, it should contain items that are realistic, assess learning beyond rote memory, and require integration of content needed to perform the identified job tasks. It should also contain items at differing levels of difficulty to better differentiate among learners.



Guidance

In addition to stand-alone multiple-choice questions,

multiple-choice questions, the use of realistic cases as the basis for several multiple choice or shortanswer questions is desirable.

Constructed response questions and cases provide an opportunity to demonstrate integration of knowledge. This also provides an opportunity to increase the breadth of the assessment without increasing the number of questions.

To the extent the work environment requires calculations, this should be reflected on exams.

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Threshold

An exam structure document and rubric(s) if required. The exam structure document should include the number of case-based items and the number of items requiring integration of knowledge across multiple competencies.



Documents

RECA Licensing Exam Item Types document.

Constructed response rubric(s).

Exam structure document that outlines allocation of marks by question type and competency.

Exam Administration

Exam Administration Standards apply to exam production and distribution, as well as the practices that surround exam administration, including physical setting. These procedures help ensure exam integrity and that unintended issues (e.g., lighting, fraud, failure to understand instructions) do not affect exam results.

3.1

All persons with access to exam questions will have signed nondisclosure agreements (NDAs).

For fair, valid exams, no participant should have prior content knowledge. "Leaks" or "inadvertent hints" from staff are a known bias source. Staff recognition of confidentiality is critical.



The main purpose is to foster awareness, so discussion of why the agreement is needed is critical to success. This should include but not be limited to:

- Item authors
- Editors
- Reviewers
- Exam production staff
- Exam distribution staff
- Invigilators and their supervisors
- Markers
- Members of examination-related work groups



Threshold

All persons sign at least a basic non-disclosure agreement.



Documents

Signed Non-Disclosure Agreements.



Guidance



Threshold



Documents

RECA has formal procedures in place to ensure that exam content is secure prior to the exam.

Fairness demands that exam content is secure prior to the exam, especially with regards to individuals who may have a vested interest in exam results.

In principle, only the exam developer should know the exam contents.

Apply the 'need to know' principle when considering who can see questions beforehand.

Exam content access is limited to those who demonstrably need access.

RECA will publish a document describing the process used to protect exam questions from both learners and any personnel who do not 'need to know' in advance



Guidance



Threshold



Documents

Learner responses will be secured following the exam.

Protection of privacy is a fundamental learner right.
Additionally, protecting responses ensures that exam contents are less readily disclosed.

Learner examination responses are safeguarded, and unauthorized access is difficult.

Responses are automatically deleted after a review period.

Exam content access is limited to those who demonstrably need access.

There are IT procedures in place to delete responses after the review period.

Document describing the process used to protect exam results from any parties who do not 'need to know' the results.

Document describing the process for destroying the results after the retention period passes.

RECA has robust measures in place to prevent dishonesty and safeguard the integrity of exam questions.

These practices are designed to deter cheating and ensure fairness. The single biggest risk is verifying the identity of the test taker.

The second biggest risk is physical and electronic methods of cheating whether individual or in collusion with other learners or Course Providers. This includes question harvesting.



Guidance

RECA's exam provider, site administrators, and invigilators follow standardized procedures to minimize cheating opportunities and maximize detection of potential cheating.

RECA will create a large bank of examination questions and will exercise question and response randomization based on the competency blueprint to reduce dishonesty and safeguard the integrity of exam questions.



Threshold

Sites are secured hours before an exam begins.

Learners do not know precisely where they will sit until arrival.

RECA uses a large bank of exam questions.

Exam questions are double randomized using an exam blueprint.

RECA periodically statistically reviews exam questions to determine if items have been compromised.

Course Providers involved in question harvesting lose their accreditation.

Legal action is undertaken against practice exam question harvesting.



Documents

RECA provides learners with an examination procedures document that outlines the rules they must follow to completing licensing examinations. This document also describes the tools, both paper and electronic, available as a resource for learners during the exam.

Internal document identifying procedures used to deter cheating.

The identity of learners who take the licensing examination is verified with suitable identification.

Public protection demands that the person taking the exam is the person who will be licensed. Identity fraud is one of the most common types of fraud for examinations, whereby an already knowledgeable person takes the exam on the learner's behalf.



RECA will use a process to:

- Ensure learners do not have access to the licensing exam until the Course Provider certifies the individual has completed the course and is qualified to write the exam
- RECA will notify RECA's exam provider of the individuals who are permitted to write the exam and which exam they may write
- The learner will need to provide governmentissued photo ID consistent with the ID provided during RECA's eligibility process

Threshold

The learner must provide positive proof of their identity at key points in the process.

The identity provided will follow through to licensing.



Eligibility records:

- Course Provider's record attesting the learner has completed the course and is competent
- Permission-to-write and permission-to-rewrite records
- Exam providers identification records

See CRM for records

Exams will be administered in places that are substantively free of noise, poor lighting, and other distractions.

Exams must measure only what they are designed to measure and be free of "Construct Irrelevant Variation" (CIV). Noise, poor lighting, and other environmental issues are clearly CIV and compromise the fairness of the exam.



Guidance

Exam Centers meet strict criteria to ensure an appropriate exam environment

There is a reporting process that acknowledges problems after the fact and provides an opportunity for redress.



Threshold

Exam settings are pre-screened for compliance including verification that no construction or other disruptions are scheduled during exam times.



Documents

Contract with RECA's exam provider identifying strict criteria to ensure an appropriate exam environment.

Documented process for redress.

RECA will ensure reasonable accommodations are provided for learners with special needs.

Disability acts across Canada provide for equal access to opportunities. In the case of learners with special needs, this may require changes to the examination procedure.



Guidance

Provincial legislation guides decisions and actions.



Threshold

Evidence of a reasonable process and its application.

Identification of the documents that a learner will be asked to provide to assess eligibility for accommodations



Documents

RECA will publish a document to inform learners with special needs of the accommodations available to them. This includes the nature of the documentation required to substantiate the need for accommodation.

Policy documents regarding accessibility for examinations

Clear instructions are provided prior to the exams that deal with matters such as timing, no use of personal electronics, restroom visits, etc.

Informing learners of timing helps them plan their time usage. Addressing matters such as restroom visits up front ensures that learners can write the exam without unnecessary physical discomfort.

Learners should also be instructed to leave any personal electronics in a location that is inaccessible during the exam.

Consistent policy ensures fairness and examination integrity.



Guidance



Threshold



Documents

Instructions will prepare learners to take the exam including stating if there is a time warning.

Guidance for restroom visits minimizes unnecessary disruptions, and if these visits are accompanied, invigilators can prevent some forms of cheating.

Similarly, the use of nonsanctioned electronic devices is explicitly prohibited. Penalties for cheating and exam question harvesting are clearly stated in advance. Invigilator's manual contains adequate instruction to ensure consistent process.

An invigilator's document stating the issues to address prior to the exam.







Learners are able to ask questions about procedure prior to the start of the exam.

This is another strategy for ensuring that learners can focus on the exam itself without unnecessary distraction.

Questions should be limited to procedure. No questions about content are permitted.

Invigilator's document contains adequate instruction to ensure consistent process.

An invigilator's document stating answers to FAQs.

Any irregularities occurring before, during, and immediately after the exam session are documented and reported. This includes environmental disturbances, cheating, and any other irregularities.

Environmental issues are dealt with as a matter of fairness and minimization of Construct Irrelevant Variation (CIV).

Allows for an effective means to determine whether a learner has cheated, been dishonest, or participated in exam harvesting.



Guidance

Enough information must be gathered to deal with the circumstance appropriately.

Potential cheating instances must be especially well documented, investigated, and reported.

This can also be constructively used to identify deficiencies and improvements with examination processes.



Threshold

Evidence of a reasonable process and its application including a written policy on cheating provided to learners.

Any irregularities should also be reported immediately to RECA.



Documents

RECA's Education Code of Conduct for Learners.

Documented procedures for reporting any irregularities or problems to RECA.

A well-defined process for follow-up.

Scoring, Reporting, and Interpretation

Scoring, Reporting & Interpretation standards ensure that every time the exam is used, it consistently measures the right set of competencies in the right way. It also ensures that learners who pose a potential risk to the public through their lack of knowledge will fail the exam. To ensure the learner can take suitable follow-up action, the notification of their performance should also provide them with appropriate guidance on "next steps".

4.1

There is a rigorous well-documented process in place for setting a pass-fail score for the exam and for each competency area.

Cut-off scores (i.e., the score that separates passing from failing exams) must be consistent and balance public protection with fairness to learners. The method should be based on the principle that the pass-fail corresponds to the level of competence of a minimally qualified learner. The current cut-off score is 70%. The cut-off score will be subject to change based on psychometric analyses performed by psychometricians.



Guidance

The cut-off must be based on a score derived from the items correctly answered. There are a number of well-tested methods for setting cut-off scores, most popularly the modified Angoff method.



Threshold

Evidence of a defensible and consistent process and the rationale for choosing the cut-off score.



Documents

Continuation of 70 % passing mark until a new cut-off score is developed.

Documentation of the method planned to use to set the pass-fail score for the exam.

Publication of Psychometric report summaries.

For multiple choice and other objective style questions, there is a procedure in place to identify and discard questions that are not performing properly.

Reliability in examinations requires that questions should consistently measure what they purport to measure.



Guidance

Questions that appear fine to an item author may perform quite differently when read by others.

Incorrect alternatives that are chosen more often than the correct answer, and distractors that are seldom selected, indicate that parts of the question are not functioning well. An item discrimination index should also be used to identify faulty items.



Threshold

Item statistics with proportion correct and proportion choosing each distractor.



Documents

Item statistics including proportion of learners choosing each answer, and where possible the discrimination index for each item.

For exams requiring trained markers to evaluate responses, there are procedures in place to ensure that markers are qualified and trained to provide comparable scores for comparable responses.

Marking essays and short answers has a subjective element. Qualified and trained markers can reduce the subjectivity and improve exam reliability.



Guidance



Threshold



Documents

Marking Rubrics are developed.

Formal training, common marking of writing samples, multiple markers, and performance to a standard are all methods used to reduce subjectivity.

Especially for constructed response questions, the marker must also have demonstrable subjectmatter expertise to assess the content.

Evidence of an effective process and its application.

Training materials that describe the process used to standardize marking of test responses.

Evidence of the extent of marker agreement using sample exam responses.

For exams requiring trained markers, a sample of exams is independently marked by a second marker to ensure consistency. There is a procedure in place to detect marker 'drift' and to resolve disagreements.

Fairness and reliability of measurement both require that different markers should score the same test response identically.



Guidance

There are a number of strategies that can be used to ensure consistency of marking for test responses, including multiple independent markers or review of exams by a supervisory marker that helped set the standard.

Pre-set tolerance limits for marker disagreement and procedures for resolving discrepancies are desirable.



Threshold

Evidence of an effective process and its application.



Documents

Document of the process used to ensure standardization in marking across markers and over time including statistical evidence regarding standardization and dispute resolution.

All borderline exams are automatically re-scored to ensure their accuracy. For machine scoring, this means ensuring no possible extraneous causes have caused the learner to fail or to pass.

Fairness requires the exam Provider ensures any borderline failure or borderline pass on the exam is not due to errors of judgment or technical glitches.



Guidance

For constructive response questions the typical procedure is independent reading and scoring of answers by a supervisory marker

The impact of this additional scoring should be tracked to ensure there is no bias in either the original marking or the remarking.

For machine- scored paper answer sheets an individual review is conducted of questions identified by the learner as being ambiguous.



Threshold

All reasonable potential sources of scoring errors should be eliminated.



Documents

Publication of policy outlining the procedures used on borderline exams and any changes to scores.



Guidance



Threshold



Documents

Descriptive statistics are assessed for each test item to ensure that the question performs in a way that enhances the accuracy of competency assessment.

The underlying principles are that exam statistics must demonstrate that the test item performs consistently over time (reliability) and measures what it purports to measure (validity).

Psychometric analysis is carried out to ensure exam questions meet reliability and validity requirements.

At minimum, this should include the proportion of learners choosing each option for the question, as well as the proportion of learners that correctly answered the question. RECA will publish all psychometric analysis.

Reliability of scores is reported based on best available statistics and notwithstanding the difficulties of small samples. For an objective format test this is likely to be reliability based on internal consistency. For a test requiring markers, this may be inter- grader agreement.

Exam questions should measure performance consistently and accurately over time, as well as demonstrably measuring what they purport to measure.



Guidance



Threshold



Documents

Several reliability measures can be generated with some especially suited to a small sample size.

Monitoring and ensuring reliability is critical to the legal defensibility of exam decisions. Accuracy of scores around the cut-off scores should be a particular focus.

The standard error of measurement around all cut-off scores should be documented, along with the impact of using that cut-off.

Any reasonable measure of reliability.

Document outlining the methods, results, and any action deemed suitable based on findings.

A well-documented process is in place (e.g., anchor items) to ensure that scores are comparable from one exam administration to the next.

Fairness requires that the exam is holding to a constant standard of difficulty over time, so that when a learner writes the exam has no bearing on the assessment of their underlying competence.



Guidance

The most common procedure is to re-use several items from prior exams and monitor their performance.

Comparable performance on these items suggests consistency in standard of preparation.

Differences in performance should result in changes to cut-off scores.

Overall item difficulty should also be monitored for consistency. A predefined range of item difficulties can help the process.



Threshold

Evidence of an effective process and its application.



Documents

Documentation of procedure used to ensure consistency and its effectiveness including the impact of anchor items on cut-off scores.

There is evidence of content validity based on the item development and review process.

It is essential that the exam measure what it is supposed to measure (validity) and not other things.



Guidance

Documenting that breadth and depth of competency coverage corresponds to their relative importance is critical to this process.



Threshold

Evidence demonstrating that exam items correspond to the Examination Blueprint.



Documents

The process used to develop and score the exam demonstrating that the breadth and depth of competencies is adequately assessed to ensure content validity.

Document outlining the process and outcomes.

There is a periodic review to ensure there are no unfair impediments to exam success.

It is essential that the exam measure what it is supposed to measure (validity) and not other things. The focus of this standard is ensuring that irrelevant factors are not affecting the assessment of competence.



Guidance

A follow-up survey sent anonymously to learners asking about things like reading time is helpful.



Threshold

A thorough review is conducted at regular intervals. The time between reviews should not exceed three years.



Documents

RECA will publish the reviews periodically.

- via survey creation and reporting

Every learner receives timely notification of whether they passed or failed the exam. This notification to learners tells them how to interpret their scores. In the case of failing learners, it provides them with possible remedial actions.

Learners must be informed of their status. They should also understand how they performed and what this means.



Guidance



Threshold



Documents

The outcome (pass/fail) must be unequivocal. Next steps should also be clear.

Notification sent to failing learners must balance over-interpretation of scores against the need to suggest remedial action in the event of a failure. This is a bit of a balancing act.

Learner notification should be provided within one week.

Sample passing and failing notification.

Policy for planned timing of notification.

There is a process in place for failing learners to appeal their score. This includes a second reviewer examining the learner's performance on constructed response questions or on multiple-choice questions that the learner answered incorrectly and flagged.

Fairness to learners.



Guidance

Reviews only make sense for subjectively scored exam items or the learners has flagged questions that have been answered incorrectly.

A fee for a review will apply to avoid frivolous reviews.



Threshold

Evidence of a fair and impartial review process in theory and practice.



Documents

Publication of the appeal process.

RECA develops and maintains documentation that identifies their adherence to these guidelines in terms of both processes and outcomes.

Transparency of standards and practices prevents Course Providers, whose offerings may not be competitive, from deflecting blame onto the examination process.



Guidance

Organizing documentation according to these standards will make information easy to find and limit documentation to the necessary.



Threshold

Creation of a virtual test manual consisting of the documentation required to address these standards. This may be electronic and built using hyperlinks to avoid duplication. The comprehensive documentation should be available for review.



Documents

Publication of RECA's accreditation examination processes, ongoing reviews, and psychometric analysis.