

Public guideline on the professional practice examination

Public guideline on the professional practice examination - October 2013

Notice

Disclaimer

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The national guidelines and Engineers Canada papers do not establish a legal standard of care or conduct, and they do not include or constitute legal or professional advice

In Canada, engineering is regulated under provincial and territorial law by the engineering regulators. The recommendations contained in the national guidelines and Engineers Canada papers may be adopted by the engineering regulators in whole, in part, or not at all. The ultimate authority regarding the propriety of any specific practice or course of conduct lies with the engineering regulator in the province or territory where the engineer works, or intends to work.

About this Engineers Canada paper

This national Engineers Canada paper was prepared by the Canadian Engineering Qualifications Board (CEQB) and provides guidance to regulators in consultation with them. Readers are encouraged to consult their regulators' related engineering acts, regulations, and bylaws in conjunction with this Engineers Canada paper.

About Engineers Canada

Engineers Canada is the national organization of the provincial and territorial associations that regulate the practice of engineering in Canada and license the country's 295,000 members of the engineering profession.

About the Canadian Engineering Qualifications Board

CEQB is a committee of the Engineers Canada Board and is a volunteer-based organization that provides national leadership and recommendations to regulators on the practice of engineering in Canada. CEQB develops guidelines and Engineers Canada papers for regulators and the public that enable the assessment of engineering qualifications, facilitate the mobility of engineers, and foster excellence in engineering practice and regulation.

About Equity, Diversity, and Inclusion

By its nature, engineering is a collaborative profession. Engineers collaborate with individuals from diverse backgrounds to fulfil their duties, tasks, and professional responsibilities. Although we collectively hold the responsibility of culture change, engineers are not expected to tackle these issues independently. Engineers can, and are encouraged to, seek out the expertise of Equity, Diversity, and Inclusion (EDI) professionals, as well as individuals who have expertise in culture change and justice.

1 Purpose and objectives

The purpose of this guideline is to articulate the mechanisms that regulators may use in formulating their professional practice examination (PPE).

The specific objectives of this guideline are:

- »To guide the regulators in the development of a comprehensive professional practice examination.
- »To provide to the applicants for licensure an understanding of the development and administration of a professional practice examination.

2 Introduction

One requirement for licensure with every provincial/territorial jurisdiction is that an applicant shall pass a professional practice examination to confirm that he/she has sufficient knowledge of the ethical considerations and obligations that accompany the privileges of professional status, and the legal concepts relevant to engineering practice of that jurisdiction.

This guideline comprises a model based on a synopsis of the national best practices utilized by each regulator in formulating its professional practice examination. The use of this model will result in the "standardization" of the PPE process across the country and will enhance the process for the inter-association mobility of registered or licensed engineers.

3 Administration of the examination

3.1 General

To be granted a licence, all applicants must demonstrate to the regulator that they are qualified to practice engineering (Guideline on Admission to the Practice of Engineering in Canada). They must:

- »be academically qualified;
- »have obtained sufficient acceptable engineering work experience in their area of practice;
- »have an understanding of local practices and conditions;
- »be competent in the language of their jurisdiction of practice;
- »be of good character; and,
- »demonstrate an understanding of professional practice and ethics issues.

Passing the professional practice examination should demonstrate the applicant's minimal acceptable level of knowledge of professional practice, its legal and ethical obligations and may test the applicant's understanding of local practices. Whether the regulator offers the PPE directly or uses the service provided by another regulator, each one is responsible for all aspects of the professional practice examination being offered in its jurisdiction. The following sections first detail the eligibility criteria to be able to write the professional practice examination and then the content, delivery and development of the examination itself.

3.2 Eligibility criteria

Typically the applicant should be registered as a Member-In-Training, Junior Engineer or Engineer-In-Training of a regulator or should have a viable application for licensure under consideration by a regulator.

The regulators should clearly indicate what level of work experience is required to be eligible to write the Professional Practice Examination.

3.3 Examination format

The examination should consist of a sufficient quality and number of questions that will demonstrate a working knowledge in each of the subject areas of the syllabus. Each provincial/territorial jurisdiction should offer an examination that ensures consistency, breadth and depth of topics. Typical examination formats include multiple choice, true or false, and/or essay questions. The applicant should be given sufficient time to complete the examination. Typically two to three hours allotted has been considered as sufficient time for completion. The examination format is closed book; certain reference materials may be provided by the regulator where appropriate.

3.4 Examination content

The examination content should reflect the intent, scope, purpose, assigned topic weighting, and associated Body of Knowledge. The regulators are responsible for reviewing these aspects on a regular basis to ensure completeness and continued relevance. The examination syllabus may be comprised of, but not limited to, the following: ethics and professionalism, professional practice, regulatory authority requirements, law and legal concepts and the Acts, Regulations and Bylaws, and any other subject deemed appropriate and the weighting of coverage of topics on the examination. Each examination provider should develop an internal process to review the examination questions on an ongoing basis. The content of the questions should be reviewed for relevance and timeliness on an ongoing basis as determined by the examination provider and in conjunction with any changes to the examination syllabus.

3.5 Testing standards

Each examination provider should adhere to applicable published standards of fair testing practice (e.g. Standards for Educational and Psychological Testing and Code of Fair Testing Practices in Education) to ensure examination fairness. This guideline was written based on the principles of fair testing found in Appendix A. Each examination provider should demonstrate appropriate consistency and fairness of questions from examinations in order to ensure that all applicants participating in the same period, as well as applicants participating in different periods, are being tested with a high degree of equivalency.

Inter-association mobility is best facilitated when the regulators have a common link established through a consistent testing methodology based on a substantially equivalent body of knowledge.

3.6 Language

The examinations should be made available in either official language of Canada. Where available, study materials should be offered in both official languages of Canada.

3.7 Obligations to the applicant

3.7.1 Providers' obligations

The unsuccessful applicant should be entitled to a written report detailing performance outcome on the examination by body of knowledge category. This report should be provided to the applicant in a timely manner.

3.7.2 Regulators' obligations

The applicant should be provided with information on the purpose of the examination, the body of knowledge to be covered by the examination, how the examination is developed (where appropriate), quality control measures (where appropriate), the format of the examination, the reference materials and grading scheme, the format of the results and when to expect them, directions for the examination session (e.g. what can/cannot be brought into the examination, information on rereads), and study strategies (e.g. typical questions with answers, FAQ's, myths) where available and appropriate. The applicant should have the opportunity to rewrite the failed examination. The regulator should set a clear rewrite policy stating how many times an applicant is allowed to rewrite a failed section or examination. The applicant should be given the opportunity to request a reread of the examination.

3.8 Security policy

Each examination provider should develop and implement a security policy that allows regulators to validate the identity of applicants prior to writing the examination. The identity of applicants, once verified, should remain confidential throughout the process to eliminate any bias. Each examination provider should develop and implement a security and proctoring policy that ensures the confidentiality of the examination booklets and questions.

3.9 Examination delivery

3.9.1 Location

The regulators should offer applicants a choice of location(s) and time(s).

3.9.2 Proctoring

The regulators should ensure that proctors administer all examinations in accordance with their policies and procedures.

4 Subject matter

The major subject areas of the Professional Practice Examination include:

1. Professionalism

- 1.1 Definition of the professional
- 1.2 The roles and responsibilities of a professional in society
- 1.3 Professionalism
- 1.4a Engineering in Canada (as applicable)
- 1.4b Geoscience in Canada (as applicable)
- 1.5 Values of the engineering and geoscience professions (as applicable)

2. Ethics

- 2.1 Overview of ethics in society, cultures and customs
- 2.2 Classical ethical theories
- 2.3 Modern ethical theories

- 2.4 General ethical principles
- 2.5 Codes of ethics
- 2.6 Fundamental ethical requirements
- 2.7 Ethical decision making
- 2.8 Common ethical issues and dilemmas

3. Professional practice

- 3.1 Risk management*
- 3.2 Standards*
- 3.3 Duty to inform
- 3.4 Due diligence
- 3.5 Legality
- 3.6 The corporate world
- 3.7 Globalization*
- 3.8 Sustainable development
- 3.9 Quality management*
- 3.10 Relations with other professionals and non-professionals
- 3.11 Use of software, computers and internet-based tools*
- 3.12 Document authentication and control
- 3.13 Insurance

4. Communication

- 4.1 Legal, ethical and practical aspects of communication
- 4.2 The professional relationship
- 4.3 Communication skills

5. Law for professional practice (province and profession-specific, as applicable)

- 5.1 The Canadian legal system
- 5.2 Contract and torts in Common Law provinces and territories
- 5.3 Civil Law in Québec
- 5.4 Law related to professional practice
- 5.5 Business, employment and labour law
- 5.6 International law

6. Professional law (province and profession-specific section, as applicable)

- 6.1 Legal framework
- 6.2 Admission to the profession
- 6.3 Code of Ethics
- 6.4 Professional regulations
- 6.5 Illegal practices / Enforcement against unlicensed practice and misuse of title

7. Regulation and discipline processes (province and profession-specific section, as applicable)

- 7.1 Discipline of members
- 7.2 Professional inspection / practice reviews of individuals
- 7.3 Practice reviews of firms
- 7.4 Medical control / fitness to practice
- 7.5 Control of criminal and disciplinary decisions
- 7.6 Continuing professional development

* indicates a topic where differentiation may be required between engineers and geoscientists

The complete Body of Knowledge for the Professional Practice Examination can be found in Appendix B.

4.1 References

A complete list of references should be provided by the regulator. The following are recommended:

1. Canadian Professional Engineering and Geoscience: Practice and Ethics - Fourth Edition. Gordon C. Andrews, copyright 2009. ISBN 0176441344
2. Practical Law of Architecture, Engineering and Geoscience. Brian Samuels and Doug Sanders, copyright 2007. ISBN 0131976230
3. Industry Canada Booklets:
 - »A Guide to Patents
 - »A Guide to Trade-Marks
 - »A Guide to Industrial Design
 - »A Guide to Copyrights
4. The Engineering or Geoscience Act, Bylaws, Regulations for the applicable province or territory.
5. Law for Professional Engineers, Canadian and Global Insights. D. L. Marston, 2008. ISBN 978-0070985216.
6. Notes préparatoires à l'examen professionnel, OIQ, 2009.
7. Guide de pratique professionnelle. OIQ, available online since 2011.

Other resources are available on the websites of the regulators.

5 Implementation

The successful completion of the Professional Practice Examination is a requirement for registration as an engineer in Canada.

Regulators will normally waive the Professional Practice Examination for members of another regulator who have already completed the Professional Practice Examination and who are seeking transfer of membership or temporary licensure. They may also modify the examination requirements for foreign engineers seeking temporary licensure.

Regulators should, however, ensure that all applicants for registration are familiar with the applicable provincial or territorial legislation, regulations and accepted practices before granting them permission to practise engineering.

Appendix A - Examples of fair testing principles

This guideline was written based on the following principles:

Principle #1 Coverage of topics

Every examination must cover the body of knowledge in a defined manner, specifying how much weight is placed on every topic and every sub-topic so that candidates are examined consistently across the body of knowledge, regardless of when or where they write the examination.

Principle #2 Time allotment

The examination should not be "speeded". Candidates should be given enough time so that they have every opportunity to get the best score they possibly can based on their knowledge at the time of writing.

Principle #3 Assessment of knowledge

The examination should be designed so that the score that a person achieves is directly proportional to his/her knowledge of the material in the syllabus and so that other variables such as verbal or literary fluency do not place candidates with a particular cultural background at an advantage or at a disadvantage.

Principle #4 Plain language

The examination should be as free of cultural bias as possible and should use "plain English or French".

Principle #5 Objective scoring

The score that a candidate gets on an examination should not depend on the subjectivity of the person doing the scoring. Where subjective scoring cannot be avoided, it is incumbent on the examining body to monitor and correct for the effect of subjectivity on candidate's scores.

Principle #6 Equating for difficulty

A procedure for equating examinations for difficulty should be adopted within regulators for use on examinations given by them on different occasions. A procedure for equating should also be adopted between regulators to ensure that the difficulty of examinations is equivalent.

Principle #7 Consistent pass/fail score

In the interests of fairness to candidates, examination providers should agree on a pass-fail standard which is applied after scores have been equated.

Principle #8 Continuous improvement

Examination providers should put in place a process for evaluating the results of every examination for the purpose of continuous improvement. Examination providers should be invited to participate in each others' review process on an "ad hoc" basis so that the benefits of these sessions could be shared with all examination providers.

These principles are well-recognized in the "Standards for Educational and Psychological Testing" and the "Code of Fair Testing Practices in Education" published by the American Psychological Association (APA). Deviation from these principles should be based on a clearly enunciated rationale which mitigates against the negative effects of the deviation.

Further information on these standards:

American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education, Standards for Educational and Psychological Testing, American Educational Research Association, Washington, DC, 2002. ISBN: 0-935302-25-5 (<http://www.apa.org/science/programs/testing/standards.aspx>)

American Psychological Association, Code of Fair Testing Practices in Education: (<http://www.apa.org/science/programs/testing/fair-code.aspx>)

Appendix B - Body of knowledge

A partial examination of each major topic area is included in the Body of Knowledge, below.

Body of knowledge

1 Professionalism

1.1 Definition of the professional

- »Historical review - Babylon to now
- »Different points of view, different meanings
- »Unregulated, state regulated, and self regulated practice
- »Protection of the Public

1.2 Professional status: role and responsibilities of a professional in society

- »What sets a professional apart - personal responsibility of own practice

- »Stakeholders: the professional member, employers, clients, users, authorities, the general public, humankind, nature
- »Privileges and responsibilities: legal, societal, moral
- »Comparison of Professions (similarities/differences)
- »The employee as a professional

1.3 Professionalism: mastery of a complex skill

- »Knowledge
- »Know-how
- »Behaviour

1.4a Engineering in Canada

- »Brief history
- »Regulators
- »Engineers Canada
- »Technical societies
- »The Iron Ring

1.4b Geoscience in Canada

- »Brief history
- »Regulators
- »Geoscientists Canada
- »Technical societies
- »The Earth Ring

1.5 Values of the engineering and geoscience professions

- »Competence
- »Ethical conduct
- »Responsibility/accountability
- »Social commitment/public interest

2 Ethics

2.1 Overview

- »Ethics in society
- »Cultures
- »Customs

2.2 Classical ethical theories

- »Deontology
- »Teleology
- »Utilitarianism
- »Kantianism

2.3 Modern ethical theories

- »Character
- »Personality ethics
- »Paradigms
- »Moral autonomy

2.4 General ethical principles

- »Truth, honesty

2.5 Codes of ethics

- »Origins and history
- »Status of various codes

2.6 Fundamental ethical requirements (see National guideline on the Code of Ethics)

- »Protect safety, health and welfare of the public
- »Practise only in areas of competence
- »Avoid conflicts of interest
- »Maintain competence of self and of subordinates
- »Act in good faith
- »Present the possible consequences of ignoring engineering judgements
- »Report illegal or unethical engineering decisions or practices
- »Be aware of societal and environmental consequences of engineering
- »Promote the equitable treatment of all individuals

2.7 Ethical decision making

- »Frameworks
- »Resources for solving ethical issues

2.8 Common ethical issues and dilemmas

- »Duty to report / whistle blowing
- »Importance of separating technical authority from hierarchical authority
- »Minimal compliance (vs safety or sustainability or ...)
- »Conflict of interest
- »Cooperation vs opposition
- »Incivility
- »Plagiarism
- »Equity
- »Limit practice to areas of competence
- »Timeliness (equity, faithful agents, courtesy)
- »Personal ethics and morality
- »Professional responsibility vs employment issues

3 Professional practice

3.1 Risk management*

- »General principles (basic requirement of public protection)
- »Legal framework (general)
- »Overview of current methods of analysis
- »Case studies
- »Hazard reduction and failure analysis

3.2 Standards*

- »Professional, legal, social
- »Generally accepted professional practices
- »Finality and interpretation
- »Limitation of standards

- »The role of standards (international, national, government)

3.3 Duty to inform

- »To clients or employers, regulatory agencies, the public
- »Communicate openly, honestly and truthfully (the WHOLE story)

3.4 Due diligence

- »Concept and requirements

3.5 Legality

- »Practise with the boundaries and intents of the law
- »Meet the spirit of the law

3.6 The corporate world

- »Corporate ethics and pressures on the professional
- »Corporate responsibilities and loyalty vs professional responsibilities
- »Confidentiality vs professional responsibilities, transparency or accountability
- »Confidentiality or ownership of data and knowledge (fiduciary)

3.7 Globalization*

- »Responsibilities of international work (when laws differ, what governs?)
- »Responsibilities of using products and knowledge developed internationally

3.8 Sustainable development (see National guideline on environment and sustainability)

- »Understand environmental and sustainability issues in field of expertise
- »Use environmental or sustainability specialists when necessary
- »Apply professional and responsible judgment to environmental and sustainability considerations
- »Ensure that environmental planning and management are implemented
- »Include environmental costs when evaluating the economic viability of projects
- »Recognize the value of environmental efficiency and sustainability
- »Respond to environmental concerns in a timely fashion
- »Meet or exceed regulatory environmental and sustainability requirements
- »Work with others to improve environmental understanding and sustainability practices

3.9 Quality management*

- »General principles (basic requirement of public protection)
- »Legal framework (general)
- »Overview of quality management standards
- »Overview of current methods of analysis (ISO, 6Sigma, CSA, LEAN, TQM)

3.10 Relations with other professionals and non-professionals

- »Roles of technicians, technologists, scientists in multi-disciplinary teams
- »Respect and consultation with other professions
- »Reviewing the work of another professional
- »Need to consult with experts outside of own field of practice

3.11 Use of software, computers and internet-based tools*

- »Internet ethics (harassment, courtesy, "netiquette")
- »Computer security (hacking)
- »Software piracy and plagiarism

- »The role of computers in professional practice
- »Validation of software
- »Electronic authentication of documents

3.12 Document authentication and control

- »Authentication of documents
- »Use of stamp or seal, verification stamps
- »Review of documents
- »Modified documents
- »As-built drawings
- »Record keeping and turning over records when required
- »Preservation of records in a usable format (8" floppies, faded paper, etc.)

3.13 Insurance

- »General insurance, professional, errors & omissions, liability

4 Communication

4.1 Overview

- »The importance of good communication in professional practice
- »Ethical aspects
- »Legal aspects (including issues concerning technological documents)
- »Proper use of the professional title

4.2 The professional relationship

- »Objective
- »Subjective
- »Legal / economic
- »Personal / educative

4.3 Skills

- »Oral communication
- »Written communication
- »Technical writing
- »Internet communication
- »Languages

5 Law for professional practice (province and profession-specific, as applicable)

5.1 The Canadian legal system

- »Constitutional monarchy
- »Common Law vs Civil code
- »Types of Law: private vs public, criminal law, civil law, administrative law
- »Constitutional framework
- »Charter of Rights and Freedoms
- »The role of precedent
- »Case law

5.2 Contracts and torts in Common Law provinces and territories

- »Essential elements of contracts

- »Agreements to agree, letters of intent, memorandum of understanding
- »Amendment of contracts
- »Waiver and estoppel
- »Quantum meruit
- »Requirements of writing for certain contracts to be enforceable (statute of frauds)
- »Breach of contract
- »Remedies for breach of contract
- »Termination of contract
- »Repudiation and anticipatory breach
- »Principles of interpretation of contracts
- »Additional evidence
- »Agency and authority
- »Considerations in contracts: transfer of risk and obligation, procurement methods, tendering, project delivery, international and interprovincial trade agreements
- »Standard form contracts
- »Professional service agreements
- »Licensing agreements
- »Standard clauses
- »Definition of torts
- »Categories of torts
- »Negligence
- »Trespass
- »Nuisance (Rylands v. Fletcher)
- »Duty to warn (of impending danger)
- »Products liability
- »Concurrent liability in contract and tort
- »Limitation periods
- »Joint and several liability
- »Vicarious liability
- »Codes and standards

5.3 Civil Law in Quebec

- »Contracts (conditions of formation of contracts, interpretation of contracts, effects of contracts)
- »Civil liability (conditions of liability, contractual liability, extra-contractual liability, modalities of obligations: solitary, joint, divisible and indivisible)
- »Performance of obligations (right to enforce performance, default, specific performance, resolution or realization of contracts, extinction of obligations)
- »Contract of enterprise or for services (nature and scope of the contract, rights and obligations of the parties)

5.4 Law related to engineering practice

- »Claims and disputes: negotiation, mediation, arbitration, litigation
- »The engineer as expert witness
- »Property law
- »Intellectual property: patents, trademarks, industrial designs, copyrights, integrated circuit topography, trade secrets
- »Health & safety law
- »Environmental law: Acts, assessments, air & water quality, conservation & sustainable development

- »Aboriginal law
- »Consumer Protection Act
- »Safety Acts: building, civil protection, explosives, fire safety, piping and pressure vessels, dams
- »Securities law
- »Privacy law
- »Internet law

5.5 Business, employment and labour law

- »Business organizations: forms, advantages and disadvantages
- »Labour Law
- »Employment Law
- »Restrictive covenants
- »Independent contractor vs. employee
- »Human rights

5.6 International law

- »Trade agreements
- »Human rights
- »Environmental
- »Laws of jurisdiction
- »Applicability of home CA code of ethics, Eng & Geo Act, Regs and Bylaws
- »International treaties and organizations (tax, goods)
- »Registration requirements (licensure), codes, laws, regulations
- »Work permits

6 Professional law (province and profession-specific section, as applicable)

6.1 Legal framework

- »Professional code (Québec only)
- »Engineers or Geoscientists Act
- »Other laws and regulations

6.2 Admission to the profession

- »Procedure
- »Interprovincial / international agreements
- »Permit to Practice, Certification of Authorization, Consulting Engineer

6.3 Code of Ethics

- »Tenets of the jurisdiction-specific Code of Ethics
- »Status of the Code of Ethics

6.4 Professional regulations

- »Authentication of documents (seal, signature, etc.)
- »Records
- »Cessation of practice
- »Liability insurance
- »Conciliation and arbitration of fees
- »Continuing professional development

6.5 Illegal practices / enforcement against unlicensed practice and misuse of title

- »Practice related
- »Title related

7 Regulation and discipline processes (province and profession-specific section, as applicable)

7.1 Discipline of members

- »Purpose
- »Procedure
- »Consequences

7.2 Professional inspection / practice review of individuals

- »Purpose
- »Procedure
- »Consequences

7.3 Practice review of firms

- »Purpose
- »Procedure
- »Consequences

7.4 Medical control / fitness to practise

- »Purpose
- »Procedure
- »Consequences

7.5 Control of criminal and disciplinary decisions

- »Purpose
- »Procedure
- »Consequences

7.6 Continuing professional development

- »Purpose (ethical obligation)
- »Procedure
- »Consequences

* indicates a topic where differentiation may be required between the engineer's and geoscientist's examinations

Appendix C - Learning outcomes

The following learning outcomes are a statement of what all applicants for licensure should know and understand in relation to the professional practice examination body of knowledge. The learning outcomes can be used as the basis for educational activities supporting the professional practice examination.

Learning outcomes

1 Professionalism

1.1 Engineers shall know, support and understand that as registered professionals they must hold paramount the health, safety and welfare of the public and protect the environment, while promoting health and safety in the workplace.

1.2 Engineers shall understand that they have a personal role and responsibility to identify and include all stakeholders affected by the process and outcomes of their work.

1.3 Engineers shall be aware of the Iron Ring tradition and its contribution to the Canadian engineering profession.

2 Ethics

2.1 Engineers shall recognize that their first obligation in professional practice under ethical principles is to hold paramount the health, safety and welfare of the public and protect the environment while promoting health and safety in their work.

2.2 Engineers shall know that any violation of their professional obligations, including but not limited to their Code of Ethics, may be legally enforceable as outlined in the legislation under which they are licensed.

2.3 Engineers shall be able to uphold and apply the ethical principle of reciprocity (a.k.a. the “golden rule” of treat others as you would like to be treated) and the values of truth, honesty, and integrity.

2.4 Engineers shall have a basic understanding of modern and classical ethical frameworks.

2.5 Engineers shall be able to recognize and analyze ethical issues and dilemmas using the Code of Ethics and the values of the engineering profession as a basis.

3 Engineering practice

3.1 Engineers shall recognize that they have an individual and personal responsibility for their own work, which includes taking responsibility for any tools used to do their work.

3.2 Engineers shall know that they must only work in areas where they are competent.

3.3 Engineers shall know that they must recognize and report any illegal or unethical engineering decisions or practices.

3.4 Engineers shall have the knowledge and skills needed to evaluate risk based on an understanding of risk as a function of hazard and exposure assessment.

3.5 Engineers shall be able to seek out, understand and apply “best practices” and apply due diligence in conforming to the professional, legal and social standards to ensure protection of the public in engineering work.

3.6 Engineers shall be able to practise within the boundaries of the law in all aspects of engineering practice in the private, public, corporate and global sectors.

3.7 Engineers shall be able to use quality management methods.

3.8 Engineers shall understand environmental and sustainability issues in their areas of professional practice.

3.9 Engineers shall be able to work with respect and in consultation and collaboration with all stakeholders and practitioners in multi-disciplinary teams.

3.10 Engineers shall know how and when to use an engineer’s seal or stamp and shall be able to provide credible authentication and control of all engineering related documents.

3.11 Engineers shall know that they must take responsibility for the work of non-licensed subordinates.

4 Communication

4.1 Engineers shall understand that good engineering outcomes are directly related to how well engineering is understood by and communicated to colleagues, clients, the public and those implementing the engineering solution.

4.2 Engineers shall understand that poor communication and misunderstandings can cause engineering failures.

5 Law for engineering practice

5.1 Engineers shall have a basic understanding of the Canadian legal system in particular as it relates to common and civil law, and the roles of federal and provincial jurisdiction specifically as they relate to the practice of engineering.

5.2 Engineers shall have a basic understanding of contracts and torts as they relate to engineering practice in and between the provinces and territories.

5.3 Engineers shall understand provincial and federal acts related to engineering practice. This includes law as it relates to issues such as claims, disputes, property, environmental and safety acts of legislation.

5.4 Engineers shall understand the legal aspects of business, employment, labour and international law as they affect the practice of engineering.

6 Engineering law

6.1 Engineers shall understand the provincial or territorial Engineers Act of the jurisdiction where they are licensed to practise engineering.

6.2 Engineers shall be aware of the differences between jurisdictions, and the requirement to be licensed in all jurisdictions in which they practise.

6.3 Engineers shall understand the Code of Ethics and the legal obligations set out in the professional laws and regulations.

7 Regulation and discipline processes

7.1 Engineers shall be aware of the regulation and discipline processes within the Engineers Act as they relate to individual conduct and to the review of engineering practice by individuals or corporations, if applicable.

7.2 Engineers shall be able to recognize and know how to report situations where the public interest and/or safety may be at risk related to a situation where fitness to practise may be in question.

