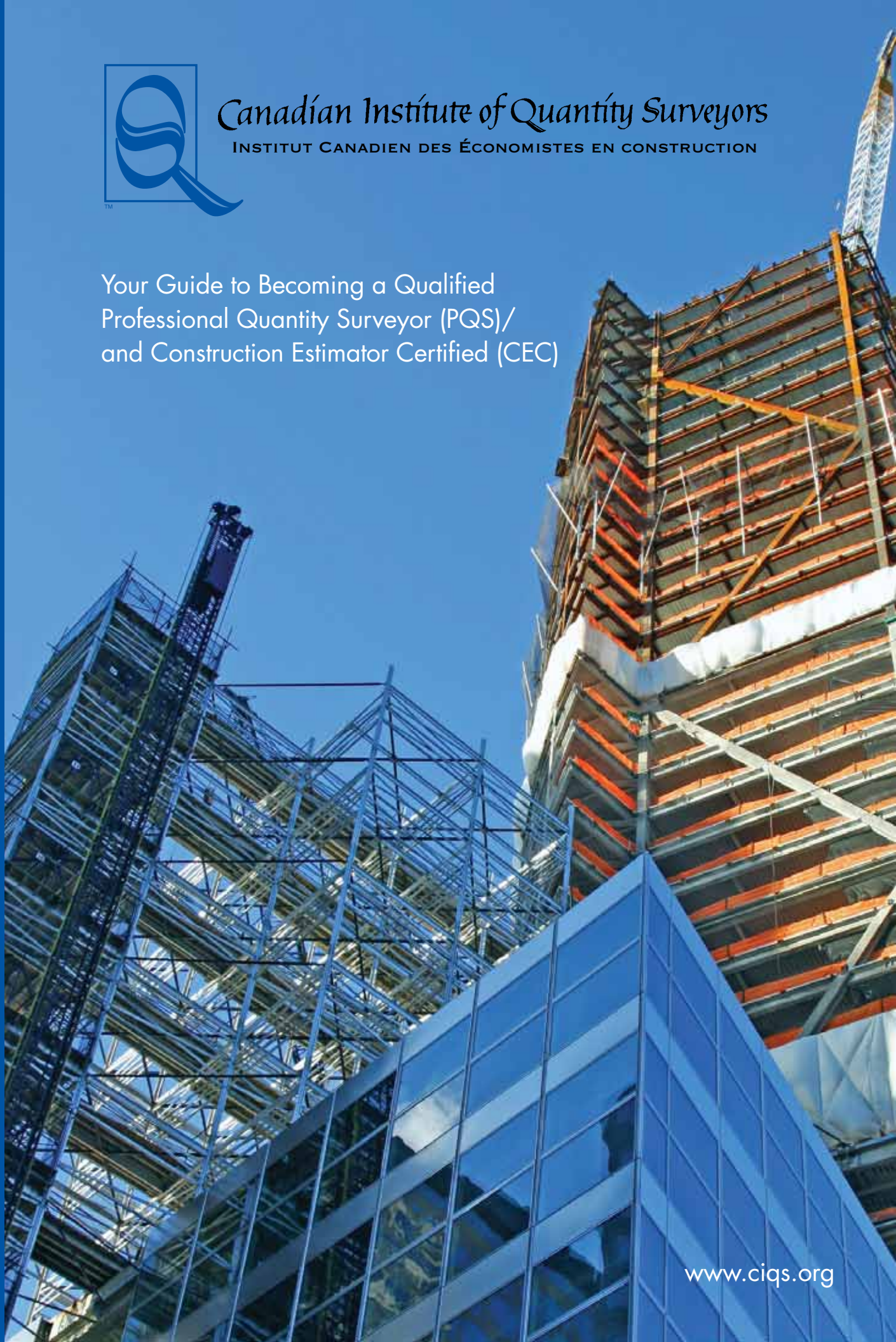
CAREER INFORMATION

Canadian Institute of Quantity Surveyors

Institut Canadien des Économistes en construction

Your Guide to Becoming a Qualified Professional Quantity Surveyor (PQS)/ and Construction Estimator Certified (CEC)



www.ciqs.org

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Preface

The aim of this career information booklet is to provide to the prospective member general information on the Canadian Institute of Quantity Surveyors (CIQS), an understanding of the various pathways to membership into the CIQS, the regulations governing membership as well as the technical skills and expectations of the Professional Quantity Surveyor (PQS)/Économiste en Construction Agréé (ECA) and the Construction Estimator Certified (CEC)/Estimateur en Construction Certifié (ECC).

Full details and information may be obtained from the CIQS or its affiliated association representing your province or territory.

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Affiliated Associations

Association of Quantity Surveyors of Alberta (AQSA)
(representing members in Alberta, Saskatchewan, Manitoba, Northwest Territories & part of Nunavut)
Box 34062 Kingsway Mall
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T5G 3G4
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E-mail: info@aqsa.ca
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Quantity Surveyors of British Columbia (QSBC)
(representing members in British Columbia and the Yukon)
#102, 211 Columbia Street
Vancouver, British Columbia
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Telephone: (604) 622-3671
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E-mail: info@qsbc.ca
Website: www.qsbc.ca

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(representing members in Ontario and part of Nunavut)
90 Nolan Court, Unit 19
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Telephone: (905) 477-3222
Toll Free 1-866-345-1169
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E-mail: info@oiqs.org
Website: www.oiqs.org

Newfoundland and Labrador Association of Quantity Surveyors (NLAQS)
208 Hussey Drive, Box 14
St. John's, Newfoundland
A1A 4Z5
Telephone: (709) 722-0505
Facsimile: (709) 722-1504
E-mail: nlaqs@ciqs.org

Association of Estimators and Quantity Surveyors of Quebec (AEQSQ)
(representing members in Quebec)
8615, rue Lafrenaie
St. Leonard, Quebec
H1P 2B6
Telephone: (514) 324-0968
Facsimile: (514) 324-2807
E-mail: info@entperma.com
Website: www.ecq-qsq.org

Nova Scotia Association of Quantity Surveyors (NSAQS) (representing members in Nova Scotia , New Brunswick and Prince Edward Island)
c/o Construction Association of Nova Scotia
270 Brownlow Avenue, Unit 3
Dartmouth, Nova Scotia
B3B 1V9
E-mail: nsaqs@eastlink.ca
Website: www.nsaqs.org

Quantity Surveying

During the 18th century in the United Kingdom, construction projects were usually measured and valued after they were designed and built. The “measurers” would quantify and value the work after the building was erected and negotiate with the client and architect on behalf of the tradesmen. At the time, there was no main contractor system in place.

In the early 19th century, the main contractor system was implemented, leading to price competition before construction. The measurers soon realized that a new function was required of them and they developed the skill of pre-measuring quantities from drawings and assembling them in “bills of quantities” before construction began.

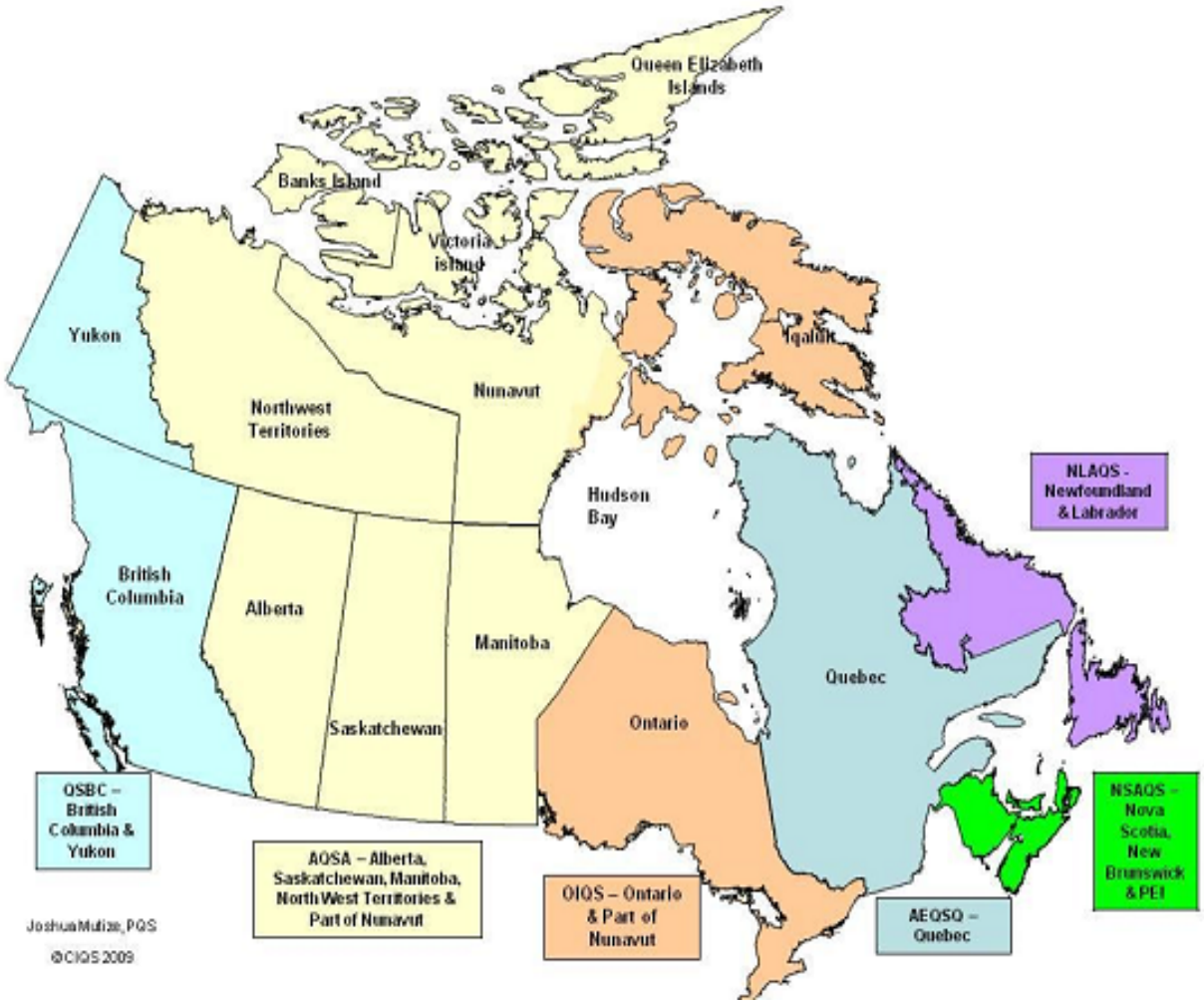
The quantity surveying profession today has evolved from the 18th century measurer to one that deals with the construction and financial management of construction projects. Today’s quantity surveyors have skills and knowledge relating to cost estimating and forecasting, cost management, construction techniques and management, procurement processes and contractual matters.

With the uncertainty of today’s market conditions, the movement towards “green” buildings and the use of non-traditional procurement methods, there is no doubt that the role of the quantity surveyor will continue to evolve.

The Canadian Institute of Quantity Surveyors (CIQS)

Founded in 1959, the Canadian Institute of Quantity Surveyors (CIQS) is the national professional body representing the quantity surveying and construction estimating profession in Canada. Certified members are awarded the designations of Professional Quantity Surveyor (PQS)/ Économiste en Construction Agréé (ECA) and Construction Estimator Certified (CEC)/Estimateur en Construction Certifié (ECC).

The CIQS is the governing body with six regional affiliated associations in Alberta (representing members in the Prairies, Northwest Territories and part of Nunavut), British Columbia (and Yukon), Newfoundland and Labrador, Nova Scotia (and New Brunswick and PEI), Ontario (and part of Nunavut) and Quebec. The CIQS is not limited to the above affiliated associations but is affiliated with members globally.



Canadian Institute of Quantity Surveyors (CIQS) – Affiliated Association Territorial Map

History of the Institute

The concept of the owner's quantity surveyor preparing bills of quantities for construction projects in which all the materials, equipment, subcontracts, services and labour, etc. are quantified and against which the competing construction companies would submit priced tenders has never been fully accepted as the normal practice in North America. In North America, construction companies use construction estimators to bid on construction projects, using their own knowledge and ability to measure the component parts of the work and to price, plan and manage the project. Many of these construction estimators are quantity surveyors who immigrated to Canada from as early as the turn of the 20th century. Since there was no governing body for quantity surveyors at the time, these early quantity surveyors adapted to industry practice as it stood at the time or turned to other work.

In the years following the Second World War, quantity surveyors began to enter Canada in significant numbers. These quantity surveyors saw the need for an organization to further the aims of their profession. In February 1959, a number of these quantity surveyors were invited to a founder members' meeting in Toronto. From this meeting, the Canadian Institute of Quantity Surveyors was founded and its objectives, rules and regulations were developed. The Institute was registered under the Dominion of Canada Companies Act in November 1959.

Although the bill of quantities is still not widely used, the quantity surveying profession has had notable influence on the process within the past 25 years. Government, industry, business and financial sectors have now recognized quantity surveyors and estimators as an informed voice on cost management, cost control and constructability issues.

Today, with widening acceptance of techniques such as value management, statistical analysis, life cycle costing and so on, the opportunities for quantity surveyors and estimators to influence design and construction are broadening.

On January 13, 1988, the Institute obtained the official mark "Professional Quantity Surveyor" and subsequently has also registered the initials PQS and the French equivalents of Économiste en Construction Agréé and the initials ECA. As of May 1988, the Council of the Institute conferred upon its PQS members the right to a professional seal.

Construction Estimator Certified (CEC)/Estimateur en Construction Certifié (ECC) is a category developed by the Institute in 1995 to continue to promote the profession of construction estimating.

Membership in the Institute continues to grow. The founding members' vision of a profession recognized through tertiary education and through general acceptance of its practices is closer to reality than ever before.

Aims & Objectives of the Institute

The principal objectives of the Institute are:

- To provide through its members professional advice to building owners, developers, public authorities, design consultants and contractors on all matters relating to quantity surveying in construction costs, procurement, management and administration of projects;
- To collaborate with other professions and organizations in the interests of the construction industry;
- To promote and advance the professional status and gainful employment of Quantity Surveyors and Construction Estimators;
- To establish and maintain a high standard of professional competence and integrity by limiting membership to persons who have passed the examinations prescribed by, or acceptable to, the Institute and who have satisfied the requirements of training, practical knowledge, experience and integrity prescribed by the Institute;
- To promote fellowship and to provide a medium for the interchange of current construction knowledge and other topics of interest to members; and
- To take appropriate action when possible infringements of the aims and objectives of the Institute arise from other sources anywhere in Canada.

National & International Connections

The Canadian Institute of Quantity Surveyors (CIQS) is a member of the Pacific Association of Quantity Surveyors (PAQS). For more information, visit www.paqs.net.

The CIQS has signed memoranda of understanding to share information and partner on initiatives with common interest. Please refer to www.ciqs.org for an up-to-date listing.

Currently the CIQS has memoranda of understanding with:

- the Appraisal Institute of Canada (www.aicanada.ca), and
- the Royal Institution of Chartered Surveyors Americas (www.ricsamericas.org).

Internationally, reciprocity agreements have been signed with:

- the Australian Institute of Quantity Surveyors (www.aiqs.com.au),
- the Hong Kong Institute of Surveyors (www.hkis.org.hk),
- the Building Surveyors Institute of Japan (www.bsij.or.jp),
- Institute of Surveyors, Malaysia (www.ism.org.my), and
- the New Zealand Institute of Quantity Surveyors (www.nziqs.co.nz)
- the Singapore Institute of Surveyors and Valuers (www.sisv.org.sg)

Through these signed memoranda and reciprocity agreements, qualified members of the CIQS are recognized (with some restrictions) by the other institutions and vice versa.

The CIQS also signed the PAQS Accreditation Scheme in August 2009. All universities and colleges accredited by PAQS are recognized as equivalent academic qualification by all member national associations that sign the PAQS Accreditation Scheme.

Professional Conduct, Ethics & Discipline

In order to protect the integrity of the Institute and its members, strict guidelines, outlined in the Institute's Rules & Regulations and its Code of Ethics, are enforced. Provisions are made nationally and for each affiliated association to consider complaints, given under oath, to suspend or cancel the membership of any member whom it finds guilty of misconduct or incompetence, and to record all such complaints. The CIQS Rules & Regulations set out principles of ethics and professional conduct, including the duties of a member to the public, to his/her employer, to other members of CIQS, and to him or herself.

Quarterly Journal

The Construction Economist ("Conecon") is the official journal of the Canadian Institute of Quantity Surveyors. It is provided free of charge to each member as part of his/her membership. The Conecon provides up-to-date information on the Institute, technical articles as well as information on past and upcoming Institute's events. It is published quarterly and past issues are available on the Institute's website.

Professional Designations

Qualified members are those who successfully complete the appropriate Test of Professional Experience (TPE). These members are awarded the professional designations of Professional Quantity Surveyor (PQS)/Économiste en Construction Agréé (ECA) or Construction Estimator Certified (CEC)/Estimateur en Construction Certifié (ECC). Qualified members may use the designatory letters of "PQS" and the title "Professional Quantity Surveyor" or the French equivalent of "ECA" and the title "Économiste en Construction Agréé" or "CEC" and the title "Construction Estimator Certified" or the French equivalent of "ECC" and the title "Estimateur en Construction Certifié." For details on the TPE, please refer to Page 11.

The Work of a Professional Quantity Surveyor (PQS)/Économiste en Construction Agréé (ECA)

The duties of a Professional Quantity Surveyor (PQS)/Économiste en Construction Agréé (ECA) include, but are not limited to the following:

- Preparation of cost estimates
- Preliminary estimating, cost planning and cost control
- Project/financial monitoring services
- Measurement of quantities
- Claims management, preparation and defence
- Public service and commerce
- Architectural administration
- Value analysis
- Project management
- Construction management
- Procurement and contract management
- The work of a Construction Estimator Certified/Estimateur en Construction Certifié
- Mediation and arbitration
- Life cycle costing
- Other areas of practice such as property management, specification writing, strategic planning, education and more

The Work of a Construction Estimator Certified (CEC)/Estimateur en Construction Certifié (ECC)

The duties of a Construction Estimator Certified (CEC)/Estimateur en Construction Certifié (ECC) include, but are not limited to the following:

- Pricing and preparing formal tender submissions
- Managing, administering and coordinating all types of construction projects
- Conducting pre-bid negotiations with subcontractors and suppliers
- Negotiating contracts with owners
- Verifying subcontractor & supplier payments
- Pricing and negotiating change orders
- Preparing construction progress schedules
- Preparing monthly cost forecasts and progress claims
- Recording final unit prices for data base reference

Membership

Applying for membership in the Institute is quite simple: complete the application form, attach all relevant documentation and application fee, and submit to the appropriate affiliated association in your area or directly to the CIQS. Each application is reviewed and the applicant informed of the number of academic credits granted, the amount of industry experience accepted (if any), the subjects and industry experience outstanding as well as the category of membership granted and the required membership fee. The initial category of membership awarded is dependent on academic qualifications and approved industry experience. To achieve the professional membership levels (PQS/ECA & CEC/ECC) of the Institute, each member must complete the appropriate Test of Professional Experience (TPE) of the CIQS. For details on the TPE please refer to Page 12.

The Institute recognizes many colleges and universities both nationally and internationally as fully accredited. Graduates from these institutions are granted full exemption from the academic requirements of the Institute. Colleges and universities that do not meet the full requirements of the CIQS syllabus are classified as "approved" and graduates from these institutions are required to pass the outstanding subjects required for the PQS/ECA or CEC/ECC designations.

Provisions are made for those who have equivalent professional and trade certifications as well as for those who have been working in the industry for an extended period of time.

See membership classifications on Page 10 and the membership pathways section beginning on Page 20 for an overview of the various membership classifications and the various pathways to becoming a PQS/ECA or CEC/ECC.

Application for Membership - Within Canada

Applications for membership can be made on the standard form obtainable from the affiliated associations and must be accompanied by the prescribed application fee. An online membership application form is also available on the CIQS website. The applicant must also include documentary evidence of education status and full descriptions of courses completed for which exemptions are being sought.

The minimum requirements for membership in the affiliated associations are:

- Association of Quantity Surveyors of Alberta - Grade 12 certificate
- Quantity Surveyors Society of British Columbia - Grade 12 certificate
- Nova Scotia Association of Quantity Surveyors - Grade 11 certificate with minimum 60% in all subjects, with mathematics, English and physics being essential subjects.
- Ontario Institute of Quantity Surveyors - Grade 12 certificate
- Association of Estimators and Quantity Surveyors of Quebec (AEQSQ) - high school leaving certificate
- Newfoundland & Labrador Association of Quantity Surveyors - Grade 12 certificate supplemented with preparation and reading of architectural drawings

Application for Membership - Outside Canada

Persons residing outside Canada may apply directly to the CIQS as a member at large.

Membership Classifications

The CIQS encourages all of its non-qualified members to complete the outstanding section(s) of the Test of Professional Experience (TPE) in order to achieve the professional membership levels of Professional Quantity Surveyor (PQS)/Économiste en Construction Agréé (ECA) and Construction Estimator Certified (CEC)/Estimateur en Construction Certifié (ECC). The various categories of membership are:

Professional Quantity Surveyor (PQS)/Économiste en Construction Agréé (ECA)

Members belonging to this category include:

(a) a member who has successfully completed the TPE for the PQS/ECA designation as defined by the Institute, or

(b) a member who is qualified as a (FRICS) or (MRICS) with the Royal Institution of Chartered Surveyors (RICS) whose primary professional discipline is quantity surveying as noted in Education Policy Guidance Note #B9.

For details of the TPE requirements, please refer to Education Policy Guidance Notes #B2 to #B9. Qualified members in this category may use the designatory letters “PQS” and the title “Professional Quantity Surveyor” or the French equivalent of “ECA” and the title “Économiste en Construction Agréé.”

Construction Estimator Certified (CEC)/Estimateur en Construction Certifié (ECC)

Members belonging to this category include:

(a) a member who has successfully completed the TPE for the CEC/ECC designation as defined by the Institute, or

(b) a member who has the required mechanical or electrical requirements as noted in the Education Policy Guidance Note #B5, or

(c) a member who has been admitted to sit the Direct Final Examination for PQS/ECA as noted in Education Policy Guidance Note #B6, or

(d) a member who has been admitted to sit the Mature Candidate Examination for PQS/ECA as noted in Education Policy Guidance Note #B7, or

(e) a member who has equivalent professional qualification but has not completed the TPE requirements for PQS/ECA as noted in Education Policy Guidance Note #B8, or

(f) a member who is a qualified as AssocRICS with the Royal Institution of Chartered Surveyors (RICS) whose primary professional discipline is quantity surveying as noted in Education Policy Guidance Note #B9.

For details of the TPE requirements, please refer to Education Policy Guidance Notes #B2 to #B9. Qualified members in this category may use the designatory letters “CEC” and the title “Construction Estimator Certified” or the French equivalent of “ECC” and the title “Estimateur en Construction Certifié.”

Associate Member

Members belonging to this category include:

(a) a member who has not completed the TPE for either the Professional Quantity Surveyor (PQS)/Économiste en Construction Agréé (ECA) or Construction Estimator Certified (CEC)/Estimateur en Construction Certifié (ECC), or
(b) a member who has attained the equivalent of PQS/ECA through recognized overseas professional associations but has not completed the relevant TPE requirements, or
(c) a member who has been admitted to sit the Direct Final Examinations for CEC/ECC, or
(d) a member who is studying towards passing the Institute's examinations and who is not a full-time student, or
(e) a person who is gainfully or self employed in or associated with the construction industry whose membership in the Institute would be of value to the Institute.

For details of the TPE requirements, please refer to Education Policy Guidance Notes #B2 to #B9.

Student - Full time

A member who has a minimum of high school graduation and is registered in a full-time approved program of studies.

Others

Other membership categories that may be implemented at the discretion of the CIQS or its affiliated associations are: Fellow, Retired and Honorary Life Members.

Test of Professional Experience

The Professional Quantity Surveyor (PQS)/Économiste en Construction Agréé (ECA) is the highest level of membership in the CIQS followed by the Construction Estimator Certified (CEC)/Estimateur en Construction Certifié (ECC). This means that the quality of work and ethics of these members reflect the high standards of the Institute. To ensure that they have gained the required minimum level of practical experience in addition to the academic requirements, the CIQS has implemented the Test of Professional Experience (TPE). All members must successfully complete the requisite TPE before the CIQS grants the designations of Professional Quantity Surveyor (PQS) or Économiste en Construction Agréé (ECA) and Construction Estimator Certified (CEC)/Estimateur en Construction Certifié (ECC).

The TPE program comprises three (3) parts:

- Part (a) The required academic, professional or trade qualifications requisite for the designation applied for,
- Part (b) A structured training period requisite for the designation applied for and the submission of diaries to record approved industry experience based on Section 6.2 – Areas of Approved Experience on Page 17, and
- Part (c) Practice problem which comprises two sections:
  - (a) a study of the CIQS By-laws, CIQS Rules & Regulations and CIQS Code of Ethics, and
  - (b) a project.

TPE Part (a) - Education, Equivalent Professional Qualification & Trade Certification

The academic requirements for the PQS/ECA and CEC/ECC membership levels in the CIQS are based on the CIQS syllabi. There are currently three (3) divisions – architectural, mechanical and electrical. The Institute is considering the addition of a civil division. Currently, the Architectural Division has 25 subjects, the Mechanical Division has 26 subjects and the Electrical Division has 27 subjects. The subjects are further divided into three (3) levels - Levels 100, 200 and 300 and are coded for easy identification. The first character indicates the division of the subjects: “C” represents a subject that is common to all three (3) divisions; “A” means that the subject is Architectural only; “M” means that the subject is Mechanical only and “E” means that the subject is Electrical only. See Pages 30 to 38 for details on each subject.

National and international college and university programs that meet the full requirements of the CIQS are classified as “fully accredited” and graduates from these programs are granted full exemption from the CIQS subjects. Programs that do not meet the full requirements are classified as “approved” and graduates from these programs are required to pass the outstanding subjects required for the CEC/ECC and the PQS/ECA designations. As noted previously, all members must also complete the required approved industry experience and the TPE requirements before the PQS/ECA or the CEC/ECC designation is awarded.

Click "Accredited Programs/Distance Education” under the “Education” tab at www.ciqs.org for a complete list of accredited programs. Any program that is not on the list of “fully accredited” or “approved” programs will be assessed upon application to the Institute. These include national and overseas educational programs, professional and trade certifications.

The Institute recognizes several equivalent professional qualifications both nationally and internationally. See National & International Connections on Page 6 for some examples. Holders of these qualifications are subject to specially approved industry experience and TPE requirements.

Direct Finalist Examinations are available for direct entry as CEC/ECC and PQS/ECA. Applicants must possess at least 15 years of approved industry experience. Special examination and TPE requirements, outlined in Education Policy Guideline Notes #B7 and #B8, apply.

The Mature Candidate Examination is available for direct entry as PQS/ECA. Applicants must possess at least 20 years of approved industry experience. Special examination and TPE requirements apply.

TPE Part (a) – Architectural Academic Requirements

Level	Subject #	Table 1 - Architectural Division	Subjects Required For:	
			PQS	CEC
100	C101	Construction Science	√	
	A102	Construction Technology I	√	√
	A103	Measurement of Construction Work I	√	√
	A104	Surveying - Principles & Applications	√	√
	C105	Introduction to Computers	√	
	C106	Economics I	√	√
	C107	Introduction to Canadian Business Law	√	
	C108	Basic Business Communications	√	√
200	A201	Construction Technology II	√	√
	A202	Measurement of Construction Work II	√	√
	C203	Construction Cost Accounting	√	
	C204	Construction Contracts	√	√
	C205	Construction Management	√	
	C206	Economics II	√	
	A207	Construction Technology III	√	√
	A208	National Building Code	√	√
300	A301	Measurement of Construction Work III	√	√
	A302	Measurement of Construction Work - Practical Exam	√	√
	A303	Pricing & Bidding Procedures	√	√
	C304	Contract Administration	√	
	C305	Construction Cost Control	√	
	A306	Measurement & Pricing of Civil Works	√	√
	C307	Construction Scheduling	√	
	C308	Cost Planning	√	
	C309	Development Economics	√	
		Total	**25**	**14**

TPE Part (a) – Mechanical Academic Requirements

Level	Subject #	Table 2 - Mechanical Division	Subjects Required For:	
			PQS	CEC
100	C101	Construction Science	√	
	M102	Mechanical Technology I	√	√
	M103	Measurement of Mechanical Work I	√	√
	M104	Plumbing & Fire Protection Design	√	√
	C105	Introduction to Computers	√	
	C106	Economics I	√	√
	C107	Introduction to Canadian Business Law	√	
	C108	Basic Business Communications	√	√
	M109	Heating, Ventilation & Air Conditioning Design	√	√
200	M201	Mechanical Technology II	√	√
	M202	Measurement of Mechanical Work II	√	√
	C203	Construction Cost Accounting	√	
	C204	Construction Contracts	√	√
	C205	Construction Management	√	
	C206	Economics II	√	
	M207	Mechanical Technology III	√	√
	M208	Refrigeration, Automatic Controls, Insulation	√	√
300	M301	Measurement of Mechanical Work III	√	√
	M302	Measurement of Mechanical Work - Practical Exam	√	√
	M303	Pricing and Bidding Procedures	√	√
	C304	Contract Administration	√	
	C305	Construction Cost Control	√	
	M306	Industrial Piping	√	√
	C307	Construction Scheduling	√	
	C308	Cost Planning	√	
	C309	Development Economics	√	
		Total	**26**	**15**

TPE Part (a) – Electrical Academic Requirements

Level	Subject #	Table 3 - Electrical Division	Subjects Required For:	
			PQS	CEC
100	C101	Construction Science	√	
	E102	Electrical Technology I	√	√
	E103	Measurement of Electrical Work I	√	√
	E104	Illumination Design	√	√
	C105	Introduction to Computers	√	
	C106	Economics I	√	√
	C107	Introduction to Canadian Business Law	√	
	C108	Basic Business Communications	√	√
	E109	Electrical Code I	√	√
200	E201	Electrical Technology II	√	√
	E202	Measurement of Electrical Work II	√	√
	C203	Construction Cost Accounting	√	
	C204	Construction Contracts	√	√
	C205	Construction Management	√	
	C206	Economics II	√	
	E207	Electrical Technology III	√	√
	E208	Mechanical Installations	√	√
	E209	Electrical Code II	√	√
300	E301	Measurement of Electrical Work III	√	√
	E302	Measurement of Electrical Work - Practical Exam	√	√
	E303	Pricing and Bidding Procedures	√	√
	C304	Contract Administration	√	
	C305	Construction Cost Control	√	
	E306	Communication Design and Technology	√	√
	C307	Construction Scheduling	√	
	C308	Cost Planning	√	
	C309	Development Economics	√	
		Total	**27**	**16**

TPE Part (a) - Examinations and Obtaining Credits

For applicants who have subjects outstanding or for students who are contemplating making quantity surveying their profession, there are several choices available to gain the required academic credits:

Option 1 - Write the CIQS examination for the subject

- The Institute offers examinations on most of the subjects annually with two (2) sessions in May and November. Please refer to the Institute examination calendar for the availability of specific examinations since some examinations are set on as as-needed basis.
- Applicants are encouraged to map out their route for CEC/ECC or PQS/ECA levels to allow themselves adequate time for study. Examination schedules and registration forms are available at www.ciqs.org under Education/Examinations. Remember, it takes time to accumulate the required textbooks.
- Applicants need to obtain a copy of the syllabus for the subject(s) they are required to complete. The syllabus, available under the "Education" tab at www.ciqs.org, contains course descriptions and required textbooks for each subject. The syllabus also includes a required reading list for each subject. Applicants may purchase the books (publishers listed in the syllabus) or borrow from a library.
- Applicants will receive acknowledgement of their examination registration along with a candidate number from the CIQS.

Option 2 - Enroll in an accredited distance education program

- Click on "Accredited Programs/Distance Education" under the "Education" tab at www.ciqs.org for a complete listing of distance education programs that have been accredited by the Institute.
- Register directly with the educational institution (Algonquin College, George Brown College, SAIT, etc.).
- When you have successfully completed the distance education program, send a copy of your transcript of marks to your affiliated association to obtain a credit in that subject.

Option 3 – Enroll in an accredited full time or continuing education program

- Ascertain from your affiliated association which programs are accredited.
- When you have successfully completed the program, you must send a copy of your transcript of marks to the affiliated association to obtain credits.

As noted on Page 11, those who wish to join the Institute via the Direct Finalist Examination and Mature Candidate Examination pathways are subject to special examination and TPE requirements as noted in Education Policy Guideline Notes #B7 and #B8.

Publications

The Institute publishes a number of texts, explanatory booklets and technical publications, including:

- Method of Measurement of Construction Works (English and French editions)
- Elemental Cost Analysis, Format, Method of Measurement, Pricing including Measurement of Buildings by Area & Volume
- Construction Budgeting
- Canadian Building Law

All publications are available from CIQS. Contact the Institute at (905) 477-0008 or toll free at 1-866-345-1168 or visit www.ciqs.org for a complete publications list and order form.

TPE Part (b) – Structured Training Period

Members must complete a minimum number of working hours of approved industry experience based on the membership pathway for which they qualify. In addition, all members must record and submit work diaries for the minimum number of working hours of approved industry experience for the qualified membership category they hope to obtain.

The work diaries are subjected to the following rules:

- Members must apply to the Institute for permission to start their diaries.
- A member cannot start his/her daily diary until all the conditions of his/her membership pathway are met.
- The start date for diaries is stated in the letter of approval from the Institute.
- Credit for work done in the past is not automatic. Members seeking credit for past industry experience must apply to the Institute for approval. The Institute will assess whether such past industry experience is valid and will determine the amount of credit, if any, to be awarded.
- Daily diaries must be submitted on a quarterly basis until the required minimum number working hours of approved industry experience is achieved. This means that a member may be required to submit diaries beyond the hours stated if the required amount of approved working experience is not met.
- The CIQS has determined areas of approved experience that each member must complete before he or she is deemed qualified.
- The areas of approved experience are divided into two sections – Section 6.2.1 (Mandatory) and Section 6.2.2 (Optional). See below.
- Members are required to complete daily diaries for a set minimum of working hours on the Areas of Approved Experience based on the qualified membership level they are applying for.
- Candidates may be required to attend an interview to discuss their professional experience.

Section 6.2: Areas of Approved Experience

Section 6.2.1 Mandatory Requirements

6.2.1.1 - Budgeting including preparing and using historical cost data
6.2.1.2 - Quantity take-off
6.2.1.3 - Contract document review and preparation of bid packages
6.2.1.4 - Site visits, evaluating site conditions including location
6.2.1.5 - Estimating and/or negotiating change orders
6.2.1.6 - Pricing analysis including preparation of progress cash flow charts
6.2.1.7 - Preparing, monitoring and finalizing progress claims

Section 6.2.2 Optional Requirements

6.2.2.1 - Feasibility studies
6.2.2.2 - Reserve fund studies/costs
6.2.2.3 - Life cycle costing studies
6.2.2.4 - Analysis of tenders and recommendations
6.2.2.5 - Pricing building elements
6.2.2.6 - Cost control during design
6.2.2.7 - Preparing bills of quantities/schedule of quantities
6.2.2.8 - Monitoring construction costs against budget
6.2.2.9 - Pricing materials, labour and equipment, etc.
6.2.2.10 - Cost control
6.2.2.11 - Preparing material schedules
6.2.2.12 - Receiving, evaluating and awarding sub-trades
6.2.2.13 - Preparing construction claims
6.2.2.14 - Administering contracts including making progress payments
6.2.2.15 - Preparing and monitoring construction schedules
6.2.2.16 - Finalizing actual construction cost data
6.2.2.17 - CPD credits
6.2.2.18 - Other work

Range of Experience/Diary Requirements

The time of the structured training period and diary requirements will depend on the candidate's academic, professional or trade qualifications and length of approved industry experience. The diary requirements fall into three (3) categories – Class D1, Class D2 and Class D3. Please refer to Education Policy Guidance Notes #B3 to #B9 for the structured training period and diary requirements of each TPE route.

The diary requirements categories are:

Class D1 Diary Requirements
Based on Areas of Approved Experience (Section 6.2 on Page 17), the range of experience and duration of diaries required in this category is a minimum of 1,920 working hours comprising:

a) Section 6.2.1 Mandatory Requirements: At least 1,520 working hours covering not less than any four (4) sub-sections with a minimum of 160 working hours per sub-section,
   Plus
b) Section 6.2.2 Optional Requirements: At least 400 working hours covering not less than any three (3) sub-sections with a minimum of 80 working hours per sub-section. Please note a maximum of only eight hours annually is allowed for Sub-Section 6.2.2.17 CPD Credits. For Sub-Section 6.2.2.18 Other Work, candidates must obtain approval from CIQS before attempting this requirement, and only a maximum of 40 hours annually is allowed.

Class D2 Diary Requirements
Based on Areas of Approved Experience (Section 6.2 on Page 17), the range of experience and duration of diaries required in this category is a minimum of 1,920 working hours comprising:

a) Section 6.2.1 Mandatory Requirements: At least 1,520 working hours covering the remaining three (3) sub-sections not covered under Class D1 diary requirements above. A minimum of 160 working hours per sub-section is required,
   Plus
b) Section 6.2.2 Optional Requirements: At least 400 working hours covering not less than three (3) other sub-sections not covered under Class D1 diary requirements above. A minimum of 80 working hours per sub-section is required. Please note a maximum of only eight hours annually is allowed for Sub-Section 6.2.2.17 CPD Credits. For Sub-Section 6.2.2.18 Other Work, candidates must obtain approval from CIQS before attempting this requirement, and only a maximum of 40 hours annually is allowed.

Class D3 Diary Requirements
Based on Areas of Approved Experience (Section 6.2 on Page 17), the range of experience and duration of diaries that must be covered in this category is a minimum of 3,840 working hours comprising:

a) Section 6.2.1 Mandatory Requirements: At least 3,040 working hours covering **ALL** sub-sections with a minimum of 160 working hours per sub-section,
   Plus
b) Section 6.2.2 Optional Requirements: At least 800 working hours covering not less than six (6) sub-sections with a minimum of 80 working hours per sub-Section. Please note a maximum of only eight hours annually is allowed for a total of 16 hours for Sub-Section 6.2.2.17 CPD Credits. For Sub-Section 6.2.2.18 Other Work, candidates must obtain approval from CIQS before attempting this requirement, and only a maximum of 40 hours annually is allowed for a total of 80 hours.

TPE-APPROVED WORKING EXPERIENCE DAILY DIARY REQUIREMENTS									
Section 6.2 - Areas of Approved Experience	Class D1 Diary Requirements			Class D2 Diary Requirements			Class D3 Diary Requirements		
	Minimum Sub-sections Required	Minimum Working Hours per Sub-section	Total Hrs.	Minimum Sub-sections Required	Minimum Working Hours per Sub-section	Total Hrs.	Minimum Sub-sections Required	Minimum Working Hours per Sub-section	Total Hrs.
Section 6.2.1 - Mandatory Requirements									
6.2.1.1	Minimum of any 4 sub-sections	160	1,520	Minimum 3 remaining sub-sections not covered under Class D1 diary requirements	160	1,520	All sub-sections required	160	3,040
6.2.1.2									
6.2.1.3									
6.2.1.4									
6.2.1.5									
6.2.1.6									
6.2.1.7									
Section 6.2.2 - Optional Requirements									
6.2.2.1	At least 3 sub-sections	80	400	At least 3 sub-sections not covered under Class D1 diary requirements	80	400	At least 6 sub-sections	80	800
6.2.2.2									
6.2.2.3									
6.2.2.4									
6.2.2.5									
6.2.2.6									
6.2.2.7									
6.2.2.8									
6.2.2.9									
6.2.2.10									
6.2.2.11									
6.2.2.12									
6.2.2.13									
6.2.2.14									
6.2.2.15									
6.2.2.16									
6.2.2.17		*** Max. 8 hrs./year**			*** Max. 8 hrs./year**			*** Max. 16 hrs./year**	
6.2.2.18		***Max. 40 hrs.**			***Max. 40 hrs.**			***Max. 80 hrs.**	
Total			**1,920**			**1,920**			**3,840**

TPE Part (c) – Practice Problem

The general rules governing the TPE Part (c) – Practice Problem are:

(1) Candidates are only eligible to attempt the practice problem when they have successfully completed Parts (a) and (b) of the TPE.

(2) The practice problem comprises two sections:
   (a) a study of the CIQS By-laws, CIQS Rules & Regulations and CIQS Code of Ethics, and
   (b) a project.

(3) At least 50% of the practice problem shall deal with by-laws, rules and regulations, and professional ethics.

(4) Candidates will answer the problem in their working environment and will be allowed to use all reference material and other resources normally available to them.

(5) After completion of the practice problem, candidates may, at the discretion of CIQS, the administrating body, be required to attend an interview.

(6) The practice problem will be offered on an as-needed basis.

(7) Please refer to Education Policy Guidance Note #A10 for passing grades.

Membership Pathways

As noted, a member seeking the qualified status of Professional Quantity Surveyor (PQS)/Économiste en Construction Agréé (ECA) or Construction Estimator Certified (CEC)/Estimateur en Construction Certifié (ECC) must complete the requisite TPE requirements. However, these requirements will vary according to the applicant's academic qualifications and approved industry working experience. Typically, the Institute assesses each application individually to determine the most appropriate pathway. Listed below are some typical TPE membership pathways (routes):

(a) Students in fully accredited programs – see TPE Routes 1, 2a & 2b on Page 22.

(b) Students in approved accredited programs – see TPE Routes 3, 4a & 4b on Page 23.

(c) Applicants with engineering, trades or other qualifications – see TPE Routes 5 & 6 on Page 24.

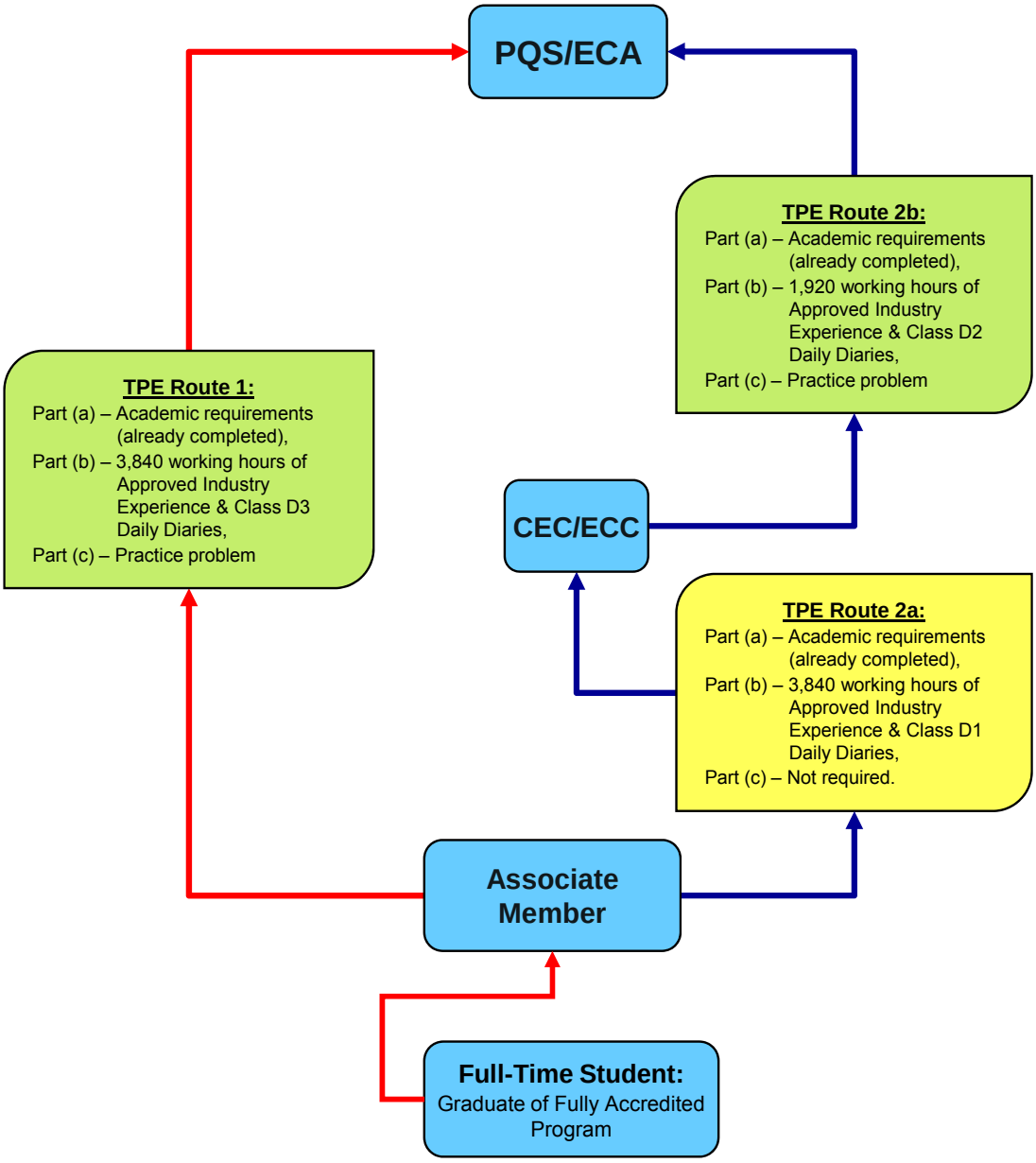
(d) For those who qualify as a direct finalist – see TPE Routes 7 & 8 on Page 25.

(e) For those who qualify as a mature candidate – see TPE Route 9 on Page 26.

(f) For those who qualify through equivalent professional qualification – see TPE Route 10 on Page 27.

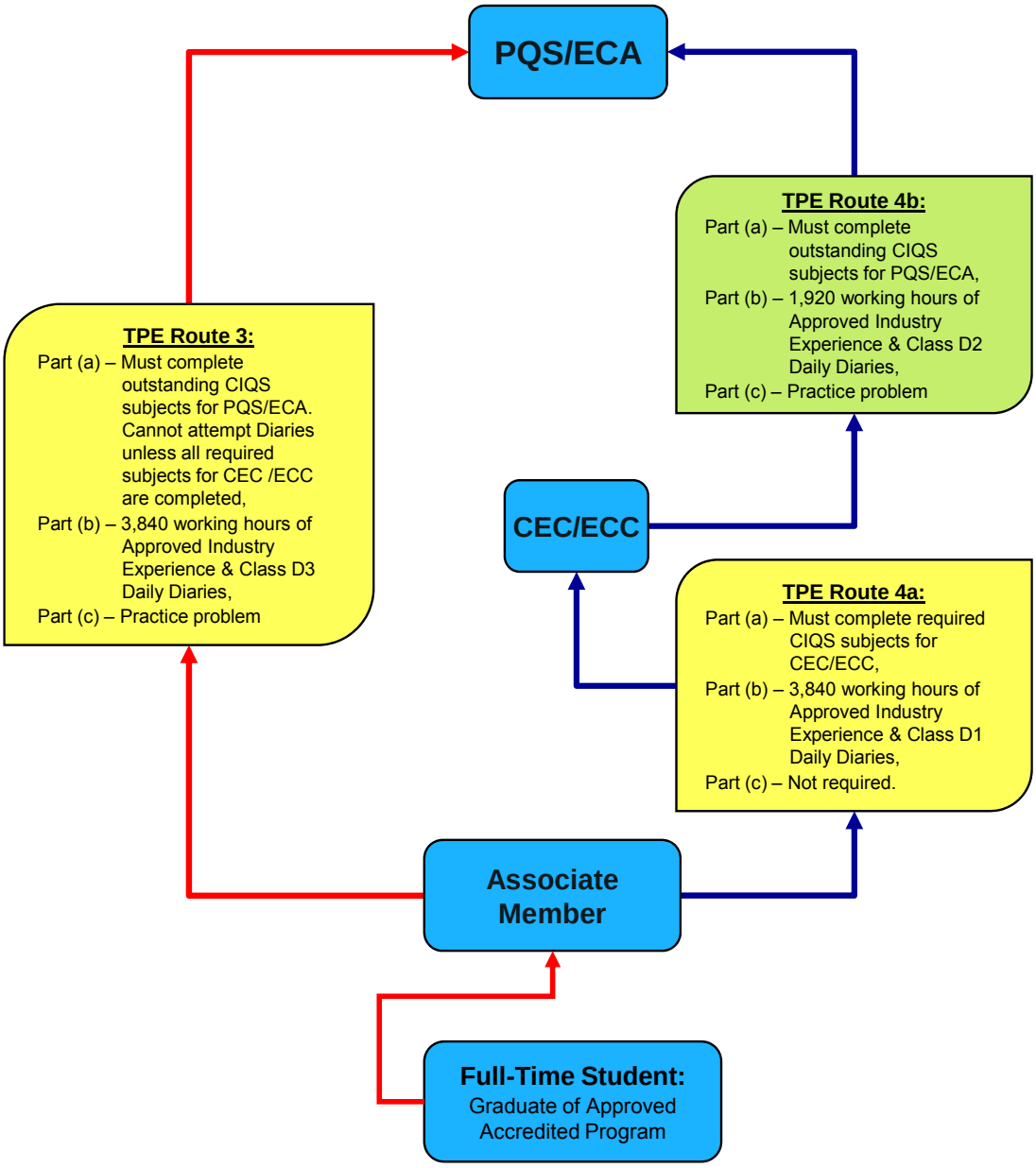
(g) For those who qualify through the RICS professional qualification – see TPE Route 11 on Page 28.

Pathway – TPE Routes 1, 2a & 2b for Students in Fully Accredited Programs



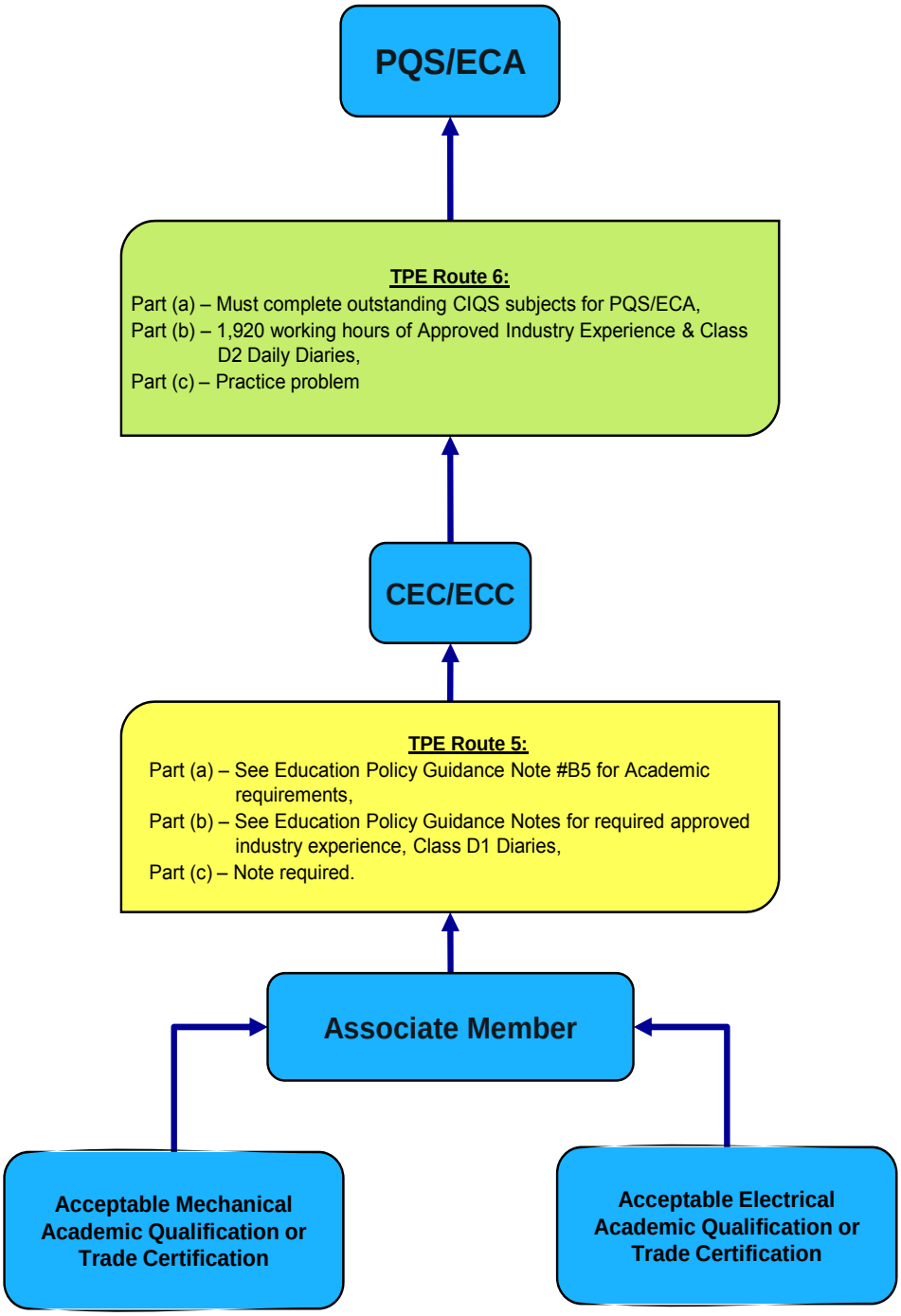
- Students are encouraged to join the Institute while attending an educational institution. Membership and the quarterly journal (Conecon) are free for all students.
- Upon graduation, student members are transferred to the associate member category.
- The recommended pathway for graduates of fully accredited programs is shown in the red arrow.

Pathway – TPE Routes 3, 4a & 4b for Students in Approved Accredited Programs



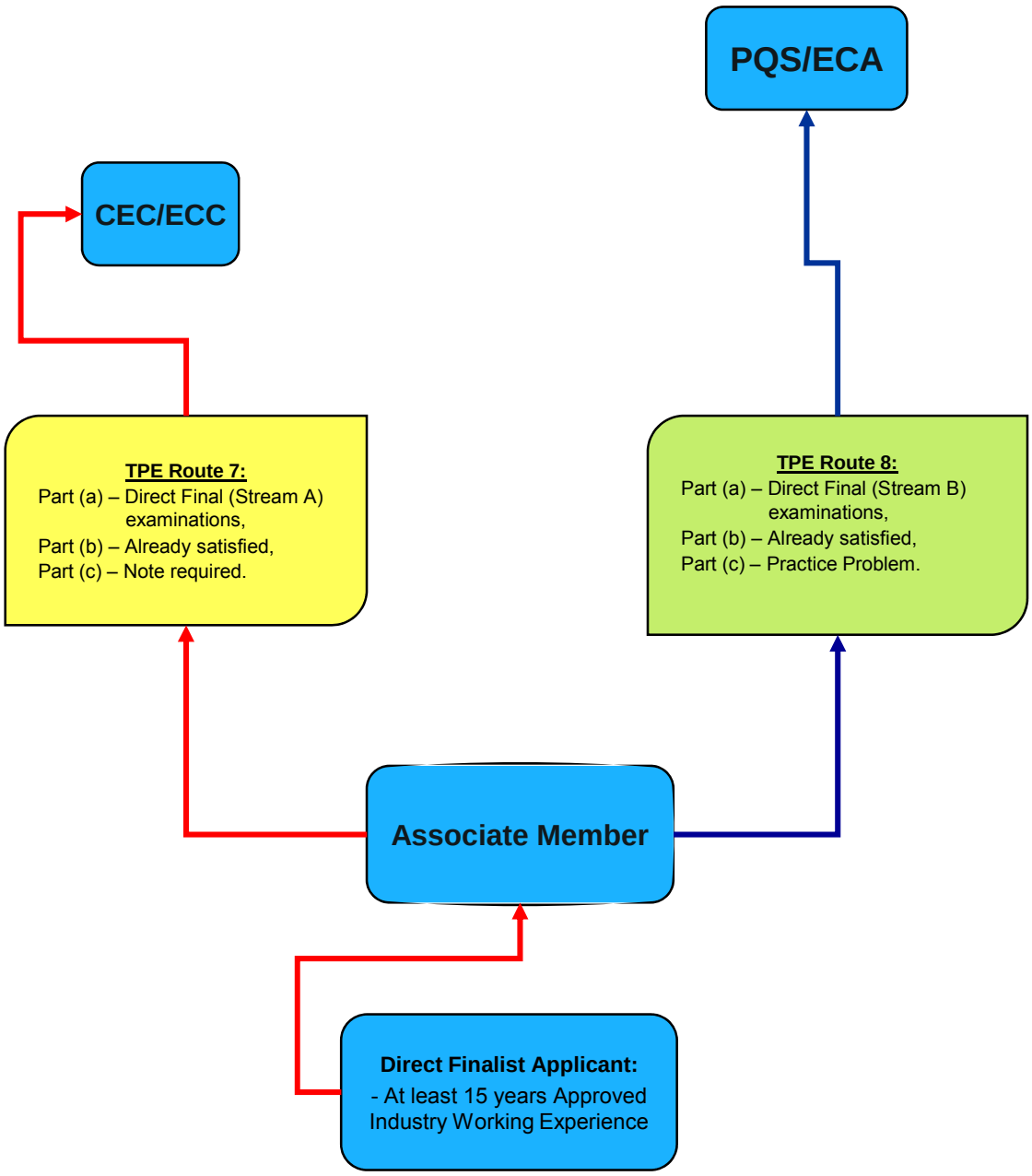
- Students are encouraged to join the Institute while attending an educational institution. Membership and the quarterly journal (Conecon) are free for all students.
- Upon graduation, student members are transferred to the associate member category.
- Note in TPE Route 3, candidates cannot attempt their Class D3 diaries until they have completed the required subjects for CEC/ECC.

Pathway – TPE Routes 5 & 6 for Engineering, Trades, Others



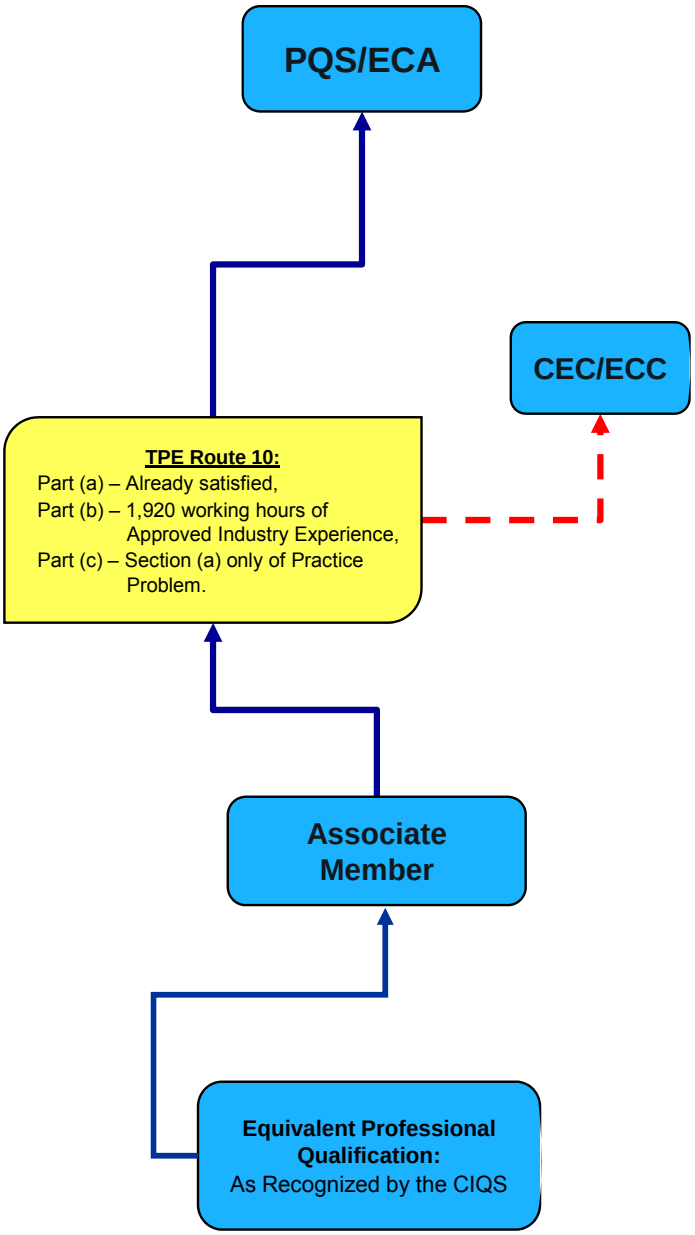
- Applicants with acceptable academic or trade certification are assessed for academic conformity with the CIQS syllabi and the required approved industry experience as noted in Education Policy Guidance Note #B5.

Pathway – TPE Routes 7 & 8 for Direct Finalist



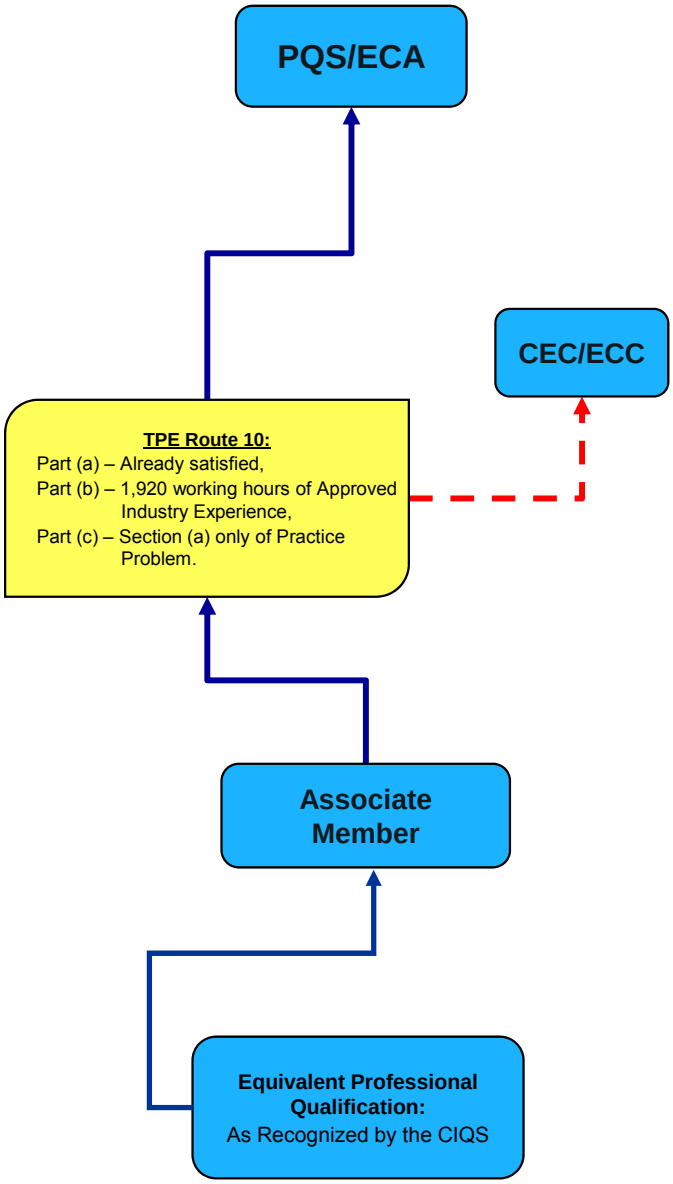
- The direct finalist applicant must have at least 15 years of approved industry experience. These applicants are accepted as associate members.
- The CEC/ECC Direct Final Examination Stream A comprises subjects #302 Measurement of Construction Work – Practical Exam (A, M or E) and #303 Pricing & Bidding Procedures (A, M or E). It is subjected to special restrictions – the pass mark for each subject is 10% higher (70%) than other streams, the candidate must pass all subjects in not more than three examination sessions and only one failure is allowed for each subject.
- The PQS/ECA Direct Final Examination Stream B comprises subjects #302 Measurement of Construction Work – Practical Exam (A, M or E), #303 Pricing & Bidding Procedures (A, M or E), #C304 Contract Administration and #C308 Cost Planning. It is subjected to special restrictions – the pass mark for each subject is 10% higher (70%) than other streams, the candidate must pass all subjects in not more than three examination sessions and only one failure is allowed for each subject.

Pathway – TPE Route 9 for Mature Candidate



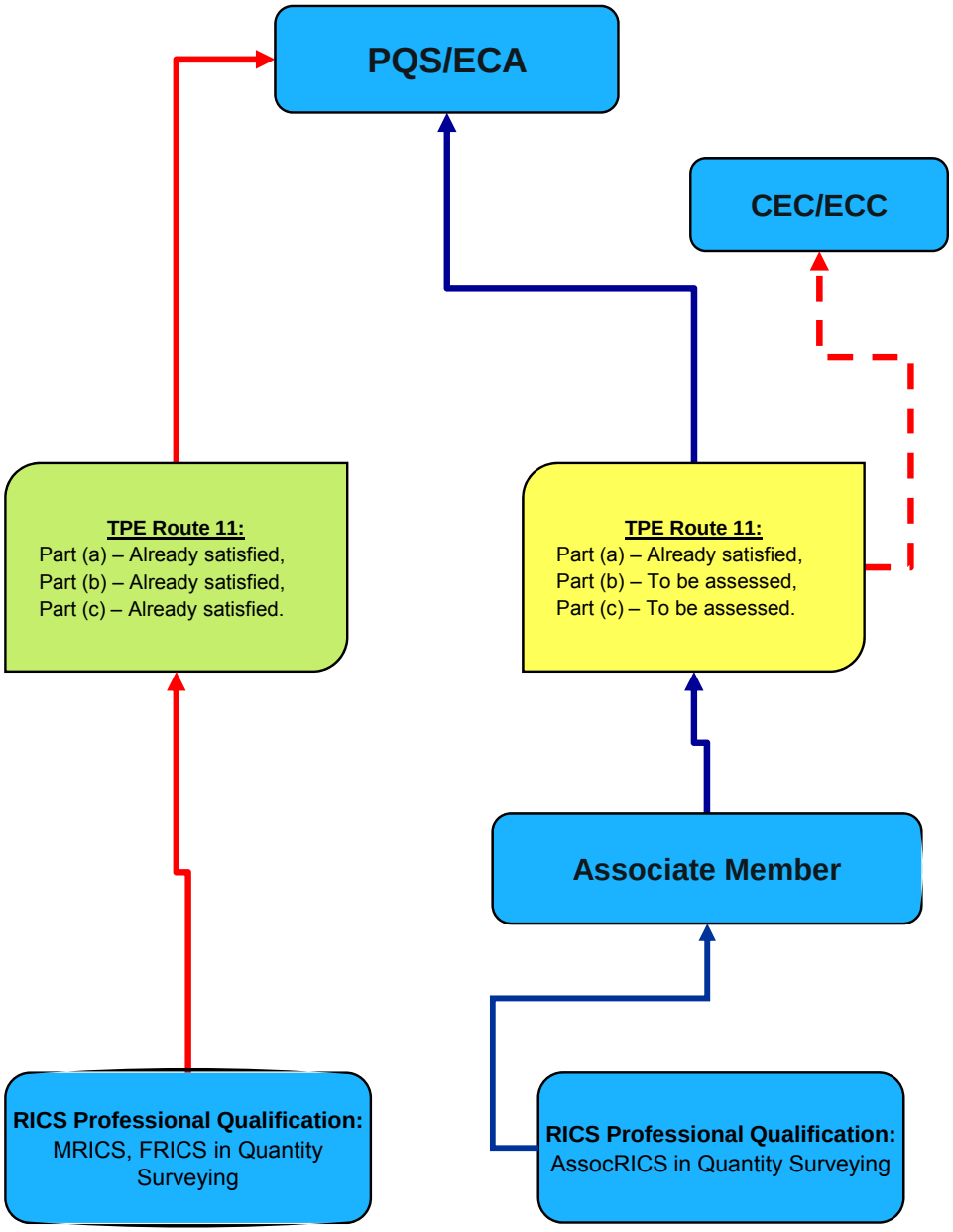
- This pathway to PQS/ECA is not available to out-of-country applicants.
- Applicants for the mature candidate pathway must have at least 20 years of approved working experience.
- The Mature Candidate Examination comprises two written papers and an oral examination. The subjects of the papers are chosen by the CIQS from a list of subjects submitted by the associate member. The papers are subjected to special conditions and must not be less than 1,000 words. The papers are reviewed by the CIQS prior to the oral examination.
- The oral examination lasts approximately 45 minutes. The purpose of the oral examination is to objectively assess the suitability of the candidate for membership in the Institute and his/her knowledge of the subjects of the written papers.
- Only one attempt through the Mature Candidate pathway is allowed.

Pathway – TPE Route 10 for Equivalent Professional Qualification



- Applicants with equivalent professional qualifications as recognized by the CIQS are accepted as associate members. Equivalent professional qualification includes applicants who are certified by other institutions that have signed reciprocity agreements with the CIQS. However, each reciprocity agreement will have specific restrictions and these are taken into consideration when the application is being assessed.
- Associate members with the required approved industry experience are allowed to sit Part (c) of the TPE practice problem. All others are required to obtain 1,920 working hours of approved industry experience before they can attempt Part (c) of the TPE practice problem.
- Members in this TPE route may choose to become a CEC/ECC when that requirement is met.

Pathway – TPE Route 11 for RICS Professional Qualification



- Only those RICS members whose primary discipline is quantity surveying qualify for this TPE route for entry into the CIQS.
- AssocRICS qualified applicants will be assessed individually to determine conformity with the CIQS TPE requirements. Some applicants may qualify for CEC/ECC.
- MRICS qualified applicants will be accepted directly as PQS/ECA.
- Members in this TPE route may choose to become a CEC/ECC when that requirement is met.

The Next Step – To Be or Not To Be?

For Yourself

The preceding pages give a brief overview of the CIQS, its history, its membership categories, the roles and responsibilities of its members and the various pathways to becoming a member. Similar to other professions, the quantity surveying profession in Canada was started by a few members who recognized that the only way the profession would survive and grow is through unity by means of a common association – in our case, the CIQS. The career choices in the quantity surveying profession we enjoy today are a direct result of the efforts of the CIQS in promoting the profession over the years.

Undoubtedly your first question will be, "What's in it for me?" For a recent graduate, finding that first job can be very difficult. For those wishing to change jobs, you will have to send out numerous resumes and will literally have to "pound the pavement." Joining a professional association like the CIQS can make this task much easier, giving you the opportunity to network with your peers as well as potential employers. Most job vacancies are not advertised in the daily media but are actually filled from recommendations from within the company; such recommendations come from your peers. Joining and participating in the Institute will be your advertisement to your peers and to potential employers.

There are many other benefits; some can be direct and obvious:

- A valuable and recognized professional designation (PQS/ECA or CEC/ECC),
- Construction Economist Journal (Conecon),
- Frequent newsletters,
- Annual General Meeting,
- Local chapter meetings and social events,
- Discounted purchase of publications,
- Member rate access to seminars,
- Inclusion of personal résumés in our members only job bank,
- Access to employer advertised openings,
- Affinity programs that include car and home insurance discounts,
- Availability of liability, errors and omissions Insurance for individuals and companies through agents who know our business,
- Career and educational mentoring and guidance.

Other benefits can be evident but intangible:

- Peer recognition as an educated, skilled and ethical professional,
- Personal networking and problem solving among members who well understand your industry and working environment,
- A written Code of Ethics for all members with its associated disciplinary procedure,
- Advantages from the Institute's ongoing industry promotional activities,
- Compliance with consulting and individual membership requirements now being requested by several client agencies including federal and provincial departments,
- Opportunities for personal development through involvement in promotional activities,
- A qualification that is transferable throughout Canada and to other countries,
- A qualification recognized by other Canadian industry organizations (e.g. Canadian Construction Association Gold Seal Estimator),
- A qualification recognized by many overseas Institutions including the members of the Pacific Association of Quantity Surveyors (PAQS),
- Potential recognition in other future professional associations, both local and overseas, that may be recognized through reciprocity agreements,
- An ongoing, and challenging, continuing professional development program.

For the Institute

Benefits are not all one sided - we need you just as much as you need us. Our prime goal is the promotion of our profession to the construction industry and its allied professions. Your involvement in our business as a member of the Institute will strengthen and help widen our influence, impact and recognition. As a member you will have ample opportunity to guide and influence the Institute's growth, direction and policies. Without you, we all lose. We need each other to develop the synergy so evident when like minds work together towards a common goal. Together, we are more than the sum of our individual parts.

For our Profession

As a member, you will greatly increase our collective impact on the widening recognition of our profession throughout Canada, at all levels and in all spheres of our personal employment. We can each become an ever-more-important and valued member of any construction team through the increasing use of our expertise gained in a profession that has yet to achieve its fullest potential. The future awaits.

Architectural Syllabus Calendar Descriptions (For complete syllabus details, visit www.ciqs.org.)

Level 100

C101 Construction Science
In this course, the student learns to apply some of the basic laws of physics as they relate to construction and to problems in buildings and other structures, particularly the effects of loads, stress, bending, moisture and temperature changes, acoustics and electrical theory.

A102 Construction Technology I
This course introduces the student to the materials and methods used in construction associated with excavation and earth works, concrete works including reinforcing steel, masonry and metals. The purpose is to acquaint the student with the manufacturing process of various materials and the way in which the materials and methods are implemented in a construction project. The contents of this subject cover sections 2, 3, 4 and 5 of MasterFormat.

A103 Measurement of Construction Work I
This course introduces the student to basic blueprint reading and the measurement of construction work, including the proper use of the approved CIQS estimate form along with the fundamentals of estimating. This course will also cover sections 2, 3 and 4 of the CIQS Method of Measurement of Construction Works, published by the Canadian Institute of Quantity Surveyors.

A104 Surveying Principles and Applications
This course introduces the student to the equipment, methods and calculations used in land surveying. The student will study the various types of instruments along with the ability to interpret and record data from the various types of surveys and survey drawings.

C105 Introduction to Computers
This course will provide a general introduction to computers, application software, hardware and computer systems. Emphasis is to be placed upon computer literacy topics with the main emphasis upon the use of commercial application software packages for word processing and spreadsheets.

The Institute does not offer examinations on this course but will, through evaluation of existing education programs, direct the member to appropriate courses.

C106 Economics I
This course introduces the student to the theory of economics and addresses the micro economic policies, issues and debates. This course along with course 206, Economics II, will assist the quantity surveyor in predicting price fluctuations and explaining why prices on various projects have fluctuated or may fluctuate in the future.

The Institute does not offer examinations on this course but will, through evaluation of existing education programs, direct the member to appropriate courses.

C107 Introduction to Canadian Business Law
This course is intended as an introduction to the nature and framework of Canadian law, its operation and subdivisions. Emphasis shall be placed upon the study of the law of contract and the law of tort. This course is to provide a basis for future study of construction contracts and contract administration.

C108 Basic Business and Technical Communications
This course helps to prepare students for the complex writing tasks found in the workplace. Students are to learn the difference between informational, persuasive and researched writing. Students learn to express themselves clearly and concisely, focusing on audience and purpose.

The Institute does not test this as a separate subject but tests this ability in all written work.

Architectural Syllabus Calendar Descriptions (For complete syllabus details, visit www.ciqs.org.)

Level 200

A201 Construction Technology II
This course adds to the knowledge gained in Construction Technology I, covering subjects dealing with wood and plastics, thermal and moisture protection, doors, windows and glazing, interior and exterior finishes as covered in sections 6, 7, 8 and 9 of MasterFormat.

A202 Measurement of Construction Work II
This course is a continuation of the studies introduced in Measurement of Construction Work I and covers the construction details found in more sophisticated structures. The course expands on the topics of Measurement of Construction Works I (subject 103) and introduces sections 5, 6 and 7 covered by the CIQS Method of Measurement of Construction Works.

C203 Construction Cost Accounting
This course is an introduction to financial accounting concepts: accounting procedures, bookkeeping fundamentals, financial statements and analysis of company financial data.

C204 Construction Contracts
This subject builds upon the principles of law and introduces the most commonly used standard forms of construction contracts issued by the Canadian Construction Documents Committee and the Canadian Construction Association.

C205 Construction Management
This subject deals with the organization of construction, construction projects and construction firms along with the interrelationship between the various parties involved in a construction project. Introduced are the subjects of scheduling, cost control and contract administration.

C206 Economics II
This course supplements the knowledge gained in Economics I by addressing macro economic theories.

The Institute does not offer examinations on this course but will, through evaluation of existing education programs, direct the member to appropriate courses.

A207 Construction Technology III
This course adds to the knowledge gained in Construction Technology I and II and covers sections 10, 11, 12, 13, 14, 15 and 16 of the MasterFormat specification divisions along with additional studies concerning larger scale site servicing and municipal servicing including water supplies and sewers.

A208 National Building Code
A study of Parts 1, 2, 3 and 9 of the National Building Code covers residential and small commercial construction. This course is to

Architectural Syllabus Calendar Descriptions (For complete syllabus details, visit www.ciqs.org.)

Level 300

A301 Measurement of Construction Work III
This course is a continuation of the studies introduced in Measurement of Construction Work I and II and covers the construction details found in more sophisticated structures. The course expands on the topics of 103 and 202 and introduces sections 8, 9, 10, 11, 12, 13 and 14 covered by the CIQS Standard Method of Measurement.

A302 Measurement of Construction Work - Practical Examination
This is the final measurement course and is designed to be a summation of the knowledge gained in subjects 103, 202, and 301. The subject of general requirements section 1 of the CIQS Standard Method of Measurement is also introduced.

A303 Pricing and Bidding Procedures
In this course, the student learns the principles and methods used in preparation of the unit prices for individual items of work. The student also learns the procedures and considerations required to prepare the total bid or tender price using the information obtained from quantity take-off drawings and specifications.

C304 Contract Administration
This subject deals with the practical application and administration of construction contracts studied in subject 204 Construction Contracts. The student will also apply the legal principles studied in subject 107 Introduction to Canadian Business Law, as well as selected case law as it applies to the administration of the contract.

C305 Construction Cost Control
This course builds upon the knowledge gained in Construction Cost Accounting and the Measurement of Construction Works I, II and III courses. It introduces the concept of financial control over the project by using the estimating data, production data and the cost data obtainable from all projects.

A306 Measurement & Pricing of Civil Works
This subject deals with engineered construction such as sewers, roads, shoring and underpinning and mass excavation works. Engineered work, unlike building construction, has a high component of equipment costs and as well, much of the work is undertaken in remote locations, which add additional costs not found in building construction.

C307 Construction Scheduling
This course introduces the concepts of project scheduling, including various types of schedules used in the construction industry. This course is designed to acquaint the candidate with the basic principles of scheduling to enable the candidate to prepare schedules from given or calculated data.

C308 Cost Planning
Using the knowledge developed in the measurement and pricing subjects, the student is introduced to concepts of cost planning from project inception to end of contract. This subject covers various types of conceptual estimating, including elemental costing and analysis.

C309 Development Economics
This subject deals with the economic viability of a project. The student will be required to prepare feasibility studies and other economic analysis such as yield analysis and life cycle costing.

Mechanical Syllabus Calendar Descriptions (For complete syllabus details, visit www.ciqs.org.)

Level 100

C101 Construction Science
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

M102 Mechanical Technology I
This course deals with the mechanical systems instruction of not more than two storeys such as housing and simple industrial buildings of conventional construction. In this course, the student studies general mechanical principles of design, materials and methods and procedures dealing with plumbing, heating, ventilating, air conditioning and testing of systems.

M103 Measurement of Mechanical Work I
This course deals with the measurement of mechanical items covered under Mechanical Technology I. Emphasis is placed on the accuracy of measurement in a logical sequence together with neat presentation. The course will cover site works, building drainage, domestic water, plumbing fixtures and heating and ventilation.

M104 Plumbing & Fire Protection Design
This course deals with the development of the principles and the design of the plumbing and fire protection installations found in the types of buildings studied in Mechanical Technology I. Included is the calculation of loads and the application of plumbing and fire protection codes.

C105 Introduction to Computers
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

C106 Economics I
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

C107 Introduction to Canadian Business Law
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

C108 Basic Business and Technical Communications
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

M109 Heating, Ventilation & Air Conditioning Design
This course deals with the developmernt of the principles of design of the heating, ventilation and air conditioning installations found in the types of buildings studied in Mechanical Technologies I & II including the calculations involved.

Mechanical Syllabus Calendar Descriptions (For complete syllabus details, visit www.ciqs.org.)

Level 200

M201 Mechanical Technology II
This course is an extension of Mechanical Technology I and covers mechanical principles, methods and details found in more sophisticated structures such as medium rise residential, commercial, institutional and industrial buildings. The course covers fire protection, domestic hot water, drainage, safe works, general mechanical principles, and materials and methods employed in the more sophisticated systems.

M202 Measurement of Mechanical Work II
This course is an extension of previous studies and includes the measurement and description of mechanical work covered in Mechanical Technologies I and II.

C203 Construction Cost Accounting
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

C204 Construction Contracts
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

C205 Construction Management
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

C206 Economics II
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

M207 Refrigeration, Automatic Controls, Insulation
This course focuses on the practical applications of the knowledge and skills required to be productive in the refrigeration and air conditioning industry. Emphasis is placed on the digital electronic controls and system efficiency.

M208 Mechanical Technology III
This course deals with the problems encountered in the construction of large or multi-storeyed buildings of a complex nature or where specialized types of mechanical systems are called for. Included is a minor study of systems found in hospitals.

Mechanical Syllabus Calendar Descriptions (For complete syllabus details, visit www.ciqs.org.)

Level 300

M301 Measurement of Mechanical Work III
This course is an extension of measurement of Mechanical Work I and II dealing mainly with the work covered in Mechanical Technology III.

M302 Measurement of Mechanical Work - Practical Examination
This subject covers all areas studied in Mechanical Technologies I, II and III and Measurement of Mechanical Work I, II and III. This subject is the final measurement exam in this syllabus.

M303 Pricing and Bidding Procedures
In this course, the student learns the principles and methods used in preparation of the unit prices for individual items of work. The student also learns the procedures and considerations required to prepare the total bid or tender price using the information obtained from quantity take-off drawings and specifications.

C304 Contract Administration
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

C305 Construction Cost Control
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

M306 Industrial Piping
This course will introduce the student to the style and method of preparing a flow sheet of materials normally found in industrial piping installations. Particular emphasis will be place upon knowledge and understanding of the special types of pipes and fittings used in these installations.

C307 Construction Schedule
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

C308 Cost Planning
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

C309 Development Economics
Common subject; please refer to the Level 100 Mechanical Syllabus for details.

Electrical Syllabus Calendar Descriptions (For complete syllabus details, visit www.ciqs.org.)

Level 100

C101 Construction Science
Common subject; please refer to the Level 100 Electrical Syllabus for details.

E102 Electrical Technology I
This subject covers calculations to fully electrify simple structures not exceeding two stories such as housing and simple industrial buildings of conventional construction. The course includes general electrical principles and theory of design processes for lighting power requirements for alarms, communications and mechanical power requirements.

E103 Measurement of Electrical Work I
This subject covers the content of Electrical Technology I, Illumination Design and Electrical Code.

E104 Illumination Design
In this subject the student will study illumination of building interiors and exteriors as well as site lighting.

C105 Introduction to Computers
Common subject; please refer to the Level 100 Electrical Syllabus for details.

C106 Economics I
Common subject; please refer to the Level 100 Electrical Syllabus for details.

C107 Introduction to Canadian Business Law
Common subject; please refer to the Level 100 Electrical Syllabus for details.

C108 Basic Business and Technical Communications
Common subject; please refer to the Level 100 Electrical Syllabus for details.

E109 Electrical Code I
This subject deals with the latest edition of the Canadian Electrical Code and, because of the large volume of study involved, this will be divided into two subjects. This subject will include the primary portion, basically code requirements for 750 volts and less.

Electrical Syllabus Calendar Descriptions (For complete syllabus details, visit www.ciqs.org.)

Level 200

E201 Electrical Technology II
This course builds upon the knowledge gained in Electrical Technology I and deals with more sophisticated structures such as medium rise residential, commercial, institutional and industrial buildings. Content will cover calculations to fully electrify these building types and classifications, and the design of mechanical installations found in these types of buildings.

E202 Measurement of Electrical Work II
This subject deals with the measurement of work covered by Electrical Technology I and II.

C203 Construction Cost Accounting
Common subject; please refer to the Level 100 Electrical Syllabus for details.

C204 Construction Contracts
Common subject; please refer to the Level 100 Electrical Syllabus for details.

C205 Construction Management
Common subject; please refer to the Level 100 Electrical Syllabus for details.

C206 Economics II
Common subject; please refer to the Level 100 Electrical Syllabus for details.

E207 Electrical Technology III
The subject builds upon the knowledge gained in Electrical Technologies I and II and deals with sophisticated structures such as high-rise residential, commercial, institutional and industrial buildings including hospitals. The content will include calculations to fully electrify those building types and classifications, and the design of mechanical installations found in these types of buildings.

E208 Mechanical Installations
The intention of this course is the development of the principles in a design of mechanical installations found in the types of buildings studied in Electrical Technologies I and II.

E209 Electrical Code II
This subject will deal with the latest edition of the Canadian Electrical Code and can only be undertaken following completion of Electrical Code I. This course is more advanced and will cover voltage above 750 and amperage above 600.

Electrical Syllabus Calendar Descriptions (For complete syllabus details, visit www.ciqs.org.)

Level 300

E301 Measurement of Electrical Work III
This course will deal with measurement of electrical works covered by Electrical Technology III.

E302 Measurement of Electrical Work - Practical Examination
This subject is the final measurement subject in the electrical syllabus and covers all areas of electrical work covered by the study of electrical technology and the Canadian Electrical Code.

E303 Pricing and Bidding Procedures
In this course the student learns the principles and methods used in preparation of the unit prices for individual items of work. The student also learns the procedures and considerations required to prepare the total bid or tender price using the information obtained from quantity take-off drawings and specifications.

C304 Contract Administration
Common subject; please refer to the Level 100 Electrical Syllabus for details.

C305 Construction Cost Control
Common subject; please refer to the Level 100 Electrical Syllabus for details.

E306 Communication Design and Technology
This course will deal with the state of the art design and technology of communication systems for buildings from simple structures to complex hospitals or commercial buildings.

C307 Construction Scheduling
Common subject; please refer to the Level 100 Electrical Syllabus for details.

C308 Cost Planning
Common subject; please refer to the Level 100 Electrical Syllabus for details.

C309 Development Economics
Common subject; please refer to the Level 100 Electrical Syllabus for details.

AFFILIATED ASSOCIATIONS:

Association of Quantity Surveyors of Alberta
Quantity Surveyors of British Columbia
Newfoundland and Labrador Association of Quantity Surveyors
Nova Scotia Association of Quantity Surveyors
Ontario Institute of Quantity Surveyors
Association of Estimators and Quantity Surveyors of Quebec

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