



# **INSTITUTION OF ENGINEERS SINGAPORE**

# **APEC ENGINEER COMPETENCE AGREEMENT (APECEA)**

## **APEC Engineer Register**

## **ASSESSMENT STATEMENT**

Institution of Engineers, Singapore  
APEC Engineer Monitoring Committee of Singapore  
70 Bukit Tinggi Road  
Singapore 289758

Tel: (65)-6469 5000

Fax: (65)-6467 1108

Website: <https://www.ies.org.sg/Registries/APEC-Engineers-Register>

# Document Control

**Document Name:** APEC ENGINEER COMPETENCE AGREEMENT  
(APECEA)

**Date Created:** Mar 2025

**Status:** Final

**Version Information:** Version 4

<b>Version Number</b>	<b>Version Date</b>	<b>Objective and Summary of Changes Made to Previous Version</b>
V1	July 2009	The APEC Engineer Manual
V2	Jun 2019	IES's APEC Engineer Assessment Statement
V3	Oct 2022	Draft amendment reflecting changes made after APEC audit in Jan 2022
V4	Mar 2025	Amendment reflecting changes made after IEA Review in 2024

# TABLE OF CONTENTS

<b>INTRODUCTION .....</b>	<b>6</b>
<b>1 The APEC Engineer.....</b>	<b>6</b>
<b>2 Objective of APEC Engineer Register .....</b>	<b>6</b>
<b>3 Purpose of Assessment Statement .....</b>	<b>7</b>
<b>PART A: THE MONITORING COMMITTEE .....</b>	<b>8</b>
<b>4 Background on related engineering institutions in Singapore .....</b>	<b>8</b>
<b>PART B: CRITERIA FOR REGISTRATION.....</b>	<b>11</b>
<b>5 Requirements for admission in APEC Engineer Register .....</b>	<b>11</b>
<b>6 Prescribed academic qualification.....</b>	<b>11</b>
<b>7 Practical work experience .....</b>	<b>13</b>
<b>8 Responsible charge of significant engineering work.....</b>	<b>13</b>
<b>9 Continuing Professional Development.....</b>	<b>13</b>
<b>10 Code of Professional Conduct and Ethics.....</b>	<b>14</b>
<b>11 Process Flow Chart, Checklist and Forms.....</b>	<b>14</b>
<b>PART C: ASSESSMENT FRAMEWORK .....</b>	<b>16</b>
<b>12 Elements of Competency Standard .....</b>	<b>16</b>
<b>13 Assessment Panels .....</b>	<b>17</b>

<b>14</b>	<b>Assessment of Application Form.....</b>	<b>18</b>
<b>15</b>	<b>Professional Review Interview.....</b>	<b>18</b>
<b>16</b>	<b>Assessment Report and Decision.....</b>	<b>18</b>
<b>17</b>	<b>Notice of the Results.....</b>	<b>18</b>
<b>18</b>	<b>Appeal Process.....</b>	<b>19</b>
	<b>PART D: ENGINEERING DISCIPLINES/SECTORS.....</b>	<b>20</b>
<b>19</b>	<b>General requirement.....</b>	<b>20</b>
<b>20</b>	<b>Engineering Disciplines/Sectors.....</b>	<b>20</b>
<b>21</b>	<b>Indicative Area of Practice.....</b>	<b>20</b>
<b>22</b>	<b>Table of disciplines for each sector.....</b>	<b>25</b>
	<b>PART E: APPLICATION GUIDANCE.....</b>	<b>28</b>
<b>23</b>	<b>Who is eligible to apply.....</b>	<b>28</b>
<b>24</b>	<b>Application form.....</b>	<b>28</b>
<b>25</b>	<b>Application fee.....</b>	<b>28</b>
<b>26</b>	<b>Renewal of registration.....</b>	<b>28</b>
<b>27</b>	<b>Obligations of APEC Engineers.....</b>	<b>29</b>
<b>28</b>	<b>Disciplinary action.....</b>	<b>29</b>
<b>29</b>	<b>Dispute resolution.....</b>	<b>29</b>

<b>ANNEX A: CPD FRAMEWORK .....</b>	<b>31</b>
<b>Appendix I.....</b>	
<b>ANNEX B: IES CODE OF CONDUCT AND ETHICS.....</b>	<b>37</b>
<b>ANNEX C: COMPETENCY STANDARDS.....</b>	<b>43</b>
<b>ANNEX D: PROCESS FLOW CHART .....</b>	<b>48</b>
<b>ANNEX E: APEC APPLICATION PROCESSING CHECKLIST .....</b>	<b>50</b>
<b>ANNEX F: APEC APPLICATION FORM FOR PE/CENG ROUTE.....</b>	<b>51</b>
<b>ANNEX G: APEC APPLICATION ASSESSMENT FORM .....</b>	<b>53</b>
<b>ANNEX H: APEC RENEWAL PROCESS.....</b>	<b>55</b>
<b>ANNEX I: APEC RENEWAL APPLICATION FORM.....</b>	<b>56</b>

# INTRODUCTION

## 1 The APEC Engineer

- 1.1 An APEC Engineer is defined as a person who is recognised as equivalent to a professional engineer within an APEC economy, and who has satisfied an authorised body in that economy, operating in accordance with the criteria and procedures prescribed in The APEC Engineer Manual – The Identification of Substantial Equivalence, a copy of which is available on APEC web site at: [http://publications.apec.org/publication-detail.php?pub\\_id=608](http://publications.apec.org/publication-detail.php?pub_id=608)

## 2 Objective of APEC Engineer Register

- 2.1 Each Authorised body, also called the Monitoring Committee, in an APEC economy, will arrange to provide timely and accurate information on the status of any practitioner claiming to be listed on its APEC Engineer Register to any person or organisation having a legitimate need for access to such information, to exchange relevant data with the other authorised Monitoring Committees, and, within their economy, to function as a single point of contact on all matters relating to APEC Engineers.
- 2.2 Each Monitoring Committee further undertakes to:
- a) accept and promote the substantial equivalence of the competence of APEC Engineers registered by other Monitoring Committees;
  - b) make every reasonable effort to ensure that the bodies responsible for registering or licensing professional engineers to practise within their economy recognise that APEC Engineers have general technical and professional competence substantially equivalent to that of engineers already registered or licensed in that economy;
  - c) ensure that all practitioners registered by them as APEC Engineers comply fully with the requirements specified in the APEC Engineer Framework, and that a substantial majority of these practitioners have demonstrated their compliance through the primary procedures and criteria set out in the Assessment Statement for that economy;
  - d) ensure that practitioners applying for registration as an APEC Engineer are required to provide evidence that they have engaged in an appropriate level of recent continuing professional development; and
  - e) ensure that practitioners registered by them as APEC Engineers apply from time to time for renewal of their registration, and, in so doing, provide evidence that they have engaged in an appropriate level of recent continuing professional development.

- 2.3 The Monitoring Committee in each APEC economy recognises that a mutual exemption framework, which would confer exemption, in whole or in part, upon APEC Engineers from further assessment by the statutory bodies that controlled the right to practise in each participating economy, can be concluded only with the involvement and consent of those statutory bodies and the relevant governments. Only complete or partial exemption of APEC Engineers from the assessment mechanisms operating in the host jurisdiction is at issue, not exemption from the requirement to become licensed or registered in the economy concerned.

### **3 Purpose of Assessment Statement**

- 3.1 This Assessment Statement provides a framework for the assessment of qualified practitioners for placement on the APEC Engineer Register by Singapore's Monitoring Committee.

# PART A:

## THE MONITORING COMMITTEE

### 4 Background on related engineering institutions in Singapore

#### **The Institution of Engineers Singapore (IES)**

4.1 The Institution of Engineers, Singapore (IES) was formally established on July 1966 as the national society of engineers in Singapore. The IES is the premier engineering Institution in Singapore and is often called upon by the Government to provide feedback on professional engineering matters. Its mission is to advance and promote the science, art and profession of engineering for the well-being of mankind. Its objectives are:

- a) To enhance the character and status and to advance the interest of the profession of engineering and those engaged therein.
- b) To promote honourable practice and mutual respect, and to decide all questions of engineering practice and etiquette affecting members of the Institution.
- c) To provide quality service to its members and the nation; and
- d) To provide opportunity for continuing professional development and promote fellowship among members.

4.2 IES is a national institution which is the representative of the engineering profession in all branches and sectors of engineering in Singapore.

4.3 The affairs of IES are governed by a body called the Council. The Council consists of volunteers who are members of IES. The Council consists of the President, One Deputy President, Five Vice-Presidents, 21 General Members including Honorary Secretary, Assistant Honorary Secretary, Honorary Treasurer, Assistant Honorary Treasurer. For the first year of the President's two-year term, there will be 6 Vice-Presidents and no Deputy President.

#### **Professional Engineers Board Singapore (PEB)**

4.4 The Professional Engineers Board is a statutory body which administers the Professional Engineers Act (PE Act), which is an Act of Parliament that provides for the registration of professional engineers (PEs), regulates the qualifications, and conduct of PEs and regulates corporations which supply professional engineering services in Singapore. PEB's mission is to safeguard life, property, and welfare of the public by setting high standards for registering and regulating PE. Its main objective of the registration of PEs is to ensure that engineering works that involve public safety and interest are carried out by engineers who are competent.

4.5 The PE Act requires applicants for registration as PEs to possess an engineering degree of acceptable standard as well as an adequate and relevant post-graduate engineering work experience. PEB had previously registered PEs in 12 engineering disciplines (namely Civil (including Structural), Mechanical, Electrical, Electronic, Aeronautical, Marine, Naval Architecture, Manufacturing (including Production),

Industrial, Information Technology & Computer Engineering, Environmental and Chemical). However, it presently will register PEs in only 4 engineering disciplines, where works involving public safety will be regulated by the authorities, namely, Chemical, Civil, Electrical and Mechanical.

#### **Chartered Engineering Board (CEB)**

- 4.6 The Chartered Engineering Board (CEB), constituted by the IES Council, will manage the assessment and registration process. The CEB will approve engineers (IES Corporate Members) to be placed on the register of Chartered Engineers of Singapore. The structure of CEB may include representatives from the government, the engineering industry, relevant professional associations, and institutions of higher education delivering engineering programs.
- 4.7 The Terms of Reference of the CEB are to –
- (i) develop and maintain accreditation procedures, criteria and systems for the registration of Chartered Engineers of Singapore;
  - (ii) develop and maintain a register of Chartered Engineers of Singapore, including a list of persons whose Chartered Engineer registration has been cancelled;
  - (iii) audit continuing compliance by Chartered Engineers of Singapore with the conditions of registration; and
  - (iv) receive, investigate and resolve complaints against Chartered Engineers of Singapore.

#### **The APEC Engineer Monitoring Committee Singapore (AEMCS)**

- 4.8 The IES shall be the assessing body for qualifications and experience required for placement on the APEC Engineers Register. The functions of the APEC Engineer Monitoring Committee, Singapore (AEMCS) which will perform AEMCS's roles with the following Terms of Reference:
- i) develop and maintain an assessment system to ensure that APEC Engineers meet the conditions of registration;
  - ii) develop and maintain a Register of APEC Engineers in Singapore;
  - iii) audit continuing compliance by APEC Engineers with the conditions of registration;
  - iv) receive, investigate and resolve complaints against APEC Engineers;
  - v) maintain and disseminate a list of persons whose APEC Engineer registration has been cancelled;
  - vi) participate in deliberations of the APEC Engineer Coordinating Committee;
  - vii) submit statements and such other information as may be required by the Coordinating Committee to enable the Coordinating Committee to review the proposed system;
  - viii) publish information on its assessment procedures, criteria, systems and performance;
  - ix) maintain records and documents in a form suitable for review by member economies;
  - x) provide representatives to assist in reviewing other assessment systems; and
  - xi) function as a single point of contact on all matters relating to APEC Engineers in Singapore, including timely and accurate information on whether individuals

are APEC Engineers.

4.9 All references to the AEMCS will be hereinafter refer to CEB. The list of members of CEB is posted on the IES web site.

4.10 The contact person for the purposes of AEMCS is:

Registrar, APEC Engineer Monitoring Committee (AEMC)  
c/o The Institution of Engineers, Singapore  
70 Bukit Tinggi Road  
Singapore 289758  
Tel : (65) 64695000  
Fax : (65) 64671108  
Email : enquiry@charteredengineers.sg

# PART B: CRITERIA FOR REGISTRATION

## 5 Requirements for admission in APEC Engineer Register

5.1 AEMCS shall grant registration in APEC Engineer Register to a candidate if he/she:

- (a) has met the prescribed academic qualification;
- (b) has obtained at least **7 years of practical** work experience in engineering since graduation;
- (c) has spent at least **2 years in responsible charge** of significant engineering work;
- (d) has been assessed as **eligible for independent practice** in engineering;
- (e) maintains **continuing professional development** in accordance with the requirements in this Assessment Statement; and
- (f) agrees to be bound by the **prescribed Code of Professional Conduct and Ethics**.

## 5.2 Registration as APEC Engineer with IES via three routes

A candidate who had been registered in Singapore either as–

- (a) a Professional Engineer by the PEB, and is in possession of a valid practising certificate issued by PEB; or
- (b) a Chartered Engineer by the Chartered Engineers Board of the IES, or
- (c) who completed an accredited or recognised engineering programme and attained at least 7 years of practical work experience with 2 years in responsible charge of significant engineering work for APEC register.

is deemed to have been assessed as eligible for independent practice in engineering.

5.3 The candidate shall apply using the format as described in Part D for registration in APEC Engineer Register and in the engineering disciplines/sectors as prescribed in Part C.

## 6 Prescribed academic qualification

6.1 Candidates to be placed on the APEC Engineers Register shall possess a prescribed academic qualification. An engineering program which meets the prescribed academic qualification is either:

- a) an engineering degree accredited by an organisation holding full membership of, and operating in accordance with the terms of, the Washington Accord. Engineering degrees which are accredited under the Washington Accord

framework are at:

<https://www.ieagreements.org/accords/washington/>

- b) an engineering degree that can substantially meet the graduate attributes profiles for Washington Accord that is listed in the International Engineering Alliance’s “Graduate Attributes and Professional Competencies”.
  - c) an engineering program which has been accredited by Engineering Accreditation Board (EAB) of The Institution of Engineers, Singapore. The criteria and procedures for accreditation of engineering programs are provided in the Accreditation Manual of Engineering Accreditation Board, The Institution of Engineers Singapore, a copy of which is available at: <https://www.ies.org.sg/Accreditation/EAB10249;>
  - d) a Degree of Bachelor of Engineering from the National University of Singapore, the Nanyang Technological University, or the University of Singapore prior to EAB being full signatory of the Washington Accord in 2006<sup>1</sup>;
  - e) a graduate of a foreign university whose engineering program is accepted for registration as a professional engineer, as listed in Professional Engineers (Approved Qualifications) Notification (read in conjunction with Professional Engineers (Approved Qualifications) (Amendment) Notification 2016), copies of which are available at:
    - [https://www.peb.gov.sg/Downloads/PE%20\(Appeved%20Qualifications\)%20Notification%202009.pdf](https://www.peb.gov.sg/Downloads/PE%20(Appeved%20Qualifications)%20Notification%202009.pdf)
    - <https://www.peb.gov.sg/Downloads/PE%20Approved%20QualificationsAmendment%20Notification%202016.pdf>; or
  - f) any other proper and recognised training in engineering, had passed the prescribed Interview/Examination by the CEB and PEB, and is deemed by CEB and PEB to have satisfied the academic qualification requirement for registration as CEng and PE.
- 6.2 The CEB may accept an engineering degree accredited by a body whose accreditation criteria and/or examination standards has been determined by the IES as substantially equivalent to the graduate attributes profiles referred to in paragraph 22.1.1(ii) above.

---

<sup>1</sup> Prior to IES/EAB being admitted as full signatory of the Washington Accord, the engineering programs from the National University of Singapore, the Nanyang Technological University were accredited by constituent institutions of EC UK.

## 7 Practical work experience

- 7.1 Candidates to be placed on the APEC Engineers Register shall have **at least** 7 years of relevant practical work experience in engineering after completing the prescribed academic qualification. A report describing the type, significance, and level of responsibility of the engineering work experience at a professional level shall be submitted for assessment.
- 7.2 Acceptable engineering work experience includes –
- (a) engineering design work, development of specifications and operating procedures;
  - (b) supervising and/or execution of engineering works;
  - (c) engineering investigation;
  - (d) evaluation of engineering proposals;
  - (e) engineering research and development;
  - (f) testing and commissioning of engineering works; or
  - (g) engineering management.

## 8 Responsible charge of significant engineering work

- 8.1 A candidate should have spent **at least** 2 years in responsible charge of significant engineering work and this period could be within the course of the practical experience since graduation. Responsible charge of significant engineering work refers to having a significant influence on the technical direction of engineering projects or programs, which may involve –
- (a) planning, designing, or implementing a complete engineering project;
  - (b) undertaking a substantial part of engineering project while understanding the total project concept; or
  - (c) undertaking a project that requires multi-disciplinary, complex or novel work responsibility.

## 9 Continuing Professional Development

- 9.1 APEC Engineers are required to participate in IES's continuing professional development (CPD) programme. Before APEC Engineers can renew their annual registration, they are required to meet the prescribed CPD requirements.
- 9.2 The IES's prescribed CPD requirements for APEC Engineer is presented in Annex A "Continuing Professional Development (CPD) Framework"
- 9.3 The objectives of the CPD programme are to reinforce the need for lifelong learning and to provide a framework through which professional engineers could systematically maintain and enhance competency to do a job in their area of expertise. This will be assessed annually through the renewal of registration.
- 9.4 The requirement, in terms of professional development units (PDUs) over a one-year period, may be pegged to the Professional Engineers Board of Singapore (PEB) and Chartered Engineer Board (CEB)'s requirement for renewal of practising certificate.

- 9.5 In addition to courses which are accredited by the PEB to qualify for PDUs under the Professional Engineers Act, IES will also accredit courses, which are not in the PEB and CEB's prescribed disciplines or branches of engineering.
- 9.6 The AEMCS will carry out random audit (of between 2% and 5% of records for the past year) of participation in CPD programme.

## 10 Code of Professional Conduct and Ethics

- 10.1 APEC Engineers of Singapore who are professional engineers (PEs) registered with the PEB are deemed to have met this requirement as all PEs are bound by the Professional Engineers Act (Code of Professional Conduct and Ethics) Rules, a copy of which is in the PEB's web site
- 10.2 APEC Engineers of Singapore who are not PEs will be required to sign a Declaration of Compliance that they shall comply with the IES's Rules for Professional Conduct.
- 10.3 APEC Engineers are required to sign a declaration that he/she –
- (a) shall only practice within the areas of his/her competence; and
  - (b) not hold himself/herself out or conduct himself/herself in any way or by any means as a person who is authorised to supply professional engineering services in Singapore if he/she is not a registered professional engineer;
  - (c) shall be bound by the IES's Code of Professional Conduct and Ethics, a copy of which is in Annex B "The Institution of Engineers, Singapore Rules for Code of Professional Conduct and Ethics".

## 11 Process Flow Chart, Checklist and Forms

The process flow charts attached as **Annex D** explain the process flow of registration as APEC Engineer with IES via three routes, namely via Standalone, PE or CEng tracks. APEC Application Processing Checklist is appended in **Annex E**. APEC Application Form for PE/CEng Route are attached as **Annexes F and G** respectively while

The following forms, checklists and flow charts have been prepared for the application process:

- **Annex E:** APEC Application Processing Checklist [IES internal assessment process]
- **Annex F:** APEC Application Form for PE/CEng Route [For use by Applicant]
- **Annex G:** APEC Application Assessment Form [IES internal assessment process]
- **Annex H:** APEC Engineer Renewal Process [IES internal assessment process]

process]

- **Annex I:** APEC Engineer Renewal Application Form [For use by Applicant].

The APEC Application Assessment Form, as per **Annex G**, would be used for the assessment of the applicant during an interview.

# PART C: ASSESSMENT FRAMEWORK

## 12 Elements of Competency Standard

12.1 The Competency Standard is the ability to perform 12 elements that represent broad practice areas expected at professional engineering level. These elements are adapted from the professional competencies outlined in International Engineering Alliance’s “Graduate Attributes and Professional Competencies” Version 4 (21 Jun 2021) for the class of Professional Engineer. These 13 elements comprise the following –

S/n	Descriptor	Elements
(1)	Comprehend and apply knowledge	Comprehend and apply advanced knowledge of the widely-applied principles underpinning good practice
(2)	Comprehend and apply local knowledge	Comprehend and apply advanced knowledge of the widely-applied principles underpinning good practice specific to the jurisdiction of practice
(3)	Problem analysis	Define, investigate, and analyse complex problems using data and information technologies where applicable
(4)	Design and development of solutions	Design or develop solutions to complex problems considering a variety of perspectives and taking account of stakeholder views
(5)	Evaluation	Evaluate the outcomes and impacts of complex activities
(6)	Protection of society	Recognise the reasonably foreseeable economic, social, cultural and environmental effects of complex activities generally, and have regard to the need for sustainability; recognise that the protection of society is the highest priority
(7)	Legal and regulatory	Meet all legal and regulatory requirements and protect public health and safety in the course of his or her activities
(8)	Ethics	Conduct his or her activities ethically
(9)	Manage engineering activities	Manage part or all of one or more complex activities
(10)	Communication	Communicate and collaborate using multiple media clearly and inclusively with a broad range of stakeholders in the course of all activities

(11)	Lifelong learning	Undertake CPD activities sufficient to maintain and extend his or her competences and enhance the ability to adapt to emerging technologies and ever-changing nature of work
(12)	Judgement	Recognize complexity and assess alternatives in light of competing requirements and incomplete knowledge. Exercise sound judgement in the course of his or her complex activities
(13)	Responsibility for decisions	Be responsible for making decisions on part of all of complex activities

12.2 Examples of characteristics or indicators of each of these 12 elements that the form the assessment framework is given in Annex C “Characteristics or Indicators of each element of Competency Standard”.

12.3 It is expected that an engineer would typically require at least 7 years of practical working experience in order to acquire these elements of professional competencies.

### 13 Assessment Panels

13.1 AEMCS will appoint an Assessment Panel for each sector of Registration.

13.2 An Assessment Panel, comprising a Lead Assessor and 2 Assessors who are senior and experienced engineers to review and assess applications to be placed on the APEC Engineer Register. The assessment by the Assessment Panel shall include a professional review interview with the engineer applicant. The Assessment Panel will make their recommendations to the AEMCS on whether an engineer should be placed on the register for the discipline or sector of engineering that the engineer applied for.

13.3 The composition of an Assessment Panel to be appointed will be based on the following criteria:

- (a) all members of the Panel are either registered PE, CEng (Singapore); or APEC and active members in the registries.
- (b) all members have at least 10 years of relevant work experience; and
- (c) either (i) at least 2 out of the 3 members of the Panel will be from similar sector as the engineer to be assessed, or (ii) all 3 members of the Panel are members of the Monitoring Committee.

13.4 In order to avoid possible conflict of interest, members of the Panel are not expected to have or have had a close, active association with the engineer or the engineer’s work experience. Close/active association are, for example

- (a) being a relative of the engineer by birth or marriage; and
- (b) employment, either currently or within the past 3 years, as staff or consultant by the organisation at which the engineer’s work experience was obtained.

## **14 Assessment of Application Form**

- 14.1 The AEMCS will appoint a Registrar to carry out the initial screening and assessment to determine if the academic qualification meets the prescribed acceptable academic qualification, and the adequacy of the application form and report describing the type, significance, and level of responsibility of the engineering work experience.
- 14.2 The registrar will report the assessment, including any doubt on the specific academic qualification for the sector or discipline of engineering submitted, to the Assessment Panel.

## **15 Professional Review Interview**

- 15.1 The Professional Review Interview, which is a mandatory part of the Assessment Framework. is to be conducted by an Assessment Panel, unless the applicant has already been assessed and is a registered Professional Engineer of PEB and Chartered Engineer (Singapore) of IES.
- 15.2 The Interview will not be carried out if the AEMCS is satisfied that the academic qualifications have not satisfied the prescribed acceptable academic qualification and the application for registration should be rejected.
- 15.3 The Interview will be based on the information provided in the application form which served as written test (competency report) and will focus on the most recent and relevant experience.
- 15.4 The competency report demonstrates the level of competence, from which the Assessment Panel will determine if the engineer has largely met the elements of the Competency Standard.

## **16 Assessment Report and Decision**

- 16.1 Assessment Panels will prepare and submit its assessment report & recommendations, on the prescribed form, to the AEMCS. The AEMCS will review the report and recommendation to ensure that the procedures for assessment is adequate and there are no discrepancy and inadequacy.
- 16.2 The AEMCS will approve the recommendation by the Assessment Panel to register an engineer through a positive vote of more than half of the committee members of the AEMCS.

## **17 Notice of the Results**

- 17.1 AEMCS will inform all candidates of the results of its assessments, including providing reasons for refusal to register, where applicable.

## **18 Appeal Process**

- 18.1 An engineer may appeal against the refusal to be placed on the APEC Engineer register if/she believes that the interview assessment outcome is not appropriate
- 18.2 An appeal must be made in writing to the Monitoring committee within 30 days.
- 18.3 Monitoring committee will consider the appeal based on the evidence that submitted by the appellant and respond with its recommendations within 90 days
- 18.4 If relevant, second interview assessment will be conducted with 3 different assessors and Monitoring Committee will review the findings of the panellists and arrive at a final decision within 90 days after receipt of the appeal.
- 18.5 Monitoring Committee will provide the appellant with reasons for the decision and it shall be final and binding on the APEC Engineer.

# **PART D: ENGINEERING DISCIPLINES / SECTORS**

## **19 General requirement**

- 19.1 AEMCS has resolved to support the registration of engineers in disciplines and sectors that correspond to general areas of practice by PEs and Chartered Engineers in Singapore.

## **20 Engineering Disciplines/Sectors**

- 20.1 An engineer may be registered on APEC Engineer Register in any one of the following disciplines/sectors –

Disciplines:

- i) Civil
- ii) Electrical
- iii) Mechanical
- iv) Chemical

Sectors:

- i) Aerospace
- ii) Chemical and Energy
- iii) Built Environment
- iv) Engineering Project Management
- v) Environmental and Water
- vi) Renewable Energy
- vii) Infrastructure
- viii) Sustainability
- ix) Railway and Transportation
- x) Systems Engineering

- 20.2 A candidate can be registered in one or more disciplines/sectors, provided he/she meets the requirements in each of the disciplines/sectors he/she is to be registered in.

## **21 Indicative Areas of Practice**

- 21.1 Candidates shall satisfy the requirements in relation to each area of practice in which they apply to be registered on APEC Engineer Register. The indicative area of practice for each discipline/sector is listed below.

## **21.2 Aerospace**

APEC Engineers in Aerospace Engineering sector have expertise in aerodynamics, propulsion, avionics, flight performance and knowledge in materials science, interior, structures analysis, manufacturing, maintenance and repair for aircraft and spacecraft systems. They are concerned with the research and development, design, manufacture, integration, testing, maintenance and repair of aircraft and spacecraft, systems and their components. A key aim of Aerospace Engineering is to ensure aircraft are airworthy in accordance with regulatory requirements. Aerospace engineers are also involved in development of new technologies for use in aviation, space and defence systems.

## **21.3 Civil Engineering**

APEC Engineers in Civil Engineering discipline are concerned with materials such as steel, concrete, timber, earth and rock, and with their application in the research, design, development, manufacture, construction, operation, maintenance and management of hydraulic, structural, environmental and systems aspects of infrastructure works and services such as water, sewerage, transport, urban development and municipal services, and with building and construction for other infrastructure industries.

### Structural Engineering

APEC Engineers in Structural Engineering discipline have expertise in research, planning, design, construction, inspection, monitoring, maintenance, rehabilitation and demolition of permanent and temporary structures and structural systems and their components and with associated technical, economic, environmental, aesthetic, and social aspects. Structures might include buildings, bridges, in-ground structures, footings, frameworks, and space frames, including those for motor vehicles, space vehicles, ships, aeroplanes, and cranes, composed of any structural material including composites and novel materials.

### Geotechnical engineering

APEC Engineers in Geotechnical Engineering discipline are concerned with the planning, investigation, design, construction, and maintenance of works involving the ground, and works constructed from excavated natural materials.

## **21.4 Chemical Engineering**

APEC Engineers in Chemical & Process Engineering discipline are concerned with the process innovation, development, plant design and commissioning which are reflected in research related areas such as design, safety, and environmental protection. Chemical Engineering is applied in process innovation, scale-up, safety and modelling.

## **21.5 Chemical & Process**

APEC Engineers in Chemical & Process Engineering sector are concerned with

design and operations of chemical plants and process (including systems safety aspects), industrial processing and fabrication of products through chemical or physical changes, instrumentation, and control for protection of the environment.

## **21.6 Digital**

Digitalization is a growing movement to leverage technologies, especially software, to fundamentally change how businesses are run, creating new businesses and potentially entirely transforming a business. Digital includes 5 different engineering disciplines:

### Software engineering (SWE)

Software engineering is a discipline that applies engineering principles and approaches to developing software. Activities in software engineering include requirements engineering, programming, test engineering and maintenance.

### Site reliability engineering (SRE)

Site reliability engineering is a discipline that applies software engineering approaches to infrastructure and operations.

### Cybersecurity (CSE)

Cybersecurity is a discipline that focuses on the protection of computer systems and networks from data disclosure, theft, damage, or disruption of services.

### Computer engineering (CEG)

Computer engineering is a discipline that integrates software and electronics engineering to develop computer hardware and software.

### Data science and artificial intelligence (DSAI)

Data science is a discipline that uses multiple scientific methods, processes, and algorithms to extract insight from structured and unstructured data and apply it for multiple domains. Data science is often associated with artificial intelligence, which is a closely related field that uses software algorithms to perform tasks that normally require human intelligence, for example visual perception, speech recognition, decision making etc.

## **21.7 Electrical Engineering**

APEC Engineers in Electrical Engineering discipline are concerned with research, design, development, manufacture, installation, operation, maintenance and management of equipment, plant and systems within the electrical, electronic, communication and computer systems areas. Electrical Engineering is applied to electrical power generation, transmission, distribution and utilisation, manufacture, instrumentation and control in industry, communications networks, electronic plant and equipment, integration and control of computer systems.

## **21.8 Energy**

APEC Engineers in Energy engineering or energy systems engineering are dealing with energy efficiency, energy services, facility management, plant engineering, environmental compliance, and alternative energy technologies. Energy engineering is one of the more recent engineering disciplines to emerge and is a broad field of engineering. Energy engineering combines knowledge from the fields of physics, math, and chemistry with economic and environmental engineering practices. Energy engineers apply their skills to increase efficiency and further develop renewable sources of energy. The main job of energy engineers is to find the most efficient and sustainable ways to operate buildings and manufacturing processes. Energy engineers audit the use of energy in those processes and suggest ways to improve the systems. This means suggesting advanced lighting, better insulation, more efficient heating and cooling properties of buildings.

## **21.9 Engineering Project Management**

APEC Engineers in Engineering Project Management sector are concerned with competency to manage and control engineering projects in terms of plans, specifications, costs, schedules, resources, and risks.

## **21.10 Environmental & Water**

APEC Engineers in Environmental and Water Engineering sector is concerned with the engineering for the protection of the environment and natural resources. It requires fundamental understanding of environmental science and an appreciation of the mechanics of environmental systems to enable study, investigation, design, management & control of such systems.

Collectively and holistically, they apply an integrated approach to technical, economic, social, legal, and scientific considerations. Environmental and Water Engineers work on new or existing projects that require some form of improvement, remediation, or rehabilitation in the natural and built environment. Environmental and Water Engineers work in many areas of environmental protection and water treatment including water quality, waste water and storm water management, solid and hazardous waste management, contaminated land remediation, natural resource management, pollution control, air quality, noise management, greenhouse gas emission reduction, environmental management systems, environmental information systems, environmental impact assessment, social impact analysis and environmental risk assessment.

## **21.11 Infrastructure**

APEC Engineers in Infrastructure Engineering sector are concerned with competency to plan, design, optimise and develop estates, land, physical and organisational systems, and facilities to support operations of communities. Infrastructure includes residential, parks, walkways, overhead and underground bridges, commercial, industrial, ports, road networks, transport systems and others. Engineering planning

for these infrastructures cover land, connectivity, utilities, and operations.

### **21.12 Mechanical Engineering**

APEC Engineers in Mechanical Engineering discipline are concerned with research, design, development, evaluation, manufacture, installation, testing, operation, maintenance and management of machines, machine and thermodynamic processes, and manufacturing and materials handling plants and systems. Mechanical Engineering is applied to manufacturing, transport, electricity generation, and in works and services using machine systems, including the environment of building interiors. Applicants must have experience in the safety aspects of design and/or operation of machines, plant, systems, or processes.

### **21.13 Port & Marine**

APEC Engineers in Port & Marine Engineering sector are concerned with developing appropriate solutions to marine and offshore engineering problems. They develop and apply new technologies, introduce new and efficient production techniques, pioneer new engineering services and management methods. They have expertise to design, select, analyse and install marine propulsion, transmission and control systems. They have expertise in the design, dynamic and strength analysis of fixed and floating offshore oil and gas platforms. They are concerned with subsea systems, including marine systems to produce renewable energy. They are also concerned with environmental issues such as engine emissions and performance monitoring as well as safety aspects in Marine & Offshore Engineering sectors.

### **21.14 Railway & Transportation**

APEC Engineers in Railway and Transportation Engineering sector is concerned with competency to plan, conduct design, research and development, manufacture, construct, install, operate, inspect, monitor, maintain and manage Railway and Transportation systems & solutions and related infrastructure.

### **21.15 Systems Engineering**

APEC Engineers in Systems Engineering sector are concerned with Requirements Engineering, Risk and Opportunity Management, Baseline Control, Technical Planning, Technical Effort Assessment, Architecture/ Design Development, Qualification, Verification & Validation, Process Definition, Tool Support, Training, Systems Integration, Quality Assurance, Specialty Engineering.

## 22 Table of disciplines for each sector

Table 1 below shows main disciplines<sup>2</sup> which will play a prominent role in each of the sectors.

---

<sup>2</sup> The discipline of engineering degrees listed in the matrix are those being awarded by universities in Singapore. Graduates holding engineering degrees in other disciplines will be considered on a case-by-case basis, depending on the relevance to the industry/sector.

**Table 1 – Table of disciplines for each sector**

Sector / Main Disciplines	Aerospace	Chemical & Energy	Renewable Energy	Engineering Project Management	Environmental & Water	Infrastructure	Sustainability	Systems Engineering	Railway & Transportation
Aerospace	✓			✓			✓	✓	
Bioengineering		✓			✓		✓		
Chemical		✓	✓		✓		✓		
Civil	✓	✓	✓	✓	✓	✓	✓	✓	✓
Computer Engineering	✓			✓	✓		✓	✓	✓
Electrical	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electronics	✓			✓			✓	✓	✓
Engineering Product Development				✓			✓	✓	
Engineering Science	✓			✓	✓		✓	✓	✓
Environmental		✓	✓	✓	✓		✓	✓	
Industrial	✓			✓	✓	✓	✓	✓	✓
Manufacturing	✓						✓		✓
Materials Engineering	✓	✓	✓	✓	✓		✓	✓	✓
Mechanical	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sustainable Infrastructure Engineering						✓	✓		

# **PART E: APPLICATION GUIDANCE**

## **23 Who is eligible to apply**

- 23.1 Application for registration as APEC Engineer in Singapore is open only to –
- (a) IES Member, Senior Member or Fellow; and
  - (b) either a Professional Engineer registered by the PEB or a Chartered Engineer registered by the IES; or
  - (c) completed an accredited or recognised engineering programme and attained work experience for APEC register.
- 23.2 The AEMCS may refuse to register an engineer who in the opinion of the AEMCS is not of good character or reputation.

## **24 Application form**

- 24.1 The Application Form is available for download from the IES web site. The Application Form is as per Annex H.

## **25 Application fee**

- 25.1 The IES may impose a fee to cover the cost of processing the application and the assessment by the Assessment Panels. The application fee is shown on the Application Form.

## **26 Renewal of registration**

- 26.1 APEC Engineers will be required to renew their registration annually in order to remain on the register.
- 26.2 APEC Engineer should meet the following requirements before renewal can be granted:
- (a) has complied with the CPD requirements; and
  - (b) has not been removed from the APEC Register following a disciplinary action by the AEMCS.
- 26.3 The annual fee is shown on the Annual Renewal Form which is available for download from the IES web site.

## **27 Obligations of APEC Engineers**

- 27.1 APEC Engineers are assessed for competence in the practice area of their engineering discipline or sector which they have chosen. In accordance with IES's Rules for Professional Conduct and Ethics, APEC Engineers shall work only within their area of competence and should not offer to provide engineering services that lies outside their area of expertise.
- 27.2 As all members of the IES are enjoined to conform to the letter and the spirit of the IES's Rules for Professional Conduct, professional conducts of all APEC Engineers of Singapore are also bound by these Rules.
- 27.3 In particular, APEC Engineer of Singapore shall note that he/she should:
- (a) practise only in areas which he/she is competent in;
  - (b) not hold himself/herself out or conduct himself/herself in any way or by any means as a person who is authorised to supply professional engineering services in Singapore if he/she is not a registered professional engineer.
- 27.4 APEC Engineers of Singapore are required to maintain their continuing professional development at a satisfactory level, which should not be less than the level as prescribed by the AEMCS in Annex A.
- 27.5 The registration of APEC Engineer may be removed from the register if he/she fails to maintain a satisfactory level of continuing professional development

## **28 Disciplinary action**

- 28.1 A complaint against any APEC Engineer relating to contravention of the rules of professional conduct and ethics shall be lodged with the Registrar of the AEMCS.
- 28.2 If the AEMCS has determined the complaint to be bona fide, the AEMCS will constitute an Investigation Committee to investigate into the complaint and make recommendation to the AEMCS.
- 28.3 Any action to be taken by the AEMCS against the APEC Engineer, including removal from the register, shall not be taken unless the APEC Engineer has been given an opportunity of being heard.

## **29 Dispute resolution**

- 29.1 An APEC Engineer may appeal against the decision of the AEMCS to remove him/her from the register.
- 29.2 An appeal must be made in writing to the Honorary Secretary, Council of IES within 30 days after receiving notification of refusal or removal. The appeal should be accompanied by a report to substantiate the request.

- 29.3 The Council of IES will appoint an Appeal Committee comprising not less than 3 members to consider the request based on the report submitted by the appellant and respond with its recommendations within 90 days.
- 29.4 The Council of IES will consider the findings of the Appeal Committee and arrive at a final decision within 90 days after receipt of the appeal.
- 29.5 If the appeal is denied, the IES Council will provide the appellant with reasons for the decision.
- 29.6 If a review of the certification is necessary, the IES Council, in consultation with the AEMCS, will appoint another Assessment Panel to carry out the review.
- 29.7 If appeal for reinstatement on the register is successful, the AEMCS will reinstate the APEC Engineer on the register.
- 29.8 The IES Council may impose a fee for lodgement of an appeal. The fee will be refunded to appellant's membership account if the outcome is in appellant's favour, but there will be no refund if the original decision is confirmed.

# ANNEX A: CPD FRAMEWORK

## D1 Continuing Professional Development Framework<sup>3</sup>

D2.1 In this fast-changing environment, there is a need for APEC Engineers to adopt a lifelong learning process to maintain and update their professional competence on a continuing basis.

D2.2 As an APEC Engineer may be operating under circumstances which are unique to him/her, the focus of the CPD activities is best left to each APEC Engineer to decide. The principle is that the relevant CPD activities must be those related to the scope of practice of each APEC Engineer. There is therefore no prescribe rules as to the nature and type of activities to be undertaken but each APEC Engineer will be given the flexibility to select from amongst a broad range of activities. The range of activities in this CPD programme is not intended to be inclusive but to act as a general guide. The activities that would be relevant are those that will enable one to:

- a) maintain, improve, or expand technical skills and knowledge;
- b) keep abreast of changing procedures and standards;
- c) understand and apply advances in technology;
- d) better serve the engineering profession, community and environment;
- e) develop communication and management skills; and
- f) broaden into related fields, such as those covering management, financial or legal aspects.

## D2 Definitions

D2.1 The terms used in this document have the following meanings:

- a) “contact hour” refers to an attendance or involvement lasting one clock hour of not less than 50 minutes;
- b) “professional development units” or “PDU” refers to the unit of measure for effort in continuing professional development program;
- c) “renewal qualifying period” refers to a 12-month period immediately preceding the application for renewal of registration;
- d) “structured activity” refers to a course or activity that is accredited by the PEB or the IES or which involves active participation;
- e) “unstructured activity” refers to an activity that involves self-directed learning, reading, discussion or participation.

## D3 Requirement

D3.1 Every APEC Engineer who wishes to renew his registration is required to obtain a minimum of 40 PDUs over the renewal qualifying period. The 40 PDUs shall

---

<sup>3</sup> Adapted from the Professional Engineers Board, Singapore

comprise a minimum of 15 PDUs in structured activities, and the remainder can be obtained from either structured or unstructured activities.

D3.2 The determination of PDUs in structured and unstructured activities is in Appendix 1.

D4 **Carrying over of excess PDUs**

D4.1 If an APEC Engineer exceeds the annual requirement in one renewal qualifying period, a maximum of 40 PDUs from excess PDUs obtained from structured activities may be carried forward into the next renewal qualifying period.

D5 **Insufficient PDU for renewal of registration**

D5.1 An APEC Engineer who has not obtained sufficient PDUs in the renewal qualifying period to meet the requirement for renewal of his registration may apply to have his registration renewed by providing reasons for the failure to meet the requirement. The AEMCS may renew his registration and may impose a condition that the shortfall in PDUs in that renewal qualifying period has to be obtained during the following renewal qualifying period. The PDUs to be obtained in the next renewal qualifying period to meet the shortfall would not be used for the renewal of the registration for the next renewal period.

D6 **Reinstatement after a lapse of 3 years or more**

D6.1 An APEC Engineer whose registration had lapsed for 3 years or more is required to obtain 80 PDUs within the renewal qualifying period, of which at least 30 PDUs must be obtained from structured activities.

D7 **Exemptions**

D7.1 An APEC Engineer may be exempt, subject to review and approval of the AEMCS, from CPD requirements if he experiences physical disabilities, prolonged illness or other extenuating circumstances.

D8 **Records**

D8.1 When applying for renewal of registration, an APEC Engineer is to submit the Annual Renewal Form (which can be downloaded from the IES web site) which contains a form to record the PDUs obtained during the renewal qualifying period. APEC Engineers do not have to submit documentary evidence together with the Annual Renewal Form. However, APEC Engineers are advised to retain their CPD documentary evidence for a period of at least 2 years.

D9 **Audit Process**

D10.1 The AEMCS will conduct random audit on compliance with CPD. Those selected will be asked to produce documentary evidence of their CPD participation during the particular period. The documentary evidence may take any one of the following forms:

- a) Summary of diary records or a log showing the activities claimed;
- b) Course enrolment record;
- c) Receipts;
- d) Certificate of attendance;
- e) Attendance list from course organiser;
- f) Employer's report or certification.

D10 **Accreditation of structured activities**

D10.2 Structured activities qualifying under Category 1 can be those accredited by the PEB or the IES.

## APPENDIX I

**Requirement:** A minimum of 40 PDUs over a renewal qualifying period of 12 months, of which a minimum of 15 PDUs must be from structured activities.

**Determination:** Structured Activities are listed in Table 1 and Unstructured Activities are listed in Table 2.

**Table 1 - Structured Activities**

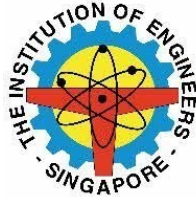
CATEGORY	CRITERIA	PDUs
<b>Category 1(a):</b> Accredited formal study courses	Relevant post-graduate or diploma courses on engineering and/or construction/project management. Example: MSc (Engineering) MSc (Project Management)	1 PDU for each contact hour
<b>Category 1(b):</b> Accredited lectures, short courses, conferences, workshops & seminars	Lectures, short courses, conferences, workshops & seminars which are relevant for professional engineers on technical, management, professional development, legal or regulatory matters. Examples: Seminars on regulatory requirements by government agencies eg. BCA, FSB, ENV, LTA, etc. “Engineers and the Law” by IES Workshops and seminars on engineering topics by NUS or NTU	1 PDU for each contact hour
<b>Category 1(c):</b> Accredited in-house training	Structured in-house training which are relevant to professional engineers on technical, management, professional development, legal or regulatory matters. [CV of speakers to be similar to category 1(a) or 1(b)]	1 PDU for each contact hour

CATEGORY	CRITERIA	PDUs
<b>Category 2:</b> Participation in Professional Boards, Committees and Societies	a) Member of Boards of local Professional institutions or relevant government agencies. Examples: i) Board Member of BCA, LTA, HDB, URA, JTC, PEB and BOA ii) Council Member ACES and IES	8 PDUs per organisation.
	b) Member of relevant technical or working committees of professional associations and government agencies. Examples: i) Member of Technical Committees of government departments and Statutory Boards; ii) Member of technical or other working committees of ACES & IES; iii) Member of approved technical societies.	4 PDUs per Committee (Maximum for this category is 8 PDUs)
<b>Category 3:</b> Contribution to relevant engineering or management knowledge	a) Conduct accredited lectures, seminars, conferences or training courses for the first time. (Exclude regular lectures by full-time lecturers)	4 PDUs for each lecture hour or part thereof
	b) Conduct accredited lectures, seminars, conferences or training courses after the first time. (Exclude regular lectures by full-time lecturers)	2 PDUs for each lecture hour or part thereof
	c) Write or edit technical articles or papers published in distinguished publications, conference proceedings, professional journals or books.	5 PDUs for each topic
	d) Engineering patents registered during the year	15 PDUs for each patent

**Table 2 - Unstructured Activities**

<b>CATEGORY</b>	<b>CRITERIA</b>	<b>PDU's</b>
<b>Category A:</b> Self-study of relevant topics	i) Reading of relevant technical, professional, financial, legal or business literature.	1 PDU for every 2 hours (Maximum for this category is 16 PDU's)
	ii) Listening/viewing audio/video tapes on relevant topics or taking correspondence courses.	
<b>Category B:</b> Informal In-house training and discussion	i) Conducting informal in-house training and presentations to colleagues.	1 PDU for every 2 hours (Maximum for this category is 16 PDU's)
	ii) Attending informal in-house training and presentations.	
<b>Category C:</b> Professional Membership	i) Membership of professional engineering or management bodies.	2 PDU's per organisation (Maximum for this category is 16 PDU's)
<b>Category D:</b> Non-accredited engineering activities	i) Attending professional and technical courses which are not accredited.	1 PDU for every 2 hours (Maximum for this category is 16 PDU's)
	ii) Attending organised group technical site visits and exhibitions.	

# ANNEX B: IES CODE OF CONDUCT AND ETHICS



## THE INSTITUTION OF ENGINEERS, SINGAPORE RULES FOR CODE OF PROFESSIONAL CONDUCT AND ETHICS

[25TH JANUARY 2016]

1. These Rules shall apply to all Chartered Engineers and any other professionals registered under the Institution of Engineers, Singapore (IES) professional registries and engaged in any professional work.
2. Every registered professional shall observe and be guided by Parts I and II of the Code of Professional Conduct and Ethics set out in the Rules.

### PART I

1. In this Part, unless the context otherwise requires -

“Board” means IES professional registration board, setting rules and policy includes disciplinary enquiry panel across all registries to ensure consistency and maintain professional standard of practice.

"professional" and any associated pronoun means a registered chartered engineer or any other professional registered under IES professional registry;

“professional services” means operation, maintenance, consultancy or advisory services that require a person to engage in professional work;

“professional work” includes any professional service, consultation, investigation, evaluation, planning, design, or responsible supervision of construction or operation in connection with any public or privately owned public utilities, buildings, machines, equipment, processes, works or projects wherein the public interest and welfare, or the safeguarding of life, public health or property is concerned or involved, and that requires the application of engineering or other technical principles and data;

"publicity" means any form of advertisement and includes any advertisement –

- (a) printed in any medium for the communication of information;
- (b) appearing in, communicated through or retrievable from, any mass medium, electronic or otherwise including but not limited to the internet, and its derivatives, and “publicise”, “publicised” and “publicising” shall be construed accordingly.

2. – (1) A professional shall uphold the dignity, standing and reputation of the profession.  
(2) A professional may, subject to these Rules, publicise his or her practice or allow his or her employee or agents to do so.

(3) A professional shall not publicise his or her professional practice in a manner which

- (a) is likely to diminish public confidence in the engineering or the relevant technological profession that the professional is registered under or to otherwise bring the profession into disrepute;
- (b) may reasonably be regarded as being misleading, deceptive, inaccurate, false or unbecoming the dignity of the profession; or
- (c) the Board may determine to be an undesirable manner of publicising his or her practice.

(3A) For the purposes of these Rules, publicity shall be considered to be misleading, deceptive, inaccurate or false if it —

- (a) contains a material misrepresentation;
- (b) omits to state a material fact;
- (c) contains any information which cannot be verified; or
- (d) is likely to create an unjustified expectation about the results that can be achieved by the professional.

(3B) In publicising his or her practice, a professional shall ensure that —

- (a) any claim to expertise or specialisation can be justified;
- (b) the publicity does not make any direct or indirect mention of past projects in which, or clients for whom, the professional or any of his or her firm or company had acted where the provision of such information will involve a breach of confidentiality owed to any client or former client; and
- (c) the publicity does not make any comparison or criticism in relation to the quality of the professional services provided by any other professional or allied professional.

(3C) For the purpose of sub-paragraph (3B) (a), the following factors shall be taken into account in justifying any claim to expertise or specialisation:

- (a) academic qualifications;
- (b) experience;
- (c) facilities;
- (d) personnel; and
- (e) capacity to render professional service.

(4) A professional shall refrain from expressing publicly an opinion on an engineering or technological project or product unless the professional is informed of the facts relating thereto.

(5) A professional shall —

- (a) exercise due restraint in criticising the professional work of another professional; and
- (b) not maliciously or recklessly injure or attempt to injure, directly or indirectly, the professional reputation, prospects or business of another professional.

(6) Sub-paragraph (4) shall not affect any moral obligation to expose unethical conduct before the proper authorities or preclude a frank but private appraisal of employees or of professional being considered for employment.

(7) A professional shall not endorse engineering or technological product, system or process in any commercial advertisement.

3. – (1) A professional shall discharge his or her duties to his or her employer or client with complete fidelity.

(2) A professional shall not accept remuneration for professional services rendered from any person other than his or her employer or client except with the knowledge and approval of his or her employer or client.

(3) A professional shall not, without disclosing the fact to his or her employer in writing, be a director of or have a substantial financial interest in, or be an agent for, any company, firm or person carrying on any business which is or may be involved in the professional work to which his or her employment relates.

(4) A professional shall not accept any trade commission, discount, allowance or indirect payment or other consideration in connection with any professional work in which he or she is engaged.

(5) A professional shall not receive, directly or indirectly, any royalty, gratuity or commission in respect of any patented article or process used in or for the purpose of the professional work in respect of which he or she is acting as a professional for an employer unless and until the receipt of such royalty, gratuity or commission by the professional has been authorised in writing by such employer.

(6) Subject to the provisions of these Rules, a professional shall not hold, assume or intentionally accept a position in which his or her interest is in conflict with his or her professional duty to his or her client or employer.

(7) A professional shall not disclose confidential information concerning the business affairs or technical processes of his or her client or employer without the consent of the client or employer.

(8) A professional shall not use information which is obtained confidentially in the course of his or her assignment for the purpose of making personal profit.

(9) A professional shall not divulge any confidential findings or studies or actions of an engineering or technical or scientific commission or board of which he or she is a member without the consent of the commission or board.

(10) A professional shall not give professional advice which does not fully reflect his or her best professional judgment.

(11) A professional shall engage, or advise engaging, experts and specialists when in his or her opinion and judgment such services are in the interest of his or her client or employer.

4. A professional shall not supply professional services in respect of any project in which he or she is acting as a developer of an engineering work or product that the project is aimed to develop or construct.

5. Notwithstanding the responsibility to his or her employer and to his or her profession, a professional shall act with prime regard to the public interest.
  
6. A professional shall not knowingly attempt to supplant another professional, nor shall he or she intervene or attempt to intervene in or in connection with professional work of

any kind which to his or her knowledge has already been entrusted to another professional.

7. – (1) A professional shall not knowingly undertake a commission from any person while any claim for compensation or damages or both by another professional previously employed by that person and whose employment has been terminated remains unsatisfied unless security for the due satisfaction of any award or judgment has been given.  
(2) The professional previously employed may report the matter to the Board if he or she has reasonable grounds for not being satisfied with the security, and the Board may forbid the first-mentioned professional in sub-paragraph (1) from proceeding with the professional work.
8. A professional shall not canvass or solicit professional employment or offer to make payment for the introduction of such employment.
9. A professional shall not be the medium of any payment made on behalf of his or her employer unless so requested by his or her employer and he or she, in connection with any professional work in which he or she is employed, shall not place any contract or order except with the authority of or on behalf of his or her employer.
10. A professional shall not take part in a competition involving the submission of any proposal and design for professional work unless the assessor to whom such proposal and design is to be submitted for adjudication is a person of acknowledged engineering or technical standing.
11. – (1) A professional who is engaged in the construction or in the design and construction of engineering or technical work or in the manufacture or in the design and manufacture of articles of commerce, whether on his or her own account or as a technical adviser or employee or a partner or director of a firm or company so engaged, shall not prepare or submit to a client or customer or prospective client or prospective customer a design for engineering or technical works or articles unless accompanied by an offer on behalf of himself or his or her firm or company to construct the work or supply the articles, and a proviso that if the design of the professional, the corporation of which he or she is a director or partnership of which he or she is a member is accepted, he or she shall be given the contract for the work or supply of the articles, with such variation (if any) as to design and with such arrangements as to remuneration as may be mutually agreed.  
(2) A professional shall not prepare or submit or offer to prepare or submit a design without informing the client or customer or prospective client or prospective customer as to the nature of his or her connection with the construction or manufacture of the work or articles in question.  
(3) Except at the request of the client or customer, a professional shall not offer, directly or indirectly, on behalf of himself or his or her firm or company, to design, or to design and construct, any engineering or technical work, the design of which to his or her knowledge has already been entrusted to another professional, who is acting as a consultant, unless with the approval of such professional.

**12.** A professional shall —

(a) exercise due diligence to ensure that there is no contravention of or failure to comply with any written law by any person in the carrying out of any project or works of which the professional is the consultant or engineer; and

(b) report to the appropriate authority any contravention of or failure to comply with any written law by any person in the carrying out of any project or works of which the professional is the consultant or engineer, if such contravention or failure comes to his or her knowledge.

**PART II**

**1.** – (1) A professional shall not use the advantage of a salaried position to compete unfairly with other professionals.

(2) He or she shall not accept any professional commission from persons other than his or her employers to an extent prejudicial to his or her salaried position or detrimental to established professional services or which would result in a conflict of interest.

(3) If permitted by his or her employer any professional commission from persons other than his or her employers shall be confined to consultation on phases of engineering or technology for which he or she has special qualifications not inherently available in usual professional practice, except that he or she shall not establish an office for the purpose of conducting such outside activities.

(4) He or she shall not use the influence of a salaried position to direct clients to another professional, or other engineering or technological firm in which he or she has a financial interest.

**2.** A professional shall not, for the purpose of obtaining any permit, licence or approval of any public authority, sign any plans or calculations which neither he or she nor any member of his or her staff under his or her supervision verified, checked or prepared.

By

IES Professional Registration Board

# ANNEX C: COMPETENCY STANDARDS

## Characteristics or Indicators of each Elements of Competency Standard

S/n	Descriptor	Elements	Characteristics or Indicators
(1)	Comprehend and apply universal knowledge	Comprehend and apply advanced knowledge of the widely-applied principles underpinning good practice	<ul style="list-style-type: none"> <li>• Pursuit of post-graduate study or further learning to broaden knowledge and apply new knowledge</li> <li>• Work from first principles to make reliable predictions of outcomes</li> <li>• Seek advice, where necessary, to supplement own knowledge and experience</li> <li>• Use evidence from best practice to improve effectiveness</li> </ul>
(2)	Comprehend and apply local knowledge	Comprehend and apply advanced knowledge of the widely-applied principles underpinning good practice specific to the jurisdiction of practice	<ul style="list-style-type: none"> <li>• Work done to broaden knowledge of local codes, standards and specifications</li> <li>• Ability to understand and effectively use knowledge of engineering principles for local-specific community, environmental, legal and industry practice</li> </ul>
(3)	Problem analysis	Define, investigate and analyse complex problems	<ul style="list-style-type: none"> <li>• Develop specification and procurement of new engineering products, processes and systems</li> <li>• Identify and define the scope of the problem</li> <li>• Investigate and analyse relevant information using quantitative and qualitative techniques</li> <li>• Test analysis for correctness of results</li> <li>• Conduct any necessary research and reach substantiated conclusions</li> </ul>

S/n	Descriptor	Elements	Characteristics or Indicators
(4)	Design and develop solutions	Design or develop solutions to complex problems considering a variety of perspectives and taking account of stakeholder views	<ul style="list-style-type: none"> <li>• Develop criteria for evaluating design solution</li> <li>• Identify needs, requirements, constraints and performance criteria</li> <li>• Develop concepts and recommendations that were tested against engineering principles</li> <li>• Evaluate options and selects solution that best matched needs, requirements and criteria</li> <li>• Plan and implement effective, efficient and practical systems or solutions</li> </ul>
(5)	Evaluation	Evaluate the outcomes and impacts of complex activities	<ul style="list-style-type: none"> <li>• Evaluate outcomes against original specifications</li> <li>• Learn from feedback on results to improve future design solutions and build best practice</li> <li>• Identify and manage risks through ‘elimination, minimisation and avoidance’ techniques</li> </ul>
(6)	Protection of society	Recognise the reasonably foreseeable economic, social, cultural and environmental effects of complex activities generally, and have regard to the need for sustainability; recognise that the protection of society is the highest priority	<ul style="list-style-type: none"> <li>• Develop and implement appropriate hazard identification and risk management systems to manage safety and hazards</li> <li>• Develop and implement environmental impact assessments, or environmental risk assessments</li> <li>• Consider and takes into account possible social, cultural and environmental impacts</li> <li>• Understand and facilitate stakeholder involvement in sustainable development</li> <li>• Recognises impact and long-term effects of engineering activities on the environment</li> </ul>

<b>S/n</b>	<b>Descriptor</b>	<b>Elements</b>	<b>Characteristics or Indicators</b>
(7)	Legal and regulatory	Meet all legal and regulatory requirements and protect public health and safety in the course of his or her activities	<ul style="list-style-type: none"> <li>• Demonstrate understanding and work within all relevant legislation and regulatory frameworks</li> </ul>
(8)	Ethics	Conduct his or her activities ethically	<ul style="list-style-type: none"> <li>• Demonstrate understanding of and comply with the rules of professional conduct of the IES</li> <li>• Act with integrity and honesty</li> </ul>
(9)	Manage engineering activities	Manage part or all of one or more complex activities	<ul style="list-style-type: none"> <li>• Organise and lead work teams, coordinating project activities</li> <li>• Work in cross-disciplinary team involving complex projects</li> <li>• Plan, schedule and organise projects to deliver specified outcomes</li> <li>• Apply appropriate quality assurance techniques</li> <li>• Manage resources, including personnel, finance and physical resource constraints</li> <li>• Manage conflicting demands and expectations</li> <li>• Apply continuous improvement through quality management</li> </ul>

S/n	Descriptor	Elements	Characteristics or Indicators
(10)	Communication and Collaboration	Communicate clearly with others in the course of his or her activities	<ul style="list-style-type: none"> <li>• Prepare and deliver presentations on strategic matters</li> <li>• Communicate using a range of media suitable to the audience and context</li> <li>• Treat people with respect</li> <li>• Develop empathy and use active listening skills when communicating with others</li> <li>• Operate effectively as a team member</li> </ul>
(11)	Continuing Professional Development and Lifelong learning	Undertake CPD activities sufficient to maintain and extend his or her competence	<ul style="list-style-type: none"> <li>• Maintain evidence of competence development</li> <li>• Demonstrate a commitment to extending and developing knowledge and skills</li> <li>• Participate in education, training, mentoring or other programmes contributing to professional development</li> <li>• Adapt and update knowledge base in the course of professional practice</li> </ul>
(12)	Judgement	<p>Recognize complexity and assess alternatives in light of competing requirements and incomplete knowledge.</p> <p>Exercise sound judgement in the course of his or her complex activities</p>	<ul style="list-style-type: none"> <li>• Demonstrate ability to identify and choose alternative options</li> <li>• and justify decisions</li> <li>• Peer's recognition of ability to exercise sound professional engineering judgement</li> </ul>

S/n	Descriptor	Elements	Characteristics or Indicators
(13)	Responsibility for decisions	Be responsible for making decisions on part or all of complex activities	<ul style="list-style-type: none"> <li>• Demonstrate understanding of responsibilities involved when making engineering decisions</li> <li>• Take accountability for outputs</li> <li>• Accept responsibility for engineering activities</li> </ul>

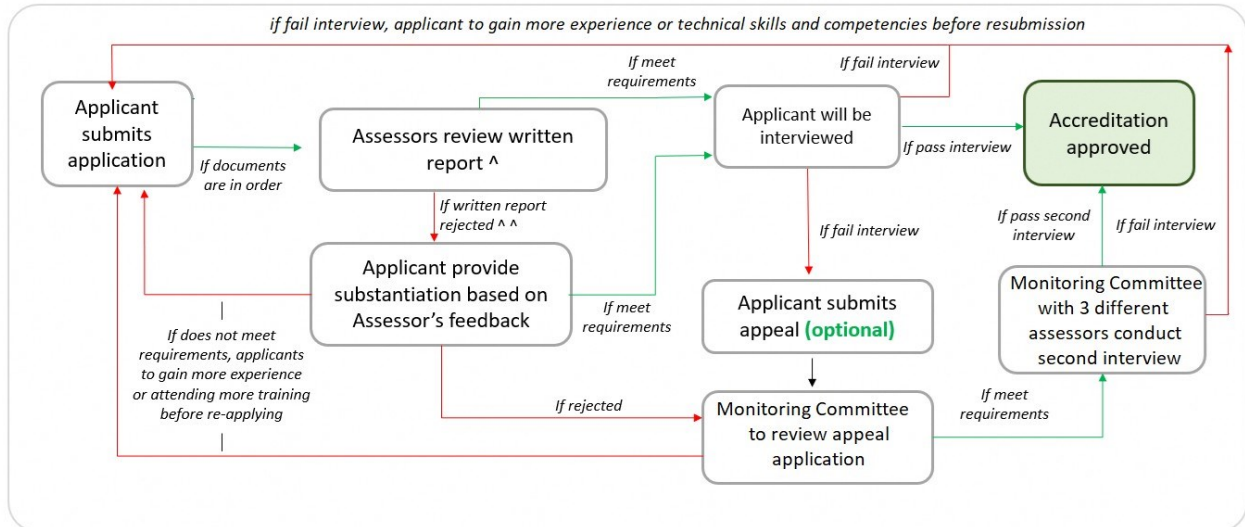
---

<sup>4</sup> Adapted from the International Engineering Alliance's "Graduate Attributes and Professional Competencies"

---

# ANNEX D: PROCESS FLOW CHART

## Process flow of APEC Engineer Under Standalone Track



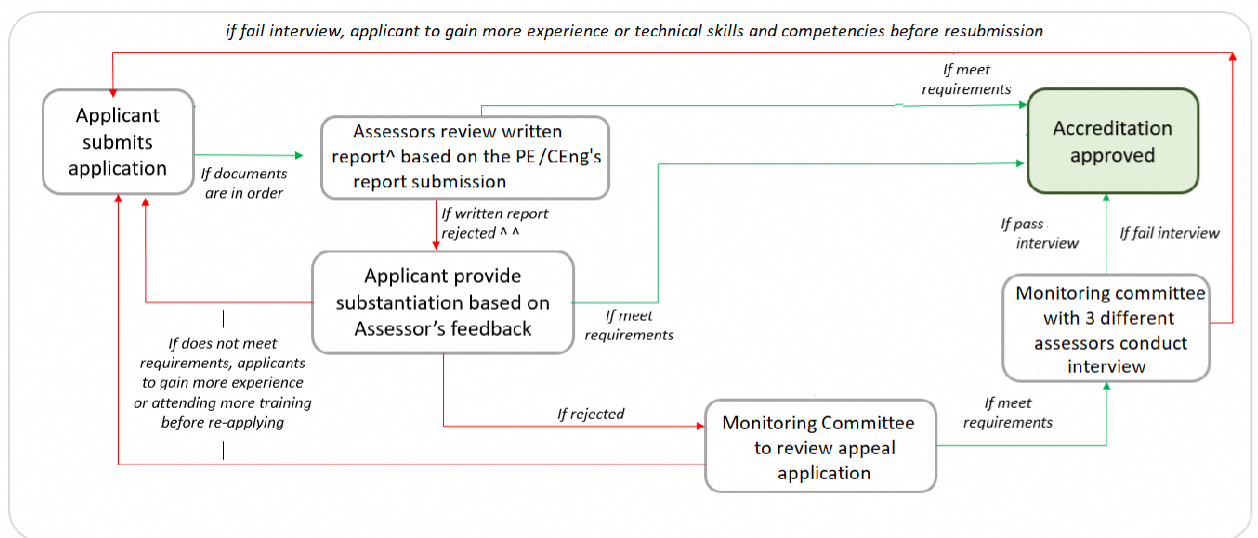
^ To illustrate applicant's experience, fulfilment of Key Tasks, Technical Skills & Competencies, and Critical Core Skills.

^^ Assessors will provide reasons for failed application

## APEC Engineer Application Process Under Standalone Track

Applicant	APEC Engineer Application	Secretariat to check for document completeness, qualification, year of experiences & payment record.
IES Secretariat	Processing of Application	
IES Secretariat	Professional Report	Also screen on Professional Report in the application form & email to APEC Chair for reviewing
APEC Engineer Monitoring Committee Singapore (AEMCS)	AEMCS to review Application	Members with knowledge in same field of engineering
Assessment Panel	Professional Review Interview (Virtual or Physical)	<b>(For Standalone track)</b> Professional Assessment based on Engineering Competencies
APEC Engineer Monitoring Committee Singapore (AEMCS)	Application Approval	Based on recommendations by Assessment Panel
Secretariat	Issue APEC Cert	

## Process flow of APEC Engineer Under PE/CEng Track

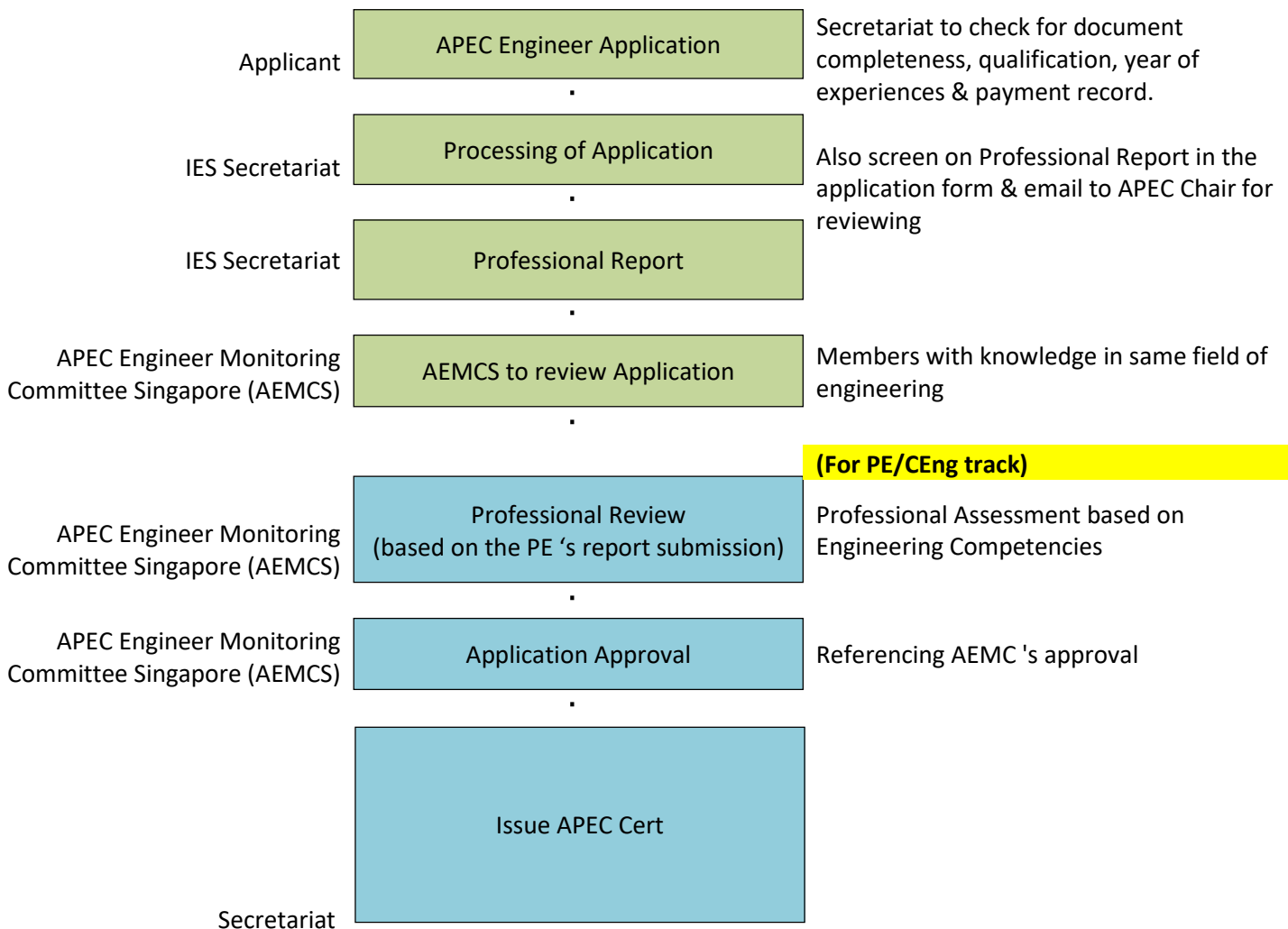


^ To illustrate applicant's experience, fulfilment of Key Tasks, Technical Skills & Competencies, and Critical Core Skills.

^^ Assessors will provide reasons for failed application

Applicants without full required documents may subject to interview.

## APEC Engineer Application Process Under PE/CEng track



# ANNEX E: APEC APPLICATION PROCESSING CHECKLIST

**Name:**

**Discipline:**

**Date received:**

**Checklist**

S/no	Item		Remarks
1	<b>Application form</b> Acknowledge receipt of the application  Indication of his position in the company Is the Application form duly filled up, endorsed, and completed with signatures with both applicant and superior on application form?	Yes / No  Yes / No  Yes / No	
2	<b>Affiliation</b> Is Applicant an IES Member?	Yes / No	
3	<b>Applicant Route</b>  Is Applicant a current CEng from IES or PE from PEB and discipline/branch of engineering	Yes / No	<b>If Yes, Process Via CEng or PE Track. Otherwise, process via Normal route.</b>
4	<b>Qualification</b> Does Applicant possess Washington Accord? Does Applicant possess Equivalence Qualification?	Yes / No Yes / No	
5	<b>Years of Experience</b> Does Applicant have 7 years or more of Practical experience? Does Applicant provide a minimum 2 years of significant Engineering work	Yes / No Yes / No Yes / No	
6	<b>Others</b> Monitor Payment Method – amount and manner of payment Enter records into this processing checklist and into application form Enter details of the information from checklist into Masterfile	Yes / No  Yes / No Yes / No	

# ANNEX F: APEC APPLICATION FORM FOR PE/CENG ROUTE

	<b>APEC ENGINEER REGISTER SINGAPORE</b>  <b>APPLICATION FOR REGISTRATION</b>	<p><u>To be emailed to:</u> <a href="mailto:sherly.chong@iesnetors.sg">sherly.chong@iesnetors.sg</a></p> <p>Secretary, APEC Engineer Monitoring Committee The Institution of Engineers, Singapore 70 Bukit Tinggi Road Singapore 289758 Tel: 6469 5000 Fax: 6467 1108</p>
<b>1. APPLICATION TYPE (Please tick accordingly)</b>		
<input type="checkbox"/> APEC	Application Fee (One-time, Non-refundable) : S\$100*.00 Annual Subscription fee : S\$100*.00 ( to be paid upon approval of new APEC Engineer application )	Total Fee payable : S\$200*.00
<p>* Fee is excluding prevailing GST.          Online payment of S\$100*.00 for application fee ONLY via: <a href="https://www.iotform.com/63141562122444">https://www.iotform.com/63141562122444</a></p>		
<b>2. PERSONAL PARTICULARS</b>		
Surname/Family Name		
Given Name or First Name		
Title	<input type="checkbox"/> Er. <input type="checkbox"/> Prof <input type="checkbox"/> Dr <input type="checkbox"/> Mr <input type="checkbox"/> Mrs <input type="checkbox"/> Ms	
Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female	
Date of Birth (dd/mm/yyyy)		
NRIC No. / Passport No.		
<b>3. CONTACT DETAILS</b>		
Name of Employer		
Current Job Title		
Business Address		
Postal Code		
Phone	Mobile phone	Fax
Email		
Home Address		
Street		
Postal Code		

				Verifier's Initials & Date
				Verifier's Initials & Date
Total number of months				

Notes:

- a) The person verifying your summary and claims of competency must be an experienced engineer familiar with work described in your report.
- b) Applicants may submit supplementary sheets in the above format if necessary. Please submit at least 2 years detailed working experience in report format.

8. PARTICULARS OF VERIFYING ENGINEERS			
Name of Verifying Engineer	PE/CEng Registration Number	Phone Number	Initials & Date

9. DECLARATION BY APPLICANT


All statements on this application form are true and correct and I have made claims of competency in good faith. I confirm that I have read and understand. I agree that I will observe the Institution's Code of Ethics and the Professional Engineer (Code of Professional Ethics and Conduct) rules and all applicable codes of professional conduct and ethics established in jurisdictions where I practice and will be subject to the Institution's Disciplinary Regulations.

I understand that I have an obligation to inform the APEC Monitoring Committee of any matter that may affect my fitness for registration. I consent to my business contact details being published in any form associated with my registration as an APEC Engineer.

Signature \_\_\_\_\_

Date \_\_\_\_\_

# ANNEX G: APEC APPLICATION ASSESSMENT FORM

<b>CEng(SG) Interview Checklist</b>		
Applicant's Name:		
Applicant's NRIC (Last 3 numbers & 1 character):		
Interview Date (mm/dd/yyyy):		
Sector:		
PART 1 – SECTOR BASED SECTION	<< ENTER SCORE >> <u>1 to 5 (Highest)</u>	Remarks / Comments for applicant
QUESTION 1: Demonstrated the ability to apply advanced and widely-adopted engineering principles to practical situations in sector/domain areas specific to the jurisdiction of practice.	<div style="border: 1px solid black; width: 100%; height: 100%;"></div>	
QUESTION 2: Demonstrated the ability to define, investigate and analyze complex problems using data and information technologies where applicable; design or develop solutions to complex problems considering a variety of perspectives and taking account of stakeholder views; and evaluate the outcomes and impacts of these complex activities.	<div style="border: 1px solid black; width: 100%; height: 100%;"></div>	
QUESTION 3: Demonstrated the ability to manage and be responsible for making decisions on a part of, or all of, one or more complex activities; recognize complexity and assess alternatives in light of competing requirements and incomplete knowledge; and exercise sound judgment.	<div style="border: 1px solid black; width: 100%; height: 100%;"></div>	

**PART TWO – GENERAL AND GENERIC SECTION**

QUESTION 4: Demonstrated the ability to recognize and handle the wider implications of work as an engineer to achieve sustainable outcomes through taking into account foreseeable social and environmental effects of complex activities; recognizing the need to protect public health and safety; and meeting ethical, legal, regulatory and cultural requirements in the course of the complex activities.

QUESTION 5: Demonstrated the ability to communicate and collaborate using multiple media clearly and inclusively with a broad range of stakeholders, interpersonal and leadership in work activities.

QUESTION 6: Have shown high standards of professional conduct and personal commitment to maintain and extend competences and enhance the ability to adapt to emerging technologies and the ever-changing nature of work.

**Total Score**

**0**

**Additional Assessment for APEC Engineer**

Did the candidate demonstrate at least a minimum of 7 years of post-graduate experience?

Did the candidate demonstrate at least 2 years in responsible charge of significant engineering work?

**Overall Recommendation for (Engineer) Registration:**  
 (Note: Passing Score of > 22 points & minimum of 3 points per question)

**Not Recommended**

<Comments for Not Recommended applicant>

Name of Lead Assessor:

Name of Assessor 1:

Name of Assessor 2:




Signature of Lead Assessor:

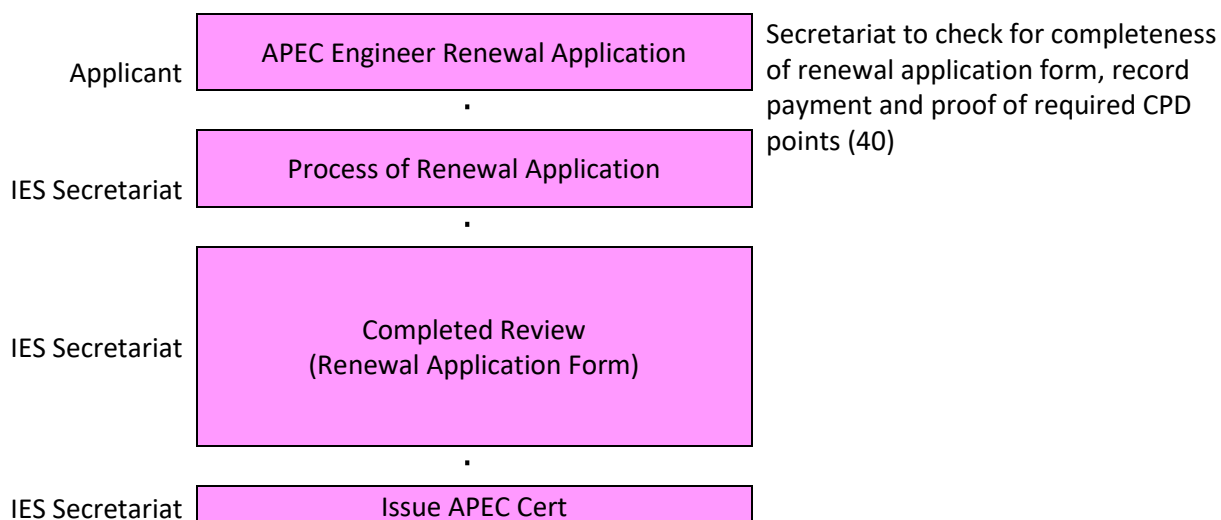
## Assessment Criteria

Points	Description	Examples
5	Very Strong Evidence	Applicant is <b>able</b> to describe how he made use of his engineering knowledge, engineering principles and experiences to resolve very difficult situations or solve a very difficult problem.
4	Strong Evidence	Applicant is <b>able</b> to describe how he made use of his engineering knowledge, engineering principles and experiences to resolve difficult situations or solve a difficult problem.
3	Sufficient Evidence	Applicant is <b>able</b> to describe how he made use of his engineering knowledge, engineering principles and experiences to resolve moderate situations or solve a moderate problem.
2	Lacking Evidence	Applicant is <b>unable</b> to describe how he made use of his engineering knowledge, engineering principles and experiences to resolve difficult situations or solve a difficult problem.
1	Insufficient Evidence	Applicant is <b>unable</b> to describe how he made use of his engineering knowledge, engineering principles and experiences to resolve very difficult situations or solve a very difficult problem.

# ANNEX H: APEC Engineer Renewal Process

## Renewal of APEC Engineer Registration



Registration as an APEC Engineer indicates that his/her competence and commitment to professionalism have been assessed by his/her peers and demonstrates that his/her competence may be compared with standards applicable internationally. It offers his/her the chance to join with other members with common interest in advancing the quality of the engineering industry and most importantly be connected. Besides, for the year ahead, IES will plan for courses, talks or seminars to help keep APEC Engineers abreast of latest industry developments in the APEC region.



## Details of CPD

“Contact hour”	refers to an attendance or involvement lasting one clock hour of not less than 50 minutes;
“Professional development units” or “PDU”	refers to the unit of measure for effort in continuing professional development program;
“Renewal qualifying period”	refers to a 12-month period immediately preceding the application for renewal of registration;
“Structured activity”	refers to a course or activity that is accredited by the PEB or the IES or which involves active participation;
“Unstructured activity”	refers to an activity that involves self-directed learning, reading, discussion or participation.

# ANNEX I: APEC Engineer Renewal Application Form

	<p>APEC ENGINEER REGISTRY</p> <p><b>RENEWAL APPLICATION OF APEC ENGINEER REGISTRATION</b></p>	 <p>Asia-Pacific Economic Cooperation</p>	
<b>Renewal Application of APEC Engineer Registration</b>			
<input type="checkbox"/> I would like to apply for renewal of registration of my APEC Engineer Registration			
Title		Name	
APEC Engineers Registration No			
Branch of Engineering			
Company Name			
Position/Designation			
Office Address			
Home Address			
Mobile Phone No		Office Phone No.	
Preferred Email address			
Alternate Email address			
Please select preferred Mailing Address: <input type="checkbox"/> Home or <input type="checkbox"/> Office			
Enclosed with this Form			
<input type="checkbox"/>	1.	List of CPD activities attended during the qualifying period for the renewal of APEC Practicing Certificate for year of renewal	
<input type="checkbox"/>	2.	Professional Certificates (if any) for year of renewal	
Payment			
<input type="checkbox"/>	1.	Credit Card Payment	
<input type="checkbox"/>	2.	A cheque (Cheque No. _____) for annual fee of \$108 (Incl.8% GST) made payable to "Engineers Singapore Pte Ltd"	
Declaration			
<input type="checkbox"/>	<i>I hereby agree and consent that IES ("THE INSTITUTION OF ENGINEERS, SINGAPORE") may collect, use, disclose and process my personal information set out in my application form, or otherwise provided by me or possessed by IES, for one or more of the purposes as stated in IES Personal Data Protection Terms and Conditions <a href="http://www.ies.org.sg/pdpa">www.ies.org.sg/pdpa</a>.</i>		
Signature:		Date:	
APEC Renewal Form For 2022			1