



新加坡工程专家协会

Singapore Institute of Engineering Technologists

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(Established in 1980)[ROS 217/80 TAP]

SIET – a National Professional Body for Engineering Technologists & Engineering Technicians with Global Network.

SIET – a founder member of **World Federation of Technology Organizations (WFTO)** [website : www.wfto.org]

About SIET (2010 edition)

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Part 1 - About SIET

The Institute originated from the **Singapore Institute of Engineering Technicians** founded in 1980 to cater for the interests of Polytechnic and VITB (now ITE) engineering graduates. Its name was changed to the **Singapore Institute of Engineering Technologists** in 1986.

SIET is governed by an elected **Executive Council** and supported by **four working committees**: Membership & Qualifications; Education & Training; Publications; Social Functions and the **SIET – Accreditation Board**.

Some important milestones of SIET are:

Year	Important Milestone
1980	Establishment of SIET
1981	SIET Yearbook launched (Last published in 1999) SIET Quarterly Journals launched [Last issue : December 1999] SIET – Advanced Diploma in Civil Engineering (incorporating CEI Part 2 syllabuses).
1982	SIET Constitution was amended to enable the Institute to conduct its own Professional Examinations .
1984	SIET was affiliated to the Institute of Engineers & Technicians, UK [Founded 1948; Incorporated 1967] . Suitably qualified members can be registered as Eng Tech and IEng of UK. [IET-UK later merged with IIE-UK; IIE-UK later merged with IEE-UK to form the present Institution of Engineering & Technology, UK.][website : www.theiet.org]
1985	SIET adopted the Society of Engineers, UK as its own qualifying examinations: [Established 1854; Incorporated 1910] SOE Part 1 è AMSIET SOE Part 2 è MSIET SOE Part 3 è FSIET Members who have completed all the three part examinations and with the required professional experience can apply for registration as P Eng(UK) with the Society of Professional Engineers, UK. [website : www.professionalengineers-uk.org]
1986	SIET changed its name from ' Technicians ' to ' Technologists '. SIET supported the Master of Business Administration (MBA) program awarded by the Oklahoma City University, USA in Singapore.
1988	SIET was elected as a full member of the Singapore Professional Centre . SIET officially adopted The Engineering Council, UK Examinations as its alternate Qualifying Examinations: EC Part 1 è MSIET EC Part 2 è FSIET

1989	SIET introduced its first Graduate Diploma in Management for Technology (GDMT) program. Tuition classes leading to UK - EC Part 2 Exam began.
1990	Signed MOU with the Technological Association of Malaysia (TAM) . [website : www.tam.com.my]
1991	SIET was affiliated to the Society of Engineers, UK [Founded 1854; Incorporated 1967] [SOE-UK later merged with IIE-UK; IIE-UK later merged with IEE-UK to form the present Institution of Engineering & Technology, UK.][website : www.theiet.org]
1994	SIET – General Certificate in Engineering launched. SIET – Diploma in Engineering Management launched.
1995	Signed MOU with the Applied Science Technologists and Technicians of British Columbia, Canada . [website : www.asttbc.ca]
1996	Signed MOU with the Institute of Professional Engineering Technologists, South Africa . [website : www.ipet.co.za] Signed MOU with the Institution of Engineers, Australia . [website : www.engineersaustralia.org.au]
1997	Founder Member of the World Federation of Technology Organizations (WFTO) . [website : www.wfto.org] Signed MOU with the University of Southern Queensland, Australia . - Polytechnic Diploma holders in Engineering disciplines can upgrade themselves to ‘Professional Engineer’ level via the Bachelor of Engineering program by distance learning . [website : www.usq.edu.au]
1999	Signed MOU with the University of Newcastle, Australia . - Polytechnic Diploma holders in Built Environment disciplines can upgrade themselves to ‘Fellow (FSIET)’ grade via the Bachelor of Construction Management program by distance learning . [website : www.newcastle.edu.au]
2005	Re-birth of SIET.
2006	SIET Yearbook re-launched.
2008	SIET – Accreditation Board launched. SIET – Approved Training Centre Scheme introduced.
2009	SIET Certification Scheme introduced: AMSIET è Certified Engineering Associate (CertEA)* MSIET è Certified Engineering Technologist (CertET)* FSIET è Certified Technical Specialist (CertTS)* [Must sit and pass the SIET – Test of Professional Competence unless exempted, e.g. BCA-RE can be registered as SIET – CertTS; BCA – RTO can be registered as SIET – CertET without further exam.]
2010	SIET – Professional Examinations: Level 1 – Associate Membership Exam (8 subjects) [≈ ITE – Higher Nitec standard; UK – OND standard] Level 2 – Membership Exam (8 subjects) [≈ Poly Diploma standard ; UK – HND standard]

	<p>Level 3 – Fellowship Exam (6 subjects) [≈ Poly Advanced Diploma standard; UK – B Eng standard] [Formatted according to the USA-NCEES : FE/PE Exams; website : www.ncees.org]</p>
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Part 2 - SIET Membership Structure and Admission Criteria

Membership Grade	Admission Criteria
Fellow (FSIET)	<ul style="list-style-type: none"> ○ Age : ≥ 30 years ○ Qualification: Polytechnic Advanced Diploma in any engineering discipline or B Eng from NTU/NUS or City & Guilds Master Professional Diploma in Engineering or its equivalent, e.g. BCA – Registered RE [website: www.bca.gov.sg]. ○ Experience: ≥ 5 years in a senior position of responsibility.
Member (MSIET)	<ul style="list-style-type: none"> ○ Age : ≥ 25 years ○ Qualification: Polytechnic Diploma in any engineering discipline or City & Guild- HPDip in Engineering or its equivalent, e.g. BCA- Registered Technical Officer. [website: http://www.cityandguilds.com/Engineering.html] ○ Experience: ≥ 5 years in engineering or related practice.
Associate Member (AMSIET)	<ul style="list-style-type: none"> ○ Age : ≥ 23 years ○ Qualification: ITE – Higher Nitec in any engineering discipline or City & Guild - Technician Diploma in Engineering or its equivalent. ○ Experience: ≥ 3 years in engineering.
Associate (Assoc. SIET)	<ul style="list-style-type: none"> ○ Persons qualified in some other science, art or profession allied to engineering.

Part 3 - SIET Professional Examinations [Engineering: Civil*]

- **Level 1 – Associate Membership (Common)(8 subjects)**
- **Level 2 – Membership (8 subjects)**
- **Level 3 – Fellowship (6 subjects)**

(A) Background

SIET Membership Examination (Civil)* and Fellowship Examination (Civil)* are modeled according to the **USA – National Council of Examiners for Engineering and Surveying** – Fundamentals of Engineering (FE) Examination and Principles and Practice of Engineering (PE) Examination. [website : www.ncees.org] and the revised **Professional Engineers Board Singapore – Fundamentals of Engineering Examination (FEE)** [Website : www.peb.gov.sg].

(B) Objectives

1. To provide an **alternative pathway** for those school leavers or working adults to become a qualified Engineering Technologists.
2. To provide the participants with knowledge of fundamental engineering subjects in **Civil Engineering***.
3. To train the participant's ability to apply his knowledge and experience in engineering practice, and his knowledge of the rules and regulations regulating the practice of professional engineering in the branch of Civil Engineering.
4. Be adequately prepared to sit for **SIET – Test of Professional Competency** leading to **SIET – Certified Engineering Technologist (CertET)** and **SIET – Certified Technical Specialist (CertTS)**.

(C) Structure

Level 1 - Associate Membership Examination (Common) (8 subjects)

[According to Clause 4(f) (iii) of SIET Constitution]

- AM101 - Engineering and Commercial functions in business.
- AM102 - Engineering systems.
- AM103 - Engineering processes.
- AM104 - Engineering materials.
- AM105 - Design development.
- AM106 - Engineering in society and the environment.
- AM107 - Science in engineering.
- AM108 - Mathematics for Engineering.

Level 2 – SIET Membership Examination (Civil)*(8 subjects)

[According to Clause 4(e)(iii) of SIET Constitution]

- CE101 - Mechanics of Materials
- CE102 - Structural Mechanics
- CE103 - Structural Analysis
- CE104 - Soil Mechanics
- CE105 - Fluid Mechanics
- CE106 - Engineering Mathematics
- CE107 - Civil Engineering Construction
- CE108 - Construction Management OR
- CE109 - Engineering Surveying@

[@ SIET recognizes the SISV- Engineering Surveying course conducted by **Singapore Institute of Surveyors & Valuers (SISV)** as equivalent to SIET – CE109 for exemption. Website : www.sisv.org.sg]

GE300 - ***The Engineer in Society***
(incorporating Engineering Ethics)*

Level 3 – SIET Fellowship Examination (Civil)*(6 subjects)

[According to Clause 4(d) (ii) of SIET Constitution]

- CE201 - Reinforced and Pre-stressed Concrete Structures
- CE202 - Steel and Composite Structures
- CE203 - Geotechnical Engineering
- CE204 - Transportation
- CE205 - Hydraulics and Hydrology
- CE206 - Environmental Engineering

GE300 - ***The Engineer in Society***
(incorporating Engineering Ethics)*

[Optional: For those who are preparing for the SIET – Test of Professional Competency for Registration as CertET or CertTS]*

[*Examinations in other Engineering Disciplines, e.g. Electrical Engineering, Mechanical Engineering etc will be introduced at a later stage when the demand arises.]

Part 4 - SIET Certification Scheme

Suitably qualified members of SIET can apply for registration as:

- Ø Certified Engineering Associate (**CertEA**) for AMSIET.
- Ø Certified Engineering Technologist (**CertET**) for MSIET.
- Ø Certified Technical Specialist (**CertTS**) for FSIET.

In order to maintain the high standard of membership and registration, we need all prospective members to complete an application form and write a professional review report detailing what they have been doing in their role in engineering. All applicants are assessed by a Committee of members and via an interview and a written test on 'Engineering Ethics' for registration as CertET and CertTS.

*All members registered under SIET Certification Scheme are required to attend **at least 20 PDU units** or its equivalent over a period of three consecutive years to renew its registration. [1 PDU = 3 hours of CPD]*

Part 5 - SIET Global Networks

SIET is a founder member of the **World Federation of Technology Organizations** (WFTO). The World Federation of Technology Organizations (WFTO) was officially launched **June 13, 1995** at the 3rd International Symposium on Technology Education & Training - Innovations 2020 - held in Vancouver, Canada. The creation of WFTO came about as a result of recommendations from the first two international symposia calling for global unity of those involved in technology education, technical professional associations and their partners in industry, government and non-governmental organizations.

SIET also has signed MOUs with overseas professional bodies including:

- . **Malaysia:** Technological Association of Malaysia.
- . **South Africa:** Institute of Professional Engineering Technologists; Design, Technology and Management Society International.
- . **Canada:** Applied Science Technologists & Technicians of British Columbia.

Part 6 - International Engineering Agreements

[Source: <http://www.washingtonaccord.org/>]

Introduction

There are six international agreements governing mutual recognition of engineering qualifications and professional competence. In each of these agreements countries/economies who wish to participate may apply for membership, and if accepted become members or signatories to the agreement. In broad principle, each country/economy must meet its own costs, and the body making application must verify that it is the appropriate representative body for that country/economy.

Agreements covering tertiary qualifications in engineering

There are three agreements covering mutual recognition in respect of tertiary-level qualifications in engineering:

[The Washington Accord](#) signed in 1989 was the first - it recognizes substantial equivalence in the accreditation of qualifications in professional engineering, normally of four years duration.

[The Sydney Accord](#) commenced in 2001 and recognizes substantial equivalence in the accreditation of qualifications in engineering technology, normally of three years duration.

[The Dublin Accord](#) is an agreement for substantial equivalence in the accreditation of tertiary qualifications in technician engineering, normally of two years duration. It commenced in 2002.

Agreements covering competence standards for practicing engineers

The other three agreements cover recognition of equivalence at the practicing engineer level i.e. it is individual people, not qualifications that are seen to meet the benchmark standard. The concept of these agreements is that a person recognized in one country as reaching the agreed international standard of

competence should only be minimally assessed (primarily for local knowledge) prior to obtaining registration in another country that is party to the agreement.

The oldest such agreement is the [*APEC Engineer agreement*](#) which commenced in 1999. This has Government support in the participating APEC economies. The representative organization in each economy creates a "register" of those engineers wishing to be recognized as meeting the generic international standard. Other economies should give credit when such an engineer seeks to have his or her competence recognized. The Agreement is largely administered between engineering bodies, but there can be Government representation and substantive changes need to be signed off at governmental APEC Agreement level.

The [*Engineers Mobility Forum agreement*](#) commenced in 2001. It operates the same competence standard as the APEC Engineer agreement but any country/economy may join. The parties to the agreement are largely engineering bodies. There are intentions to draw EMF and APEC closer together.

The [*Engineering Technologist Mobility Forum agreement*](#) was signed by participating economies/countries in 2003. The parties to the Agreement have agreed to commence establishing a mutual recognition scheme for engineering technologists.

Part 7 - SIET Code of Ethics

Key Provisions in the SIET Byelaws

Clause (8) – Conduct of Members

- (a) All members of the Institute are required to order their conduct to uphold the dignity, standing and reputation of the Institute. The Executive Council may make, amend or rescind Rules to be observed by members with regard to their conduct in engineering matters relevant to their positions as members of the Institute.
- (b) If a member be convicted of any felony or criminal offence or act in a manner which renders him unfit to be a member, the Executive Council shall have the right to remove his name from the Register thus expelling him from the Institute.

Part 8 - SIET Rules and Guidelines for Continuing Professional Development (CPD)

[Approved by Council on 14 November 2009]

Definition of CPD

Continuing Professional Development (CPD) is defined as the systematic maintenance, improvement and broadening of knowledge and skill, and the development of personal qualities necessary for the execution of professional and technical duties throughout the practitioner's working life.

Each SIET - PD unit (PDU) is defined as equal to 3- hour of 'CPD activities' or its equivalent.

Requirements

Every *practicing* corporate members (**MSIET, CertTS and FSIET, CertTS**) must complete 20 PDUs in every consecutive period of 3 years.

To qualify as PDU, the CPD activities must be related to:

- . Some art of the theory and practice of engineering and technology; or
- . Other technical topics related to member's current or potential occupation; or
- . Personal or business skills designed to increase a member's management or business efficiency.

CPD Activities

- (a) Attendance or delivery of papers in talk, CPD lecture, seminar, conference, workshop, forum, in-house training session, etc. Site visits, if relevant, are included.
- (b) Discussions, meetings, etc on technical topics. These should have some formalized structure such as a paper, video or tape, a competent person in charge of the proceedings, the subject matter announced in advance, and minutes of meetings to be kept etc.
- (c) Full-time or part-time formal courses organized by colleges, polytechnics, universities, professional bodies, recognized course-providers and training institutes. A course of study leading to an additional higher qualification, e.g. B Eng, M Sc(Eng), M Sc(IT), relevant to work and career development is recognized as a CPD event.
- (d) Distance-learning or correspondence courses, supervised study packages, being a program of reading or recorded lectures.
- (e) Research work carried out in response to a work related problem for a client or leading to understanding of a new and relevant subject, etc may be included.
- (f) Authorship of published works. These works normally should consist of technical or academic or academic articles published in a professional journal or other published form.