

**THE HONG KONG INSTITUTION OF ENGINEERS**

**SUBMISSION FOR  
ACCREDITATION OR REACCREDITATION OF  
AN ENGINEERING DEGREE PROGRAMME  
TO MEET THE HKIE'S ACADEMIC REQUIREMENTS FOR  
CORPORATE MEMBERSHIP AT THE WASHINGTON ACCORD LEVEL**

**Submitted by**

\_\_\_\_\_  
**Name of University/Institution**

Faculty:

Department(s):

Programmes(s):

Date of Visit:

Signed By:

\_\_\_\_\_  
Dean/Head of Department

Date \_\_\_\_\_

9/F Island Beverley  
1 Great George Street  
Causeway Bay  
Hong Kong  
Tel: 2895 4446  
Fax: 2577 7791

**GUIDANCE NOTES**  
**FOR**  
**COMPLETION OF THE QUESTIONNAIRE**

This questionnaire is designed to assist academic departments in the preparation of their submission for a professional accreditation exercise and the visiting teams in the assimilation of the information required. The information requested is as set out below and references the HKIE's Professional Accreditation Handbook - Engineering Degrees. It is strongly recommended that this handbook be studied carefully before completion of the questionnaire.

**Contents**

The questionnaire is set out as follows:

- Part 1: General information related to the university/institution
- Part 2: General information related to the department
- Part 3: General information related to the engineering programme - general
- Part 4: Information related to the engineering programme – criteria specific

Part 2 is required for each department and Part 3 and Part 4 should be completed for each programme for which accreditation was requested.

To avoid duplication of information and effort, provide information only once and thereafter clearly state under which heading it is to be found.

**Completion**

The questionnaire is provided in soft copies. Please enter the response after the description of information required in each clause and complete the tables.

Please do **not** change the wording, sequence or format of the sections, clauses, headings or tables.

Six copies of the submission should be sent to the HKIE in hard copy and in CD ROMs at least six weeks before the visit. Major attachments should be placed at the end of the appropriate section of the completed questionnaire.

Two copies of the latest edition of the calendar should also be included with the questionnaire.

## **PART 1**

### **GENERAL INFORMATION**

#### **RELATED TO THE UNIVERSITY/INSTITUTION**

##### **1.1 VICE CHANCELLOR, PRESIDENT OR DIRECTOR**

Title:

Name:

##### **1.2 DEAN**

Name:

Date of appointment:

##### **1.3 STRUCTURE OF THE UNIVERSITY/INSTITUTION**

Provide details of the organisational structure of the university/institution including its major academic and administrative components. An organisational chart may be attached if appropriate.

##### **1.4 FUNDING**

Describe the funding arrangements for the university/institution.

## **PART 2**

### **INFORMATION RELATED**

#### **TO THE ENGINEERING DEPARTMENT**

Note: A copy of this section should be completed and submitted for each department hosting a programme being accredited.

##### **2.1 STRUCTURE OF THE DEPARTMENT HOSTING THE PROGRAMME**

Provide details of the major organisational structure of the Department including its major academic administrative components. An organisational chart may be attached if appropriate.

## 2.2 ADMINISTRATIVE RESPONSIBILITIES

Describe the authority of the Dean, Head of Department and others within the Department who hold the ultimate responsibility for the programme(s) to be accredited.

## 2.3 OTHER DEPARTMENTS

Provide details and describe the relationship with other Departments that provide courses.

# PART 3

## INFORMATION RELATED TO THE ENGINEERING PROGRAMME - GENERAL

**Note:** A copy of this section should be completed and submitted for each programme being accredited.

### 3.1 TITLE OF THE PROGRAMME

Please use the name as specified in the calendar.

### 3.2 PROGRAMME STRUCTURE

(Full time / Part time / Sandwich)

Other (please specify):

### 3.3 STARTING DATE AND DATE OF LAST MAJOR REVISION

Date of first intake of students:

Date of last major revision:

Date the HKIE notified of revision:

### 3.4 **OTHER INFORMATION**

Please provide other information which is considered relevant to the accreditation exercise.

### 3.5 **FUTURE PLANS**

Provide details for the future plans and budget for the programme.

### 3.6 **PREVIOUS ACCREDITATION/VALIDATION RECORD**

Date on which last professional accreditation exercise took place:

Outcome of the exercise:

Please provide a copy of the report and decision letter of the last accreditation exercise.

### 3.7 **AMENDMENTS TO THE PROGRAMME**

Please provide details of any changes made to the programme since the last professional accreditation exercise.

## **PART 4**

### **INFORMATION RELATED TO THE**

### **ENGINEERING PROGRAMME – CRITERIA SPECIFIC**

Note: A copy of this section should be completed and submitted for each programme being accredited.

### 4.1 **AIMS AND OBJECTIVES**

Provide details of the programme educational objectives and their relationship to the university/institution, college, department and programme mission statements. Provide details of the following:

- The applicable institutional, college, departmental, and programme Mission Statements and documents where they are published.
- The Programme Educational Objectives and state where these are published.
- How the Programme Educational Objectives are consistent with the Mission of the University/Institution, in the form of a matrix below.

**RELATIONSHIP OF PROGRAMME OBJECTIVES TO UNIVERSITY/ INSTITUTION MISSION**

PROGRAMME OBJECTIVES	UNIVERSITY/INSTITUTION MISSION ELEMENTS						
	1	2	3	4	5		
1							
2							
3							
4							
5							
6							

\* Please mark “X” to the appropriate boxes in the above matrix to indicate their relationship.

- The Programme outcomes that describe what students are expected to know and to do by the time of graduation. These must include (Note 1):
  - an ability to apply knowledge of mathematics, science, and engineering appropriate to the degree discipline
  - an ability to design and conduct experiments, as well as to analyse and interpret data
  - an ability to design a system, component or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
  - an ability to function on multi-disciplinary teams
  - an ability to identify, formulate and solve engineering problems
  - an ability to understand professional and ethical responsibility
  - an ability to communicate effectively
  - an ability to understand the impact of engineering solutions in a global and societal context, especially the importance of health, safety and environmental considerations to both workers and the general public
  - an ability to stay abreast of contemporary issues
  - an ability to recognise the need for, and to engage in life-long learning
  - an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice appropriate to the degree discipline

- (l) an ability to use the computer/IT tools relevant to the discipline along with an understanding of their processes and limitations

Note 1: The graduate attributes are reproduced from the HKIE accreditation criteria for engineering degrees. The interpretation of these graduate attributes should be consistent with the requirements of the Washington Accord and a copy of these attributes is enclosed at the end of this submission format.

If the programme under consideration has different set of outcomes than the above, please present

- (i) the list of programme outcomes
- (ii) the matching between these outcomes to the HKIE required outcomes

- Present the relationship between the programme educational objectives and programme outcomes in the form of a matrix below.

**RELATIONSHIP OF PROGRAMME OUTCOMES TO PROGRAMME OBJECTIVES**

PROGRAMME OUTCOMES	PROGRAMME OBJECTIVES						
	1	2	3	4	5		
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

\* Please mark “X” to the appropriate boxes in the above matrix to indicate their relationship.

Present the measurement dimension of each programme outcome

- (1)
- (2)
- (3) .....





4.3.2a Curriculum Details

Year \_\_\_\_\_

Course/Module/Subject (Indicate core subject and options)	Timetabled work in hours per week			No of teaching weeks	Total hours	Total credits	Assessment Components and their weightings	Faculty member responsible for the course/module/subject
		Tut	Pract					
Lect								
TOTAL:								



#### 4.3.2c Design Elements

Please provide details of the courses/modules/subjects in the programme which exhibit elements of engineering design.

Course/Module/Subject Title	Design content in course work	Design Project(s)	Design content in Laboratories

Please use a " X" to indicate the presence of the specific elements in the course/module/subject.

#### 4.3.2d Projects

Please provide details of the use of project work within the programme.

Outline the arrangements for project allocation in final year.

Please make available for the Visiting Team examples of projects representing the range of topics covered and the marking, including details showing how the final project mark was achieved.

Please provide a list of project titles and marks (or grades) in the table below **for the most recent year available.**

<b>Title</b>	<b>Supervisor</b>	<b>Student</b>	<b>Mark/Grade</b>

#### 4.3.2e Practical Training

Please describe the form of provision made for the practical training of students, whether they are offered in the form of workshop training, internship or industrial attachment.

For the last three years, please indicate the proportion of graduates who have:

	Year of graduation		
Received practical training			
Did not receive practical training			

Provide details of the nature of the practical training received.

#### 4.3.2f Award of the Degree

Provide details of the classification of degrees. What are the conditions for the award of:

- an honours degree
- a pass degree

Please indicate, for each of the past five years, the number of degrees awarded in the categories indicated, and also the total number of students who were admitted to the corresponding first year of the programme.

	Year of Graduation				
The total number of students admitted to the programme in the <b>corresponding first year</b>					
The total number of students admitted to the programme in the <b>corresponding second and subsequent years</b>					

The number of these students graduating with honours degrees	1st					
	2/1					
	2/2					
	3rd					
The number of these students graduating with pass degrees						
The number of these students leaving the programme						
The number of these students who are still studying in the programme						

#### 4.4 ACADEMIC STAFF

- 4.4.1 Identify the programme director/leader and describe in detail his/her responsibilities.
- 4.4.2 Describe the composition, size, credentials, experience, and workload of the academic staff that supports this programme.
- 4.4.3 Describe the competencies of the academic staff and how they are adequate to cover all of the curricular areas of the programme.
- 4.4.4 Please supply information on the number of staff within the Department.

Staff	Academic Year		
Full-time Academic			
Part-time Academic			
Full-time office/administration			
Part-time office/administration			
Full-time technical			
Part-time technical			
Teaching assistant (hours)			
Other support staff			
<b>TOTAL</b>			
Academic staff on sabbatical leave			

Total establishment academic staff			
Number of academic staff vacancies			

For the full time academic staff, please provide the distribution of age demographics

Age	Grade/Rank of Position			
	Chair Professor	Professor	Associate Professor	Others (please specify)
below 30				
31-40				
41-50				
51-60				
above 60				

#### 4.4.5 Part-time Staff

Describe how the part-time staff are supervised and evaluated in relation to the delivery of the required course content, competence in teaching and availability to students.

#### 4.4.6 Academic Staff Vitae

For each member of academic staff in the Department, and other servicing Departments who are supporting the programme, complete a copy of the form below. A curriculum vitae may be submitted provided it supplies all the information requested on the form.

Name:

Present Position:

Date: a) joining University/Institution:

b) present appointment

Academic Qualifications

Degree

University/Institution

Date

Member of the HKIE

Other Professional Qualifications

Sabbatical Leave/Other Activities Supporting Professional Development

Year                                      Organisation                                      Location

Courses taught in the past three years

Undergraduate                                      Postgraduate

Present teaching courses/modules/subjects and student contact hours per course/module/subject per year

Number of student theses supervised

	Undergraduate	Masters	PhD
Completed (last 3 years)			
Completed (lifetime)			
In progress			

Publications	Refereed Journals	Refereed Conference	Other (identify)
--------------	-------------------	---------------------	------------------

Number (last five years)  
Number (lifetime)

Consultancy

Number in progress  
Total (last five years)

Funding                                      Research                                      Non research

In progress  
Total (last five years)

Professional/Scholarly Activity

Provide a brief description of main areas of interest - technical and research interests, offices held in professional and technical organisations etc.

Industrial and related experience

Provide a brief resume.

Signed: \_\_\_\_\_  
Member of Academic Staff

Date: \_\_\_\_\_



#### 4.4.9 Faculty Development

Describe the policy for ensuring the continued teaching competence and the professional development of the teaching staff. In addition, describe the policy on:

Sabbatical Leave  
Research and Development  
Consultancy

#### 4.4.10 Support Staff

Please list all technical, laboratory and other support staff giving their position, qualifications and brief details of their experience. Differentiate between permanent (P), part-time (PT) and short term research staff (R). An additional page may be used as required.

Name	Qualifications	Experience

#### 4.4.11 Development

Please provide details of any proposed development, change in staff, new equipment, new facilities, etc, within the programme.

### 4.5 RESOURCES

#### 4.5.1 Space

Detail the programme facilities available and indicate any limitations that impact the ability to achieve the programme's desired outcomes. Include information for the following:

Lecture halls

Laboratories and equipment (stating the courses/modules/subjects that are relevant for the corresponding laboratories and equipment listed)

Offices

Student work areas

#### 4.5.2 Computer Facilities

Provide details of the computer facilities available for the programmes. Specify any limitations that impact the ability to achieve the programme's desired outcomes.

#### 4.5.3 Library Facilities

Provide details of the library facilities available for the programmes. Specify any limitations that impact the ability to achieve the programme's outcomes. Include information on the adequacy of the collections and information services as it relates to the programme's desired outcomes. Include the process used to ensure that the facilities available will be prepared to meet the changing nature of the programme's needs.

#### 4.5.4 Finance

Detail the process used to establish the programme budget. Provide evidence of the continuity of support for the programme. Include both institutional and other funding sources.

##### (i) Committed to teaching and teaching support

Year				
<b>Category</b>				
<b>Operating:</b> Teaching Office supplies Other Maintenance				
<b>Equipment (Specify)</b>  Maintenance				
<b>Capital (Specify)</b>				

<b>Others / Acquisitions</b>				
<b>Total</b>	<b>HK\$</b>			

(ii) **Committed to research support**

<b>Funding Source</b>	<b>Years</b>				
UGC					
Other research bodies					
Industry					
Other (Specify)					
<b>Total</b>	<b>HK\$</b>				

Discuss the adequacy of the budget in achieving the programme's desired outcomes. Address at least the following areas:

- Facilities and equipment
- Faculty development
- Library and information resources
- Support personnel

#### 4.6 ASSESSMENT

Provide details of process used to assure an effective quality assurance system. Describe both the internal and external processes used. Include at least the following:





#### 4.7 **ENTRY LEVELS**

##### 4.7.1 **Admission Requirements**

Specify minimum requirements on the basis of which admission has been made over the last five years. Explain the basis for setting these standards.

##### 4.7.2 **Student Numbers**

Please provide the total number of students in each year of the programme:

Year 1	Year 2	Year 3	Year 4	Total

#### 4.8 **DEVELOPMENT**

Describe how the Programme incorporates the requirements of society and the profession. Describe how the programme responds to local and international requirements.

# International Engineering Alliance

Washington Accord  
Sydney Accord  
Dublin Accord

Engineers Mobility Forum  
Engineering Technologists  
Mobility Forum

## Graduate Attributes and Professional Competencies

Version 2 - 18 June 2009

### Executive Summary

Several accrediting bodies for engineering qualifications have developed outcomes-based criteria for evaluating programmes. Similarly, a number of engineering regulatory bodies have developed or are in the process of developing competency-based standards for registration. Educational and professional accords for mutual recognition of qualifications and registration have developed statements of graduate attributes and professional competency profiles. This document presents the background to these developments, their purpose and the methodology and limitations of the statements. After defining general range statements that allow the competencies of the different categories to be distinguished, the paper presents the graduate attributes and professional competency profiles for three professional tracks: engineer, engineering technologist and engineering technician.

### 1 Introduction

Engineering is an activity that is essential to meeting the needs of people, economic development and the provision of services to society. Engineering involves the purposeful application of mathematical and natural sciences and a body of engineering knowledge, technology and techniques. Engineering seeks to produce solutions whose effects are predicted to the greatest degree possible in often uncertain contexts. While bringing benefits, engineering activity has potential adverse consequences. Engineering therefore must be carried out responsibly and ethically, use available resources efficiently, be economic, safeguard health and safety, be environmentally sound and sustainable and generally manage risks throughout the entire lifecycle of a system.

Typical engineering activity requires several roles including those of the engineer, engineering technologist and engineering technician, recognized as professional registration categories in many jurisdictions<sup>1</sup>. These roles are defined by their distinctive competencies and their level of responsibility to the public. There is a degree of overlap between roles. The distinctive competencies, together with their educational underpinnings, are defined in sections 4 to 6 of this document.

The development of an engineering professional in any of the categories is an ongoing process with important identified stages. The first stage is the attainment of an *accredited educational qualification*, the graduate stage. The fundamental purpose of *engineering education* is to build a knowledge base and attributes to enable the graduate to continue learning and to proceed to formative development that will develop the competencies required for independent practice. The second stage, following after a period of formative development, is *professional registration*. The fundamental

---

<sup>1</sup> The terminology used in this document uses the term *engineering* as an activity in a broad sense and *engineer* as shorthand for the various types of professional and chartered engineer. It is recognized that *engineers*, *engineering technologists* and *engineering technicians* may have specific titles or designations and differing legal empowerment or restrictions within individual jurisdictions.

purpose of formative development is to build on the educational base to develop the competencies required for independent practice in which the graduate works with engineering practitioners and progresses from an assisting role to taking more individual and team responsibility until competence can be demonstrated at the level required for registration. Once registered, the practitioner must maintain and expand competence.

For engineers and engineering technologists, a third milestone is to qualify for the *international register* held by the various jurisdictions. In addition, engineers, technologists and technicians are expected to maintain and enhance competency throughout their working lives.

Several international accords provide for recognition of graduates of accredited programmes of each signatory by the remaining signatories. The Washington Accord (WA) provides for mutual recognition of programmes accredited for the engineer track. The Sydney Accord (SA) establishes mutual recognition of accredited qualifications for engineering technologist. The Dublin Accord (DA) provides for mutual recognition of accredited qualifications for engineering technicians. These accords are based on the principle of substantial equivalence rather than exact correspondence of content and outcomes. This document records the signatories' consensus on the attributes of graduates for each accord.

Similarly, the Engineers Mobility Forum (EMF) and the Engineering Technologists Mobility Forum (ETMF) provide mechanisms to support the recognition of a professional registered in one signatory jurisdiction obtaining recognition in another. The signatories have formulated consensus competency profiles for the registration and these are recorded in this document. While no mobility forum currently exists for technicians, competency statements were also formulated for completeness and to facilitate any future development.

Section 2 give the background to the graduate attributes presented in section 5. Section 3 provides background to the professional competency profiles presented in section 6. General range statements are presented in section 4. The graduate attributes are presented in section 5 while the professional competency profiles are defined in section 6. Appendix A defines terms used in this document. Appendix B sketches the origin and development history of the graduate attributes and professional competency profiles.

## **2 Graduate Attributes**

### **2.1 Purpose of Graduate Attributes**

*Graduate attributes* form a set of individually assessable outcomes that are the components indicative of the graduate's potential to acquire competence to practise at the appropriate level. The graduate attributes are exemplars of the attributes expected of graduate from an accredited programme. Graduate attributes are clear, succinct statements of the expected capability, qualified if necessary by a range indication appropriate to the type of programme.

The graduate attributes are intended to assist Signatories and Provisional Members to develop outcomes-based accreditation criteria for use by their respective jurisdictions. Also, the graduate attributes guide bodies developing their accreditation systems with a view to seeking signatory status.

Graduate attributes are defined for educational qualifications in the engineer, engineering technologist and engineering technician tracks. The graduate attributes serve to identify the distinctive characteristics as well as areas of commonality between the expected outcomes of the different types of programmes.

### **2.2 Limitation of Graduate Attributes**

Each signatory defines the standards for the relevant track (engineer, engineering technologist or engineering technician) against which engineering educational programmes are accredited. Each

educational level accord is based on the principle of *substantial equivalence*, that is, programmes are not expected to have identical outcomes and content but rather produce graduates who could enter employment and be fit to undertake a programme of training and experiential learning leading to professional competence and registration. The graduate attributes provide a point of reference for bodies to describe the outcomes of substantially equivalent qualification. The graduate attributes do not, in themselves, constitute an “international standard” for accredited qualifications but provide a widely accepted common reference for bodies to describe the outcomes of substantially equivalent qualifications.

The term graduate does not imply a particular type of qualification but rather the exit level of the qualification, be it a degree or diploma.

### 2.3 Scope and Organisation of Graduate Attributes

The graduate attributes are organized using twelve headings shown in section 5.2. Each heading identifies the differentiating characteristic that allows the distinctive roles of engineers, technologists and technicians to be distinguished by range information.

For each attribute, statements are formulated for engineer, engineering technologist and engineering technician using a common stem, with ranging information appropriate to each educational track. For example, for the Knowledge of Engineering Sciences attribute:

**Common Stem:** Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization ...

**Engineer Range:** ... to the solution of complex engineering problems.

**Engineering Technologist Range:** ... to defined and applied engineering procedures, processes, systems or methodologies.

**Engineering Technician Range:** ... to wide practical procedures and practices.

The resulting statements are shown below for this example:

... for Washington Accord Graduate	... for Sydney Accord Graduate	... for Dublin Accord Graduate
Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.	Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to defined and applied engineering procedures, processes, systems or methodologies.	Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to wide practical procedures and practices.

The range qualifier in several attribute statements uses the notions of *complex engineering problems*, *broadly-defined engineering problems* and *well-defined engineering problems*. These shorthand level descriptors are defined in section 4.

The attributes are chosen to be universally applicable and reflect acceptable minimum standards and be capable of objective measurement. While all attributes are important, individual attributes are not necessarily of equal weight. Attributes are selected that are expected to be valid for extended periods and changed infrequently only after considerable debate. Attributes may depend on information external to this document, for example generally accepted principles of ethical conduct.

The full set of graduate attribute definitions are given in section 5.

## 2.4 Contextual Interpretation

The graduate attributes are stated generically and are applicable to all engineering disciplines. In interpreting the statements within a disciplinary context, individual statements may be amplified and given particular emphasis but must not be altered in substance or individual elements ignored.

## 2.5 Best Practice in Application of Graduate Attributes

The attributes of Accord programmes are defined as a *knowledge profile*, an indicated volume of learning and the attributes against which graduates must be able to perform. The requirements are stated without reference to the design of programmes that would achieve the requirements. Providers therefore have freedom to design programmes with different detailed structure, learning pathways and modes of delivery. Evaluation of individual programmes is the concern of national accreditation systems.

# 3 Professional Competency Profiles

## 3.1 Purpose of Professional Competency Profiles

A professionally or occupationally *competent person* has the attributes necessary to perform the activities within the profession or occupation to the standards expected in independent employment or practice. The *professional competency profiles* for each professional category record the elements of competency necessary for competent performance that the professional is expected to be able to demonstrate in a holistic way at the stage of attaining registration.

Professional competence can be described using a set of attributes corresponding largely to the graduate attributes, but with different emphases. For example, at the professional level, the ability to take responsibility in a real-life situation is essential. Unlike the graduate attributes, professional competence is more than a set of attributes that can be demonstrated individually. Rather, competence must be assessed holistically.

## 3.2 Scope and Organisation of Professional Competency Profiles

The professional competency profiles are written for each of the three categories: engineer, engineering technologist and engineering technician at the point of registration<sup>2</sup>. Each profile consists of thirteen elements. Individual elements are formulated around a differentiating characteristic using a stem and modifier, similarly to the method used for the graduate attributes described in section 2.3.

The stems are common to all three categories and the range modifiers allow distinctions and commonalities between categories to be identified. Like their counterparts in the graduate attributes, the range statements use the notions of complex engineering problems, broadly-defined engineering problems and well-defined engineering problems defined in section 4.1. At the professional level, a classification of engineering activities is used to define ranges and to distinguish between categories. Engineering activities are classified as *complex*, *broadly-defined* or *well-defined*. These shorthand level descriptors are defined in section 4.2.

## 3.3 Limitations of Professional Competency Profile

As in the case of the graduate attributes, the professional competency profiles are not prescriptive in detail but rather reflect the essential elements that would be present in competency standards.

The professional competency profiles do not specify performance indicators or how the above items should be interpreted in assessing evidence of competence from different areas of practice or for different types of work. Section 3.4 examines contextual interpretation.

---

<sup>2</sup> Requirements for the EMF and ETMF International Registers call for enhanced competency and responsibility.

Each jurisdiction may define *performance indicators*, that is actions on the part of the candidate that demonstrate competence. For example, a design competency may be evidenced by the following performances:

- 1: Identify and analyse design/ planning requirement and draw up detailed requirements specification*
- 2: Synthesise a range of potential solutions to problem or approaches to project execution*
- 3: Evaluate the potential approaches against requirements and impacts outside requirements*
- 4: Fully develop design of selected option*
- 5: Produce design documentation for implementation*

### **3.4 Contextual Interpretation**

Demonstration of competence may take place in different areas of practice and different types of work. Competence statements are therefore discipline-independent. Competence statements accommodate different types of work, for example design, research and development and engineering management by using the broad phases in the cycle of engineering activity: problem analysis, synthesis, implementation, operation and evaluation, together the management attributes needed. The competence statements include the personal attributes needed for competent performance irrespective of specific local requirements: communication, ethical practice, judgement, taking responsibility and the protection of society.

The professional competency profiles are stated generically and are applicable to all engineering disciplines. The application of a competency profile may require amplification in different regulatory, disciplinary, occupational or environmental contexts. In interpreting the statements within a particular context, individual statements may be amplified and given particular emphasis but must not be altered in substance or ignored.

### **3.5 Mobility between Professional Categories**

The graduate attributes and professional competency for each of three categories of engineering practitioner define the benchmark route or vertical progression in each category. This document does not address the movement of individuals between categories, a process that usually required additional education, training and experience. The graduate attributes and professional competencies, through their definitions of level of demand, knowledge profile and outcomes to be achieved, allow a person planning such a change to gauge the further learning and experience that will be required. The education and registration requirements of the jurisdiction should be examined for specific requirements.

#### 4 Common Range and Contextual Definitions

##### 4.1 Range of Problem Solving

	Attribute	Complex Problems	Broadly-defined Problems	Well-defined Problems
1	Preamble	Engineering problems which cannot be resolved without in-depth engineering knowledge, much of which is at, or informed by, the forefront of the professional discipline, and have some or all of the following characteristics:	Engineering problems which cannot be pursued without a coherent and detailed knowledge of defined aspects of a professional discipline with a strong emphasis on the application of developed technology, and have the following characteristics	Engineering problems having some or all of the following characteristics:
2	Range of conflicting requirements	Involve wide-ranging or conflicting technical, engineering and other issues	Involve a variety of factors which may impose conflicting constraints	Involve several issues, but with few of these exerting conflicting constraints
3	Depth of analysis required	Have no obvious solution and require abstract thinking, originality in analysis to formulate suitable models	Can be solved by application of well-proven analysis techniques	Can be solved in standardised ways
4	Depth of knowledge required	Requires research-based knowledge much of which is at, or informed by, the forefront of the professional discipline and which allows a fundamentals-based, first principles analytical approach	Requires a detailed knowledge of principles and applied procedures and methodologies in defined aspects of a professional discipline with a strong emphasis on the application of developed technology and the attainment of know-how, often within a multidisciplinary engineering environment	Can be resolved using limited theoretical knowledge but normally requires extensive practical knowledge
5	Familiarity of issues	Involve infrequently encountered issues	Belong to families of familiar problems which are solved in well-accepted ways	Are frequently encountered and thus familiar to most practitioners in the practice area
6	Extent of applicable codes	Are outside problems encompassed by standards and codes of practice for professional engineering	May be partially outside those encompassed by standards or codes of practice	Are encompassed by standards and/or documented codes of practice
7	Extent of stakeholder involvement and level of conflicting requirements	Involve diverse groups of stakeholders with widely varying needs	Involve several groups of stakeholders with differing and occasionally conflicting needs	Involve a limited range of stakeholders with differing needs
8	Consequences	Have significant consequences in a range of contexts	Have consequences which are important locally, but may extend more widely	Have consequences which are locally important and not far-reaching
9	Interdependence	Are high level problems including many component parts or sub-problems	Are parts of, or systems within complex engineering problems	Are discrete components of engineering systems

#### 4.2 Range of Engineering Activities

	<b>Attribute</b>	<b>Complex Activities</b>	<b>Broadly-defined Activities</b>	<b>Well-defined Activities</b>
1	Preamble	<b>Complex activities</b> means ( <i>engineering</i> ) activities or projects that have some or all of the following characteristics:	<b>Broadly defined activities</b> means ( <i>engineering</i> ) activities or projects that have some or all of the following characteristics:	<b>Well-defined activities</b> means ( <i>engineering</i> ) activities or projects that have some or all of the following characteristics:
2	Range of resources	Involve the use of diverse resources (and for this purpose resources includes people, money, equipment, materials, information and technologies)	Involve a variety of resources (and for this purposes resources includes people, money, equipment, materials, information and technologies)	Involve a limited range of resources (and for this purpose resources includes people, money, equipment, materials, information and technologies)
3	Level of interactions	Require resolution of significant problems arising from interactions between wide-ranging or conflicting technical, engineering or other issues.	Require resolution of occasional interactions between technical, engineering and other issues, of which few are conflicting	Require resolution of interactions between limited technical and engineering issues with little or no impact of wider issues
4	Innovation	Involve creative use of engineering principles and research-based knowledge in novel ways.	Involve the use of new materials, techniques or processes in non-standard ways	Involve the use of existing materials techniques, or processes in modified or new ways
5	Consequences to society and the environment	Have significant consequences in a range of contexts, characterized by difficulty of prediction and mitigation	Have reasonably predictable consequences that are most important locally, but may extend more widely	Have consequences that are locally important and not far-reaching
6	Familiarity	Can extend beyond previous experiences by applying principles-based approaches	Require a knowledge of normal operating procedures and processes	Require a knowledge of practical procedures and practices for widely-applied operations and processes

#### 5 Accord programme profiles

The following tables provides profiles of graduates of three types of tertiary education engineering programmes. See section 4 for definitions of complex engineering problems, broadly-defined engineering problems and well-defined engineering problems.

### 5.1 Knowledge profile

A Washington Accord programme provides:	A Sydney Accord programme provides:	A Dublin Accord programme provides:
<ul style="list-style-type: none"> <li>A systematic, theory-based understanding of the <b>natural sciences</b> applicable to the discipline (e.g. calculus-based physics)</li> </ul>	<ul style="list-style-type: none"> <li>A systematic, theory-based understanding of the <b>natural sciences</b> applicable to the sub-discipline</li> </ul>	<ul style="list-style-type: none"> <li>A descriptive, formula-based understanding of the <b>natural sciences</b> applicable in a sub-discipline</li> </ul>
<ul style="list-style-type: none"> <li>Conceptually-based <b>mathematics</b>, numerical analysis, statistics and formal aspects of computer and information science to support analysis and modelling applicable to the discipline</li> </ul>	<ul style="list-style-type: none"> <li>Conceptually-based <b>mathematics</b>, numerical analysis, statistics and aspects of computer and information science to support analysis and use of models applicable to the sub-discipline</li> </ul>	<ul style="list-style-type: none"> <li>Procedural <b>mathematics</b>, numerical analysis, statistics applicable in a sub-discipline</li> </ul>
<ul style="list-style-type: none"> <li>A systematic, theory-based formulation of <b>engineering fundamentals</b> required in the engineering discipline</li> </ul>	<ul style="list-style-type: none"> <li>A systematic, theory-based formulation of <b>engineering fundamentals</b> required in an accepted sub-discipline</li> </ul>	<ul style="list-style-type: none"> <li>A coherent procedural formulation of <b>engineering fundamentals</b> required in an accepted sub-discipline</li> </ul>
<ul style="list-style-type: none"> <li>engineering <b>specialist knowledge</b> that provides theoretical frameworks and bodies of knowledge for the accepted practice areas in the engineering discipline; much is at the forefront of the discipline.</li> </ul>	<ul style="list-style-type: none"> <li>engineering <b>specialist knowledge</b> that provides theoretical frameworks and bodies of knowledge for an accepted sub-discipline</li> </ul>	<ul style="list-style-type: none"> <li>engineering <b>specialist knowledge</b> that provides the body of knowledge for an accepted sub-discipline</li> </ul>
<ul style="list-style-type: none"> <li>knowledge that supports <b>engineering design</b> in a practice area</li> </ul>	<ul style="list-style-type: none"> <li>knowledge that supports <b>engineering design</b> using the technologies of a practice area</li> </ul>	<ul style="list-style-type: none"> <li>knowledge that supports <b>engineering design</b> based on the techniques and procedures of a practice area</li> </ul>
<ul style="list-style-type: none"> <li>knowledge of <b>engineering practice</b> (technology) in the practice areas in the engineering discipline</li> </ul>	<ul style="list-style-type: none"> <li>knowledge of <b>engineering technologies</b> applicable in the sub-discipline</li> </ul>	<ul style="list-style-type: none"> <li>codified <b>practical engineering knowledge</b> in recognised practice area.</li> </ul>
<ul style="list-style-type: none"> <li><b>comprehension of</b> the role of engineering in society and identified issues in engineering practice in the discipline: ethics and the professional responsibility of an engineer to public safety; the impacts of engineering activity: economic, social, cultural, environmental and sustainability;</li> </ul>	<ul style="list-style-type: none"> <li><b>comprehension of</b> the role of technology in society and identified issues in applying engineering technology: ethics and impacts: economic, social, environmental and sustainability</li> </ul>	<ul style="list-style-type: none"> <li><b>knowledge</b> of issues and approaches in engineering technician practice: ethics, financial, cultural, environmental and sustainability impacts</li> </ul>
<ul style="list-style-type: none"> <li>Engagement with selected knowledge in the <b>research literature</b> of the discipline</li> </ul>	<ul style="list-style-type: none"> <li>engagement with the <b>technological literature</b> of the discipline</li> </ul>	
<p>A programme that builds this type of knowledge and develops the attributes listed below is typically achieved in 4 to 5 years of study, depending on the level of students at entry.</p>	<p>A programme that builds this type of knowledge and develops the attributes listed below is typically achieved in 3 to 4 years of study, depending on the level of students at entry.</p>	<p>A programme that builds this type of knowledge and develops the attributes listed below is typically achieved in 2 to 3 years of study, depending on the level of students at entry.</p>

## 5.2 Graduate Attribute profiles

		Differentiating Characteristic	... for Washington Accord Graduate	... for Sydney Accord Graduate	... for Dublin Accord Graduate
1.	Engineering Knowledge	Breadth and depth of education and type of knowledge, both theoretical and practical	Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems	Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to defined and applied engineering procedures, processes, systems or methodologies.	Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to wide practical procedures and practices.
2.	Problem Analysis	Complexity of analysis	Identify, formulate, research literature and analyse <i>complex</i> engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.	Identify, formulate, research literature and analyse <i>broadly-defined</i> engineering problems reaching substantiated conclusions using analytical tools appropriate to their discipline or area of specialisation.	Identify and analyse <i>well-defined</i> engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity.
3.	Design/development of solutions	Breadth and uniqueness of engineering problems i.e. the extent to which problems are original and to which solutions have previously been identified or codified	Design solutions for <i>complex</i> engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.	Design solutions for <i>broadly-defined</i> engineering technology problems and <i>contribute to</i> the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.	Design solutions for <i>well-defined</i> technical problems and <i>assist with</i> the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
4.	Investigation	Breadth and depth of investigation and experimentation	Conduct investigations of <i>complex</i> problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.	Conduct investigations of <i>broadly-defined</i> problems; locate, search and select relevant data from codes, data bases and literature, design and conduct experiments to provide valid conclusions.	Conduct investigations of <i>well-defined</i> problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.
5.	Modern Tool Usage	Level of understanding of the appropriateness of the tool	Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to <i>complex</i> engineering activities, with an understanding of the limitations.	Select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to <i>broadly-defined</i> engineering activities, with an understanding of the limitations.	Apply appropriate techniques, resources, and modern engineering and IT tools to <i>well-defined</i> engineering activities, with an awareness of the limitations.

6.	<b>The Engineer and Society</b>	Level of knowledge and responsibility	Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technology practice.	Demonstrate knowledge of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technician practice.
7.	<b>Environment and Sustainability</b>	Type of solutions.	Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.	Understand the impact of engineering technology solutions in societal societal and environmental context and demonstrate knowledge of and need for sustainable development.	Understand the impact of engineering technician solutions in societal societal and environmental context and demonstrate knowledge of and need for sustainable development.
8.	<b>Ethics</b>	Understanding and level of practice	Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.	Understand and commit to professional ethics and responsibilities and norms of engineering technology practice.	Understand and commit to professional ethics and responsibilities and norms of technician practice.
9.	<b>Individual and Team work</b>	Role in and diversity of team	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.	Function effectively as an individual, and as a member or leader in diverse technical teams.	Function effectively as an individual, and as a member in diverse technical teams.
10.	<b>Communication</b>	Level of communication according to type of activities performed	Communicate effectively on <i>complex</i> engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	Communicate effectively on <i>broadly-defined</i> engineering activities with the engineering community and with society at large, by being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions	Communicate effectively on <i>well-defined</i> engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions
11.	<b>Project Management and Finance</b>	Level of management required for differing types of activity	Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	Demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member and leader in a team and to manage projects in multidisciplinary environments	Demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member and leader in a technical team and to manage projects in multidisciplinary environments
12.	<b>Life long learning</b>	Preparation for and depth of continuing learning.	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	Recognize the need for, and have the ability to engage in independent and life-long learning in specialist technologies.	Recognize the need for, and have the ability to engage in independent updating in the context of specialized technical knowledge.

## 6 Professional Competency Profiles

To meet the minimum standard of competence a person must demonstrate that he/she is able to practice competently in his/her practice area to the standard expected of a reasonable Professional Engineer/Engineering Technologist/Engineering Technician.

The extent to which the person is able to perform each of the following elements in his/her practice area must be taken into account in assessing whether or not he/she meets the overall standard.

		<b>Differentiating Characteristic</b>	<b>Professional Engineer</b>	<b>Engineering Technologist</b>	<b>Engineering Technician</b>
1.	<b>Comprehend and apply universal knowledge</b>	Breadth and depth of education and type of knowledge	Comprehend and apply advanced knowledge of the widely-applied principles underpinning good practice	Comprehend and apply the knowledge embodied in widely accepted and applied procedures, processes, systems or methodologies	Comprehend and apply knowledge embodied in standardised practices
2.	<b>Comprehend and apply local knowledge</b>	Type of local knowledge	Comprehend and apply advanced knowledge of the widely-applied principles underpinning good practice specific to the jurisdiction in which he/she practices.	Comprehend and apply the knowledge embodied procedures, processes, systems or methodologies that is specific to the jurisdiction in which he/she practices.	Comprehend and apply knowledge embodied in standardised practices specific to the jurisdiction in which he/she practices.
3.	<b>Problem analysis</b>	Complexity of analysis	Define, investigate and analyse complex problems	Identify, clarify, and analyse broadly-defined problems	Identify, state and analyse well-defined problems
4.	<b>Design and development of solutions</b>	Nature of the problem and uniqueness of the solution	Design or develop solutions to complex problems	Design or develop solutions to broadly-defined problems	Design or develop solutions to well-defined problems
5.	<b>Evaluation</b>	Type of activity	Evaluate the outcomes and impacts of complex activities	Evaluate the outcomes and impacts of broadly defined activities	Evaluate the outcomes and impacts of well-defined activities
6.	<b>Protection of society</b>	Types of activity and responsibility to public	Recognise the reasonably foreseeable 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	Recognise the reasonably foreseeable social, cultural and environmental effects of broadly-defined activities generally, and have regard to the need for sustainability; take responsibility in all these activities to avoid putting the public at risk.	Recognise the reasonably foreseeable social, cultural and environmental effects of well-defined activities generally, and have regard to the need for sustainability; use engineering technical expertise to prevent dangers to the public.
7.	<b>Legal and regulatory</b>	No differentiation in this characteristic	Meet all legal and regulatory requirements and protect public health and safety in the course of his or her activities	Meet all legal and regulatory requirements and protect public health and safety in the course of his or her activities	Meet all legal and regulatory requirements and protect public health and safety in the course of his or her activities

8.	<b>Ethics</b>	No differentiation in this characteristic	Conduct his or her activities ethically	Conduct his or her activities ethically	Conduct his or her activities ethically
9.	<b>Manage engineering activities</b>	Types of activity	Manage part or all of one or more complex activities	Manage part or all of one or more broadly-defined activities	Manage part or all of one or more well-defined activities
10.	<b>Communication</b>	No differentiation in this characteristic	Communicate clearly with others in the course of his or her activities	Communicate clearly with others in the course of his or her activities	Communicate clearly with others in the course of his or her activities
11.	<b>Lifelong learning</b>	Preparation for and depth of continuing learning.	Undertake CPD activities sufficient to maintain and extend his or her competence	Undertake CPD activities sufficient to maintain and extend his or her competence	Undertake CPD activities sufficient to maintain and extend his or her competence
12.	<b>Judgement</b>	Level of developed knowledge, and ability and judgement in relation to type of activity	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	Choose appropriate technologies to deal with broadly defined problems. Exercise sound judgement in the course of his or her broadly-defined activities	Choose and apply appropriate technical expertise. Exercise sound judgement in the course of his or her well-defined activities
13.	<b>Responsibility for decisions</b>	Type of activity for which responsibility is taken	Be responsible for making decisions on part or all of complex activities	Be responsible for making decisions on part or all of one or more broadly defined activities	Be responsible for making decisions on part or all of all of one or more well-defined activities

## Appendix A: Definitions of terms

**Note:** These definitions apply to terms used in this document but also indicate equivalence to terms used in other engineering education standards.

**Branch of engineering:** a generally-recognised, major subdivision of engineering such as the traditional *disciplines* of Chemical, Civil, or Electrical Engineering, or a cross-disciplinary field of comparable breadth including combinations of engineering fields, for example Mechatronics, and the application of engineering in other fields, for example Bio-Medical Engineering.

**Broadly-defined engineering problems:** a class of problem with characteristics defined in section 4.1.

**Broadly-defined engineering activities:** a class of activities with characteristics defined in section 4.2.

**Complementary (contextual) knowledge:** Disciplines other than engineering, basic and mathematical sciences, that support engineering practice, enable its impacts to be understood and broaden the outlook of the engineering graduate.

**Complex engineering problems:** a class of problem with characteristics defined in section 4.1.

**Complex engineering activities:** a class of activities with characteristics defined in section 4.2.

**Continuing Professional Development:** the systematic, accountable maintenance, improvement and broadening of knowledge and skills, and the development of personal qualities necessary for the execution of professional and technical duties throughout an engineering practitioner's career.

**Engineering sciences:** include engineering fundamentals that have roots in the mathematical and physical sciences, and where applicable, in other natural sciences, but extend knowledge and develop models and methods in order to lead to applications and solve problems, providing the knowledge base for engineering specializations.

**Engineering design knowledge:** Knowledge that supports engineering design in a practice area, including codes, standards, processes, empirical information, and knowledge reused from past designs.

**Engineering discipline:** synonymous with *branch of engineering*.

**Engineering fundamentals:** a systematic formulation of engineering concepts and principles based on mathematical and basic sciences to support applications.

**Engineering problem:** is one that exists in any domain that can be solved by the application of engineering knowledge and skills and generic competencies.

**Engineering practice:** a generally accepted or legally defined area of engineering work or engineering technology.

**Engineering speciality or specialization:** a generally-recognised practice area or major subdivision within an engineering discipline, for example Structural and Geotechnical Engineering within Civil Engineering; the extension of engineering fundamentals to create theoretical frameworks and bodies of knowledge for engineering practice areas.

**Engineering technology:** is an established body of knowledge, with associated tools, techniques, materials, components, systems or processes that enable a family of practical applications and that relies for its development and effective application on engineering knowledge and competency.

**Formative development:** the process that follows the attainment of an accredited education programme that consists of training, experience and expansion of knowledge.

**Manage:** means planning, organising, leading and controlling in respect of risk, project, change, financial, compliance, quality, ongoing monitoring, control and evaluation.

**Mathematical sciences:** mathematics, numerical analysis, statistics and aspects of computer science cast in an appropriate mathematical formalism.

**Natural sciences:** Provide, as applicable in each engineering discipline or practice area, an understanding the physical world including physics, mechanics, chemistry, earth sciences and the biological sciences,

**Practice area:** *in the educational context:* synonymous with generally-recognised engineering speciality; *at the professional level:* a generally recognised or distinctive area of knowledge and expertise developed by an engineering practitioner by virtue of the path of education, training and experience followed.

**Research-based knowledge:** a systematic understanding of knowledge and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of the academic discipline, field of study or area of professional practice.

**Solution:** means an effective proposal for resolving a problem, taking into account all relevant technical, legal, social, cultural, economic and environmental issues and having regard to the need for sustainability.

**Subdiscipline:** Synonymous with *engineering speciality*.

**Substantial equivalence:** applied to educational programmes means that two programmes, while not meeting a single set of criteria, are both acceptable as preparing their respective graduates to enter formative development toward registration.

**Well-defined engineering problems:** a class of problem with characteristics defined in section 4.1.

**Well-defined engineering activities:** a class of activities with characteristics defined in section 4.2.

## Appendix B: History of Graduate Attributes and Professional Competency Profiles

The signatories to the Washington Accord recognized the need to describe the attributes of a graduate of a Washington Accord accredited program. Work was initiated at its June 2001 meeting held at Thornybush, South Africa. At the International Engineering Meetings (IEM) held in June 2003 at Rotorua, New Zealand, the signatories to the Sydney Accord and the Dublin Accord recognized similar needs. The need was recognized to distinguish the attributes of graduates of each type of programme to ensure fitness for their respective purposes.

The Engineers Mobility Forum (EMF) and Engineering Technologist Mobility Forum (ETMF) have created international registers in each jurisdiction with current admission requirements based on registration, experience and responsibility carried. The mobility agreements recognize the future possibility of competency-based assessment for admission to an international register. At the 2003 Rotorua meetings, the mobility fora recognized that many jurisdictions are in the process of developing and adopting competency standards for professional registration. The EMF and the ETMF therefore resolved to define assessable sets of competencies for engineer and technologist. While no comparable mobility agreement exists for technicians, the development of a corresponding set of standards for engineering technicians was felt to be important to have a complete description of the competencies of the engineering team.

A single process was therefore agreed to develop the three sets of graduate attributes and three professional competency profiles. An International Engineering Workshop (IEWS) was held by the three educational accord and the two mobility fora in London in June 2004 to develop statements of Graduate Attributes and International Register Professional Competency Profiles for the Engineer, Engineering Technologist and Engineering Technician categories. The resulting statements were then opened for comment by the signatories. The comments received called for minor changes only.

The Graduate Attributes and Professional Competencies were adopted by the signatories of the five agreements in June 2005 at Hong Kong as version 1.1.

A number of areas of improvement in the Graduate Attributes and Professional Competencies themselves and their potential application were put to the meetings of signatories in Washington DC in June 2007. A working group was set up to address the issues. The IEA workshop held in June 2008 in Singapore considered the proposals of the working group and commissioned the Working Group to make necessary changes with a view to presenting Version 2 of the document for approval by the signatories at their next general meetings. Version 2 was approved at the Kyoto IEA meetings, 15-19 June 2009.

This document is available through the IEA website: <http://www.ieagreemements.org>.