Accreditation Management System

Accreditation Principles

AMS-POL-01

Version 2.0

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ACCREDITATION PRINCIPLES

1.   Purpose of this Document

The purpose of this document is to articulate the principles adopted by Engineers Australia for the accreditation of engineering education programs that prepare graduates for entry to professional practice in the occupational categories of Engineering Associate, Engineering Technologist, and Professional Engineer. It encompasses vocational education and training (VET) programs and higher education (HE) programs.

The document is prepared for all stakeholders in program accreditation, including, but not limited to, education providers, professionals, students, employers and members of the public.

For the purpose of stakeholders external to Engineers Australia, the principles express the accreditation policies of Engineers Australia.

2.   Definitions, Acronyms and References

Definitions

Accreditation – an evaluation and review process to determine if an education program meets defined standards of quality. Within this document 'accreditation' applies to the processes used by Engineers Australia, unless otherwise specified

Accreditation Outcome – the status of accreditation of a specific program

Accredited Program – an academic qualification that forms the complete academic basis for admission to registration/licensure

Accreditation Principles – for the purpose of stakeholders external to Engineers Australia, the principles express the accreditation policies of Engineers Australia

Chartered – chartered status is the accreditation of an individual professional based on an assessment of that person's professional competencies

Competency – in the VET sector, this is defined as the consistent application of knowledge and skill to the standard of performance required in the workplace; it embodies the ability to transfer and apply skills and knowledge to new situations and environments

Education Provider – the organisation responsible for the design and delivery of an education program, whether in the HE or VET sector

Entry to Practice Education Program – a program that is designed to deliver the initial

(Stage 1) professional competencies expected of a graduate when first entering professional practice; entry to practice education programs provide the formal education basis for determining an individual's Registration and Chartered status

Evaluation Panel – a small group of experienced professionals appointed to undertake the evaluation of a program against the accreditation criteria

Field of Engineering Practice – a scope of professional competence relating to a defined field of application in the practice of engineering

General Review – accreditation evaluation of all of the accredited programs of an established Education Provider, normally scheduled on a five-year cycle

Graduate Capabilities – the learning outcomes demonstrated by graduates and incorporating the Stage 1 Competencies for the specified program

Learner – a student in the VET sector

Outcomes-based Accreditation – uses an outcomes-oriented graduate capabilities standard against which the program is considered for accreditation; it does not specify the means by which these standards are met, giving the education provider freedom to design and execute programs

Program – a defined course of study leading to the award of a qualification (some providers may use the term "Course")

Provisional Accreditation – may be accorded to a program before it has been completed by any students or learners; the program will be further evaluated after completion by one or more cohorts

Quality Management – defines how an organisation meets its objectives

Recognised Program – a program accredited by a signatory of an International Educational Accord, and in consequence, is deemed to be substantially equivalent to Australian programs accredited for entry to the same occupational category

Registration – the outcome of an independent evaluation of an individual's achievement and maintenance of professional standards prescribed for membership of a community of professionals

Risk Management – considers the effect of uncertainty on the likely attainment of an organisation's objectives (compare with Quality Management)

Program Learning Outcomes – the educational outcomes specified for a program, incorporating the Stage 1 Competency standards

Stage 1 Competencies – the Engineers Australia outcomes-oriented graduate attributes standard for entry to professional practice in each occupational category

Threshold Standards – a minimum set of standards that must be met to achieve certification of some sort (accreditation in this case); they are not used to determine

levels of excellence

Undifferentiated Program – an education program that is delivered at several different locations under a common award title

Expected Unit/Course/Subject Learning Outcomes – the learning outcomes specified at the level of a unit/course/subject

Unit of Competency (VET sector) – the specification of the standards of performance required in the workplace as defined in a nationally endorsed training package or a VET accredited course.

Vocational Outcome (VET sector) – an occupational or job specific outcome that learners are expected to demonstrate upon completion of an accredited VET course

Acronyms

AAEE	Australasian Association for Engineering Education
ACED	Australian Council of Engineering Deans
AQF	Australian Qualifications Framework
AISC	Australia Industry Skills Committee
ASQA	Australian Skills Quality Authority
EA	Engineers Australia
EA	Engineering Associate
ENAEE	European Network for Accreditation of Engineering Education
ET	Engineering Technologist
HE	Higher Education
IEA	International Engineering Alliance
PA	Professions Australia
PE	Professional Engineer
RTO	Registered Training Organisation
TAFE	Technical and Further Education (institute)
TEQSA	Tertiary Education Quality Standards Authority
UA	Universities Australia
VET	Vocational Education and Training

3. Reference Documents

Universities Australia and Professions Australia: Joint Statement of Principles for Professional Accreditation, March 2016

IEA and ENAEE: Best Practice in Accreditation of Engineering Programmes: An Exemplar, April 2015

AMS-STD-10 Accreditation Standard – Higher Education

AMS-STD-20 Accreditation Standard – VET Competency Programs

International Engineering Alliance: Graduate Attributes and Professional Competencies, Version 3, 21 June 2013

Engineers Australia Stage 1 Competency Standard – Engineering Associate

Engineers Australia Stage 1 Competency Standard – Engineering Technologist

Engineers Australia Stage 1 Competency Standard – Professional Engineer

4.   Accreditation Context

4.1   Professional and Educational Context

Engineers Australia accredits engineering education programs as part of its role, on behalf of the profession and the community, to earn the trust of all stakeholders in the capability of graduates with respect to the educational foundations of the profession of engineering.

Together with Membership, Registration and Chartered evaluations, accreditation provides a fundamental means by which the profession is governed in Australia. It also promotes continuous improvement, innovation and diversity in engineering education.

Program accreditation is an evidence-based evaluation and review process to determine if educational programs meet defined standards of outcomes and quality. Accreditation provides assurance that a program is suitably designed and delivered to prepare graduates for entry to professional practice in the occupational category of Engineering Associate, Engineering Technologist, or Professional Engineer, in a specified field of engineering practice.

Program accreditation by Engineers Australia is voluntary: education providers request consideration of their programs for accreditation. An Accreditation Outcome is conferred for a specified period. Full Accreditation status applies only after one or more cohorts of students have graduated from the program. Education providers are strongly encouraged to renew the accreditation of their programs to verify that the quality of their programs is maintained.

Registration of engineering professionals through attainment of a specified degree is not mandated by Australian Commonwealth legislation. Consequently, significant responsibility is placed on the accreditation function to provide assurance to the community that graduates have met the formal education requirements for graduate employment and subsequent independent practice.

An important feature and outcome of program accreditation is the maintenance of internationally benchmarked standards in engineering education and the promotion of best practice. International recognition of Australia's accredited engineering education programs, and enhanced international mobility of graduates, is achieved through international accords and agreements to which Engineers Australia is a full signatory under the International Engineering Alliance (IEA). Engineers Australia also maintains working relationships with other international and regional bodies that are stakeholders in the accreditation of professional engineering programs.

Engineers Australia is the sole professional body in Australia that takes responsibility for the accreditation of higher education and VET programs that are designed to prepare students for entry to practice in the profession of engineering. EA implements this function through its organisational unit, the Australian Engineering Accreditation Centre, and independent

accreditation Evaluation Panels and an independent Accreditation Board.

4.2 TEQSA, ASQA and the Australian Qualifications Framework

The Engineers Australia Accreditation Management System operates within the context of the Australian HE and VET sectors.

In the HE sector, Australian universities and some other providers have the right to offer diploma and degree programs without any further external reference (so-called 'self-accrediting' institutions). Other education providers offering HE programs are not self-accrediting and are required to have their programs accredited by Commonwealth or state agencies prior to offering them to students. All HE providers are required to comply with the Commonwealth Higher Education Standards that are regulated and audited by the Tertiary Education Standards Quality Agency (TEQSA).

In the VET sector, providers (RTOs) are not self-accrediting but instead offer programs that are drawn from (a) national training package qualifications endorsed (accredited) by ASIC in accordance with the Standards for Training Packages or alternatively (b) courses accredited by either the Australian Skills Quality Authority (ASQA), or the Victorian or the Western Australian VET regulators in accordance with the Standards for VET Accredited Courses. For providers in the VET sector, including state-based Technical and Further Education (TAFE) institutes and private colleges, educational standards are set and overseen by Commonwealth and state regulators.

In designing programs and awarding qualifications all educational providers must comply with the Australian Qualifications Framework (AQF), introduced in the 1990s, but significantly strengthened in 2011. The AQF is the national framework for regulated qualifications in Australian education and training. In a single document, it provides learning outcomes descriptors of knowledge, skills and application of knowledge and skills for each of 10 qualification levels, from certificates to doctorates.

The AQF accommodates the diversity of purposes of Australian post-school education and training. Its outcomes-based qualification descriptors support access to qualifications and pathways between them, to assist individuals to move between different education and training sectors and between those sectors and the labour market. The AQF is intended to support individuals' lifelong learning goals, and enhance their national and international mobility. The AQF is benchmarked with other international qualification frameworks.

The AQF is a reference for professional accreditation agencies such as Engineers Australia. Accordingly, Engineers Australia has taken into account the educational levels of the AQF and has determined that the professional categories that it considers for accreditation of entry-to-practice programs are aligned as follows:

a) Engineering Associate – AQF Level 6 (Advanced Diploma and Associate Degree)

b) Engineering Technologist – AQF Level 7 (Bachelor Degree)

c) Professional Engineer – AQF Levels 8 and 9 (Bachelor Honours and Master Degrees)

Not all Master degree programs are eligible for accreditation; only Master degree programs that are entry-to-practice programs can be accredited.

4.3   Outcomes-based Accreditation

Program accreditation is an evaluation and review process to determine if a higher education or VET program meets defined standards of quality, namely, the accreditation criteria.

The terms quality management and risk management are often used in association with accreditation. Quality management defines <u>how</u> an organisation (or education program in this context) meets its objectives, while risk management considers the <u>effect of uncertainty</u> on the likely attainment of those objectives. Accreditation encompasses both.

In outcomes-based accreditation the accreditation criteria are defined in a way that gives the education provider freedom to design and execute programs to meet an outcomes-oriented graduate attributes standard. In the accreditation process, the Education Provider must account for all aspects of the curriculum and its execution, to enable graduates to attain the specified program outcomes, and for continuous improvement of the program.

Outcomes-based accreditation, developed for the modern education environment, inherently assumes a reasonable level of maturity throughout the entire community of education providers. In Australia, this community is dominated by publicly funded providers that operate largely in accordance with accepted norms and practices. Significant variations from accepted norms and practices, typical of innovation, can also be indicators of risk. Outcomes-based accreditation is inherently a risk-based approach, and therefore does not ignore variations from accepted norms and practices that may be indicators of risk. Where such variations are identified, rather than simply denying to the provider the opportunity for innovation, the underlying rationale for risk taking should be explored to determine whether the risk can be acceptably mitigated.

4.4   Purpose and Benefits of Accreditation

The purpose of accreditation is derived from the objects and purposes of Engineers Australia, "To increase the confidence of the community in the employment of engineers by admitting to The Institution only those persons as shall have satisfied the Board of The Institution that they have an adequate knowledge of both the theory and the practice of engineering".

In accordance with this purpose, Engineers Australia's accreditation process evaluates complete courses or programs of study (hereafter referred to as programs) leading to the award of engineering qualifications offered by Australian educational institutions. The key objective of this evaluation task is to accredit those programs which are adjudged as preparing their graduates adequately for entry to the practice of the profession and admission to membership of Engineers Australia in the grade of Graduate – in the occupational or career

category of Professional Engineer, Engineering Technologist or Engineering Associate, as appropriate.

The accreditation system is concerned with the criteria and processes for evaluating engineering education programs leading to the award of professional qualifications.

Accreditation by EA provides the following benefits:

- the identification of engineering HE and VET programs that produce graduates who are deemed to have attained the competencies defined for Stage 1 of the Standards, in the appropriate occupational category

- the educational prerequisite for chartered status and/or registration, and consequently is a critical component of individuals' certification by governments and licensing bodies, of competence and safety

- public identification of engineering programs that have been evaluated by the relevant professional body against stated criteria, independently of the education provider

- a guarantee that Australian engineering education providers can offer to prospective students and graduates, employers and governments, that programs have Australian and international standing

- a basis for international comparability of education standards, reciprocal recognition, and graduate mobility

Supplemental benefits of accreditation are:

- a statement to governments and education providers of the basic requirements of a professional education in engineering, and the level of resources reasonably required to meet these requirements

- informed feedback on the design or professional elements of new programs, modes of delivery, and engineering schools, and assistance in the promotion of innovation and good educational practice

4.5   Objectives of Accreditation Reviews

To meet the above purpose, accreditation reviews have the following objectives:

a) To determine, with reasonable confidence, the extent to which the HE program or VET competency program is capable of producing graduates with capabilities specified by the Engineers Australia Stage 1 Competencies

b) To determine, with reasonable confidence, the extent to which graduate cohorts indeed possess the capabilities specified in the Stage 1 competencies

c) To determine, with reasonable confidence, that a HE or VET program satisfying a) and b) will continue to produce the graduate capabilities throughout the accreditation period

The outcomes-based accreditation process does not prescribe detailed program content or educational method, but invites innovation and diversity. It requires engineering education providers to have in place their own mechanisms for researching and systematically reviewing program specified learning outcomes, educational design, student assessment and overall program performance, and for continuous quality improvement.

4.6 Graduate Outcome Standards

Education programs are assessed against criteria and standards set by Engineers Australia. The graduate outcome standards are expressed in the form of the professional competencies required of graduates to enter the profession from an engineering education program. They are known as the Engineers Australia Stage 1 Competencies and are defined for three occupational categories:

a) Engineers Australia Stage 1 Competencies for Engineering Associate

b) Engineers Australia Stage 1 Competencies for Engineering Technologist

c) Engineers Australia Stage 1 Competencies for Professional Engineer

Each standard is compliant with that of the corresponding educational accord under the International Engineering Alliance. As a generic statement of graduate outcomes for engineering, each standard also satisfies the academic requirements of the Australian Qualifications Framework at the corresponding level.

4.7 Accreditation Criteria

4.7.1 Higher Education Programs

Accreditation criteria have been developed to apply the applicable accreditation standards to meet the objectives of accreditation reviews of higher education programs. They are organised in three sets of criteria as follows:

a) Academic Program (AP)

b) Operating Environment (OE)

c) Quality Systems (QS)

The graduate outcomes specified by the Engineers Australia Stage 1 Competency Standards are incorporated within the Accreditation Standard – Higher Education (AMS-STD-10).

The Academic Program criteria are primarily employed to determine whether the program is capable of delivering the specified learning outcomes, supported by the Operating Environment.

Verification that the education program is producing cohorts of graduates who possess the graduate capabilities is explored by evaluation of samples of assessed work and from group interviews of recent graduates, supported by discussion with students currently engaged in the program.

Satisfaction of the Quality Systems criteria and Operating Environment criteria together provide assurance that delivery of the specified learning outcomes will be maintained through the accreditation period.

For successful accreditation of a program, all criteria must be satisfied, and all elements of the Stage 1 Competency standard must be delivered to at least a threshold level.

4.7.2 VET Competency Programs

Accreditation criteria have also been developed to apply the applicable accreditation standards to meet the objectives of accreditation reviews for competency programs (Advanced Diplomas). As with the HE programs, they are also organised into three sets of criteria:

a) Competency program (CP)

b) Operating Environment (COE)

c) Quality Systems (CQS)

The graduate outcomes specified by the Engineers Australia Stage 1 Competency Standards are incorporated within the Accreditation Standard – VET Competency Programs (AMS-STD-20).

Each set of criteria has similar purpose and function as the criteria for academic programs (see 4.7.1).

4.8 Enabling Innovation

The Engineers Australia accreditation system encourages innovation by minimising the degree of prescription of how the specified program outcomes are to be attained. Program evaluation will always focus on how the Education Provider meets the intent of the criteria and on the demonstrated capabilities of graduates as they are prepared to enter engineering practice in the relevant occupational category.

A program that departs radically from the educational methods or resources normally found necessary – for example, by employing only a fraction of the normal complement of staff – may expect a searching examination of its approach, as well as the program outcomes. The Accreditation Board and its evaluation panels are required to be both receptive to new approaches, and to use the best judgement available to evaluate their substance and merit.

Continuing innovation and development can be expected to lead to revision of the Accreditation Criteria, Competency Standards and Accreditation Policy from time to time.

4.9 Promoting Best Practice

Accreditation acts in a general way to promote best practice, through the exposure and experiences of Board and Panel members with developments nationally and internationally both in industry and academia.

Engineers Australia strongly encourages engineering schools to share innovations and developments in good practice by all available means, including dissemination via Australian

Council of Engineering Deans (ACED), and by publication through the Australian Association for Engineering Education (AAEE) publications, conferences and other opportunities.

Accreditation reports are confidential between Engineers Australia and the education provider, so it is not appropriate for Engineers Australia to publish these, nor even to publish an excerpt with the permission of the provider, as this might imply a form of ranking (see also 5.7).

5. Authorities, Responsibilities and Provisions

5.1 Accreditation Board

The Accreditation Board is established by the Management Board of Engineers Australia to administer the accreditation principles, standards and procedures of Engineers Australia governing accreditation, on behalf of the profession of engineering.

The authorities and specific responsibilities of the Accreditation Board are defined in a Terms of Reference document. This is determined by the Management Board of Engineers Australia, and may be amended from time to time. The Accreditation Board is empowered to establish advisory committees and processes on relevant matters, including risk assessment of an Education Provider.

The Accreditation Board comprises senior independent experts from industry and from the education sector. The Accreditation Board is independent in its decision-making in relation to the accreditation of programs, but operates in accordance with the policies, procedures and criteria established by Engineers Australia.

5.2 Evaluation Panels

Evaluation Panels (sometimes also called Accreditation Panels) are established by the Accreditation Centre, and approved by the Accreditation Board, to evaluate the higher education or VET programs offered for accreditation by an Education Provider. They comprise independent Discipline Experts selected from industry and the HE and/or VET sectors; these panel members are trained and briefed by the Accreditation Centre.

Evaluation Panels are independent in respect to the formulation of their recommendations for each program. These include recommendations on accreditation, including any applicable conditions, and recommendations for program improvement. The Panel prepares a report on its findings for consideration and decision by the Accreditation Board. This report is then released to the Education Provider.

The Evaluation Panel identifies any criteria for which the Education Provider is at higher risk than is typical.

Evaluation Panels operate in strict accordance with the policies, procedures and criteria established by Engineers Australia.

5.3 Australian Engineering Accreditation Centre

The Australian Engineering Accreditation Centre is the organisational unit within Engineers Australia that provides operational support to the whole function of program accreditation.

This includes formation and briefing of Evaluation Panels, accreditation visit scheduling and planning, accreditation visit logistics, reporting and Secretariat to the Accreditation Board, and communication of accreditation decisions to Education Providers.

The Accreditation Centre maintains a five-year schedule for General Reviews of established providers.

The Accreditation Centre also manages Engineers Australia's interfaces with the international education accords pertaining to program accreditation.

5.4 Education Provider

Education Providers may request accreditation of their engineering education programs that prepare students for entry to the engineering profession. These programs must have met the relevant HE or VET requirements for offering to prospective students. The Accreditation Centre works with established Education Providers to schedule the General Reviews of their currently accredited programs.

Education Providers should inform the Accreditation Centre when programs in Provisional Accreditation status have produced graduates.

In requesting and accepting the benefits of accreditation, the Education Provider undertakes to comply with the accreditation policies and procedures of Engineers Australia. The Education Provider must supply verifiable information against which the applicable accreditation criteria can be evaluated, and provide access to staff, students, graduates and other stakeholders. The Education Provider also commits to maintaining the accreditation baseline throughout the accreditation period (usually five years). Accordingly, they must inform the Accreditation Centre of any changes to an accredited program or its environment that may risk its compliance during the published period of accreditation.

An Education Provider must not attempt to influence the decisions of an Evaluation Panel or the Accreditation Board, other than through the proper means of provision of information in support of a request for accreditation.

Each Education Provider will pay a fee for accreditation services, and for other costs as may be incurred by the Accreditation Centre.

5.5 Publication of Accreditation Status

Engineers Australia maintains a list of accredited programs, regularly updated on its website. This list includes and identifies programs for which Full or Provisional Accreditation has been granted, pending evaluation after the program has graduated one or more cohorts of students or learners. Each listed program is assigned an accreditation start date, being the earliest year of commencement for which students will be deemed to have graduated from an accredited

program. This will often, but not always correspond to the first year of intake to a new program.

The term of accreditation of current programs is not published, but normally runs to the first intake of students for the year following the scheduled year of the next General Review. This extension is provided as a safeguard against possible processing delays in concluding the General Review cycle.

For discontinued programs, Engineers Australia will publish a terminating year for accreditation of the program.

Education Providers are encouraged to publicise statements to the effect that their programs are accredited by Engineers Australia. The Education Provider must represent the accreditation status of each accredited program accurately and without ambiguity. The Education Provider may not imply that a program has been accredited by Engineers Australia under any criteria except those against which it has been specifically evaluated. The Education Provider must avoid statements that allow a reader to infer that certain programs are accredited by Engineers Australia where it is not the case.

Authorisation to use the Engineers Australia accreditation logo is limited to certain conditions, is not granted simply on achievement of an accredited program and must be requested in writing. Unauthorised use of the Engineers Australia logo is prohibited.

5.6   Conflict of Interest

Membership of the Accreditation Board, Accreditation Panels, advisory and appeal committees inherently creates situations that may result in conflicts of interest or raise questions about the objectivity of the accreditation policy and processes. All members are expected to be constantly alert to this possibility, to disclose any real or perceived conflict of interest, to withdraw from any situation or activity that may constitute such a conflict, and generally to conduct themselves in accordance with the Engineers Australia Code of Ethics.

Potential conflicts of interest can arise from the following:

a) A close family member being currently employed or enrolled at the education provider

b) Current enrolment or recent graduation from the education provider

c) Current or recent employment, or negotiations for employment, at the education provider

d) Award of an honorary degree by the education provider

e) An unpaid official relationship with the education provider, for example, membership of an industry advisory board, or an honorary or adjunct appointment

f) Any other reason that may result in perceptions of partiality in decision-making

5.7 Confidentiality of Information

Panel members, members of the Accreditation Board and Engineers Australia Officers are required to steadfastly honour the confidentiality of information gleaned from submitted documentation and through discussions with staff from educational providers.

Accreditation visit reports are confidential between Engineers Australia and the Education Provider concerned, and should not be published without prior permission of both parties. Publication of excerpts are specifically not authorised. Where an Accreditation visit report is required to be disclosed to a third party for any reason, it should be reproduced in full, and both Engineers Australia and the Education Provider concerned should be notified.

5.8 Appeals

An Education Provider may appeal against a decision not to accord accreditation. The appeal must be made in writing to the Chief Executive of Engineers Australia, within two weeks of receiving the decision, and must state the grounds on which it is based. Grounds for appeal are normally limited to errors of fact or breach of the Policy, Criteria and/or Procedures as defined in the applicable documents of the Accreditation Management System. The Management Board of Engineers Australia will appoint a sub-committee to consider the matter and, if appropriate, conduct a further evaluation visit. Following the report of the sub-committee, the decision of the Management Board is final.

5.9 Complaints

Complaints from any source pertaining to the granting or continuation of accreditation of a program, including from students, can be lodged with the Accreditation Board. Anonymous complaints will not be accepted, although the identity of the complainant will be maintained as confidential to the Board.

5.10 Investigation of Concerns

If the Accreditation Board has good reason to believe that a program previously accredited no longer meets the criteria, it may notify the Education Provider of the reason/s for its concern and request a formal response. If the response is not considered adequate, the Accreditation Board may appoint an evaluation panel to visit the Education Provider and investigate the situation. If the panel is not satisfied, it will prepare a report recommending that accreditation be discontinued, with reasons. The Accreditation Board will forward the report to the Education Provider and invite further response, normally within 6 weeks. If the response is not satisfactory, accreditation will be discontinued.

In such case the Education Provider may appeal to the Management Board of Engineers Australia as outlined in the Appeals section of this document. In considering such an appeal the Management Board would not normally schedule a further visit, and would confine its consideration to issues of fact and process.

6.   Risk Management in Accreditation

6.1   Background

Outcomes-based accreditation has developed in synergy with modern risk based regulatory frameworks for education and training. Risk based frameworks are intended to enable innovation in education and learning, while minimising the non-productive aspects of regulation.

The accreditation environment is evolving due to, amongst other factors, program innovations encouraged by outcomes-based accreditation, new entrants to both the higher education and VET sectors, as well as the internationalization of education. The national and global education environment is increasingly open, and the rate of change is anticipated to increase in the foreseeable future as increasingly competitive education markets intersect with a greater appetite to employ technology in the delivery of educational products. Change is occurring across the engineering education and training sectors in Australia, in both public and private provider groups; it is also occurring globally, at a somewhat uneven pace. Inevitably, change is accompanied by an expansion of the risk profiles associated with these developments. It will be important for accreditation agencies to be prepared for these changes.

A proportionate risk management policy is required to address the changing risk environment, encouraging innovation in education and learning while continuing to meet its continuing obligations to all stakeholders.

6.2   The Nature of Accreditation Risk

Accreditation risk associated with educational innovation is the likelihood of the accreditation process:

• failing to accredit an innovative but otherwise sound educational program with good outcomes, or

• accrediting an innovative program that does not actually meet the required standards

The latter case represents a serious professional risk for the accrediting organisation and society at large. The former case questions the validity and currency of the accreditation processes.

The evolution of accreditation criteria will often lag innovation in program design and delivery, and if so, will lag change in the risk environment. Also, in an open environment it is not possible to foresee all possible risk scenarios.

The possibly disruptive nature of educational change (including educational technology and information resourcing), and the inevitable lag in the development of the tools of accreditation, requires a sophisticated approach to risk identification and management in the accreditation process.

The expanded risk profiles inherent in innovation and change may not continue to be

adequately managed by a simple application of the outcomes-based approach. Risk management in accreditation policy and practice should allow educational innovation while limiting the extremities of risky practices.

The level and impact of the second type of risk referred to above is likely to be higher for programs leading to the occupation of Professional Engineer, as compared with those for entry to practice as Engineering Associate and Engineering Technologist. For future practice as a Professional Engineer, the wide scope of accountability requires greater scrutiny of educational risk in the accreditation process. Complex socio-technical systems, characteristic of the modern engineering task, assume an education that provides theoretical and conceptual underpinnings in conjunction with a sound appreciation of the social context. Accreditation experience suggests that this breadth may be omitted by education programs with the higher risk profiles.

Engineers Australia has been a leading participant in the adoption of outcomes-based accreditation, encouraging innovations that improve education and vocational outcomes. Engineers Australia is also conscious that the consequences of failure of a program can be catastrophic for some stakeholders, including students and the community if the program fails to meet the necessary occupational capability outcomes. The policy on risk management remains reliant on outcomes-based assessments, but with a tightened focus on risk items that are assessed as being critically important to the success of education programs.

6.3   Policy on Risk Management

With these factors in mind, Engineers Australia will:

a) Apply outcomes-based accreditation in the accepted and expected manner

b) Apply enhanced evidentiary requirements to criteria identified as higher risk during review by the Evaluation Panel

c) Determine, in consultation with the Evaluation Panel, whether the risks require further analysis by a Risk Panel

d) Convene a Risk Panel to conduct a risk assessment of major risk items identified by the Evaluation Panel

e) Apply a prescriptive risk management approach to risk items that are determined by the Risk Panel to warrant such measures

f) Determine an appropriate risk mitigation strategy such as:

    i. Place limiting mandatory reporting requirements when according accreditation, if warranted by the risk assessment

ii.   Accord accreditation for limited durations (less than five years) if warranted by the risk assessment

The Accreditation Board reserves the right to determine an appropriate response to any significant risks or weaknesses identified by the Risk Panel following the outcomes-based accreditation review process.

7. Entry-to-Practice Masters Programs

7.1 Background

The Master Degree by Coursework, as distinct from the research-based Masters program, has manifested in a broad variety of formats and under a range of degree titles. The range of offerings has encompassed a wide range of specialist fields of engineering practice as well as broad professional domains.

The specified learning outcomes for these offerings vary considerably. Historically, coursework Masters programs have focused on professional development for qualified, practising engineering professionals and so have not been within the scope of the Engineers Australia accreditation system. Under the AQF programs of this type are normally designated as Masters Degrees (Extended).

In recent years, several providers have introduced Masters Degree programs mostly for entry-to-practice into the Professional Engineer category. Accordingly, Engineers Australia has developed policy to guide the accreditation of these programs.

7.2 Policy for Accreditation of Entry-to-Practice Masters Programs

The objective for Engineers Australia is to assess the Masters program against the published accreditation criteria and to determine with confidence that graduate capabilities incorporating the Stage 1 competencies will be demonstrated by all graduates. Masters programs can be considered for accreditation for the professional category of Engineering Technologist or Professional Engineer.

The post-school educational pathway taken by candidates admitted to Masters programs cannot, in most cases, be evaluated in detail. In consequence, the Education Provider must demonstrate that the Masters program design together with the admission requirements applied, will deliver the full set of specified learning outcomes at Masters level that incorporate the Stage 1 Competencies.

Engineers Australia has therefore determined that the minimum duration, post-secondary school, for an accredited entry to practice Masters degree shall be the equivalent of five years of full time study. In addition, the Masters programs must be designed with following features:

a) For a candidate admitted with a non-engineering bachelor degree, but satisfying entry requirements for mathematics and general sciences, the minimum study duration for an entry-to-practice Masters program aimed at the Professional Engineer outcome should be nominally three years of full time study.

b) Any required preparatory studies to build foundation skills and knowledge in engineering for candidates admitted with a non-engineering bachelor degree must be structured and formalised as an integrated component of the overall (nominally three

years full time) study program. A two-year full time structured Masters program preceded by *ad-hoc* preparation studies prescribed on a case-by-case basis would not be acceptable for accreditation.

c) For candidates admitted with an engineering qualification, it may be acceptable for advanced standing credits to be granted for part, if not all of this 1-year preparation period. For example, candidates with a recognised Engineering Technologist qualification, or with a recognised or non-recognised Bachelor of Engineering in the same field of engineering as the Masters program, or those with a first cycle three-year engineering qualification under the "3+2" model may be exempted from the preparation year and undertake a 2-year (full time) sequence of study to obtain the Masters degree outcome.

d) For programs that restrict intakes to particular categories of Bachelor Degree students or graduates (such as those from specific programs within their own institution and perhaps with prior professional practice experience requirements), the Masters study period may be reduced to less than two years (full time), but this would need to be considered on a case by case basis.

8. Accreditation of Programs Offered Offshore

8.1 Background

Australian education providers are now offering engineering degree programs that are taught wholly or partly at offshore locations. There are many possible arrangements under which the offshore programs may be offered.

In some instances, the Australian education provider operates a wholly-owned campus in another country (the "host country") and teaches the entire degree program there. Australian teaching staff may be seconded to the offshore campus, or travel to the offshore campus for limited periods to teach. For the latter arrangement, the program may be structured in modular form. Australian staff operating in this way are usually assisted by locally-recruited teaching staff. In other cases, teaching is conducted entirely by local staff; there may be an Australian program leader or campus head.

In other instances, the offshore campus may be a partnership between the Australian education provider and a local provider; there are many possible business configurations for a partnership of this type. The degree may be awarded jointly by the two institutions, or by the Australian provider alone.

In most cases, the degree is awarded by the Australian education provider alone. The degree award title and content may be differentiated from degree programs awarded at the home (Australian) campus. If the program award and content are specifically marketed as being indistinguishable (undifferentiated) from the home-campus offering, the graduate testamur will normally use the same degree title and will often carry no indication of where the studies leading to the degree were undertaken.

8.2 Policy on Accreditation of Offshore Programs

8.2.1 Modes of Study and Pathways

Engineers Australia requires that the accreditation criteria must be met for all modes of study and pathways by which a specific program can be completed. This requirement is specifically intended to include offshore arrangements.

It is therefore a requirement that documentation submitted for accreditation of a program should include information about all locations at which the program is offered, to the same depth and level of detail. Similarly, it is expected that the accreditation panel will visit all such locations and will interview staff and students at each.

8.2.2 Offshore Program Differentiated from Home Campus Offerings

Where the award title and content of the offshore program are different from any home program, the offshore program will necessarily be treated separately for accreditation evaluation. The offshore program must be identified as different from any related home

program in the testamur issued to graduates; for example, by the use of a different award title or identification of the delivery location.

8.2.3 Offshore Program Undifferentiated from Corresponding Home Campus Program

Where graduates of the offshore and the home programs hold identical testamurs, and the two are represented by the education provider as one (undifferentiated) program offered in multiple locations, then Engineers Australia will evaluate and accredit the program as a single entity. The accreditation criteria must be met at all locations or combinations of locations through which the program can be completed. The program cannot be accredited at any location unless it is accredited at all locations: by the education provider's own statement, there is no distinction.

8.2.4 Accreditation Documentation

The same accreditation procedures outlined in the accreditation Procedures Manuals (AMS-MAN-11 or AMS-MAN-21) will apply to offshore programs. Engineers Australia will receive documentation from the education provider and will arrange an accreditation visit to the offshore location.

It is particularly important that the documentation be submitted in accordance with the specified schedule for the visit so that any apparent difficulties can be identified in advance and the visit rescheduled if necessary.

8.2.5 Accreditation Fees for Offshore Visits

An accreditation fee will apply for offshore accreditation visits, and the education provider will be required to reimburse Engineers Australia for all additional costs associated with an offshore visit. This *may* include a charge for the time of panel members.

8.2.6 Concurrence of Host Country Agencies

Engineers Australia will undertake offshore accreditation activities only where these are acceptable to relevant authorities in the host country. On receipt of a request from an Australian education provider for offshore accreditation, Engineers Australia will inform the host country professional authority. Engineers Australia will respect the intention of any applicable Accord agreements if the host country is a signatory of the IEA.

8.3 Twinning Programs with Offshore Providers

8.3.1 Introduction

Twinning refers to formal arrangements with other providers - in this context, overseas institutions - whereby students undertake the initial stage/s of a program at the other institution and then transfer to an Australian university, with predetermined credit, to complete the program and qualify for the award.

Individual students can of course be admitted to a degree program with credit for studies

completed elsewhere. Twinning refers to a formally agreed arrangement with another provider that envisages significant cohorts of students and specifies credit, usually for an integral number of years of a program.

A twinning arrangement may involve recognition by the Australian university that the first (say) two years of an overseas institution's curriculum is equivalent to its own, or that a sub-degree qualification completed elsewhere will attract a defined level of credit and recognised entry point to the Australian program. Alternatively, it may involve the overseas institution specifically teaching the first (say) two years of the Australian university's curriculum, with or without some assistance from Australian staff.

Early twinning programs commonly involved a first year of study overseas, giving entry to a degree program in Australia at second-year level (known as a 1+3 program). Building on market experience, 2+2 programs have been progressively introduced and there are now examples of 3+1 programs. A final step, not yet in evidence, might be "4+0" in which an Australian university would franchise its entire program to an offshore provider and continue to award the Australian degree.

8.3.2 Policy on Twinning Programs

Where no more than two years of the program are completed overseas, substantial reliance is placed on the Australian-based third and fourth years as sufficient tests of the quality of the initial part of the program. Accreditation policy should still require the Australian university to explain what mechanisms it uses to assure quality in the overseas component.

Where the first three years are completed overseas and only the final year is taken in Australia, the approach to accreditation will depend on whether the overseas program follows identically the Australian curriculum, or whether it is an overseas-owned curriculum recognised as equivalent.

If the Australian university can certify that the third year of the overseas program follows essentially the Australian curriculum, if there are substantial formal examinations which are set and marked in common between the Australian and overseas programs, if other forms of assessment can be shown to be essentially identical, and if all these aspects are part of the formal twinning agreement, then it will normally not be necessary for Engineers Australia to visit the overseas establishment. It would be desirable to interview a sample of students on arrival in Australia.

In all other cases, Engineers Australia will require documentation through the Australian university and will conduct a visit to the overseas establishment, and an accreditation fee will apply. As in the case of wholly offshore programs, Engineers Australia will wish to liaise with the local authorities.

In all instances, the onus is on the university awarding the degree to demonstrate that the

accreditation criteria are met.

As with evaluations conducted within Australia, Engineers Australia reserves the right to investigate in depth how stated outcomes are actually achieved in practice.

In arranging any visit to an offshore campus or institution, Engineers Australia will consult with the accreditation authorities in the country concerned and will endeavour to secure their agreement and/or participation in the process.

9. Accreditation of Programs Delivered Off-Campus

9.1 Background

Engineers Australia recognises that educational techniques are continually advancing. At the same time, students are demanding increasing flexibility in how and when they engage with tertiary education. Some students enrol in combinations of on-campus, off-campus and on-line courses, where such options are available.

Engineers Australia also recognises that campus-based tertiary education in engineering uses an ever-expanding range of on-line technologies for all aspects of the educational process. On-campus students frequently 'attend' classes by watching recordings of lectures, and engage in on-line supported group work. Most assessments are now submitted on-line.

Engineers Australia wishes to encourage and promote new approaches to learning and teaching, limited only by the requirement that the knowledge and attributes appropriate for entry to professional engineering practice can reliably be shown to have been attained by all graduates of the program.

Accordingly, Engineers Australia is not unnecessarily prescriptive about particular criteria that might apply to off-campus or on-line education, or any combination of study modes. It does, however, reserve the right to investigate in depth how stated program outcomes are actually achieved in practice.

Engineers Australia will consider for accreditation entry to practice programs offered in any mode of study, or combination of modes. Where there are parallel on-campus and off-campus modes, and a common program award title and content, these will be treated as alternative pathways in a common accreditation process.

9.2 Policy on Accreditation of Programs Delivered Off-Campus

Off-campus study modes may be denoted by such terms as external, distance, on-line, and flexible. Their common aspect is that students are required to spend zero or minimal physical time on a campus of the Education Provider. Nevertheless, off-campus students should have equivalent learning experiences to those of on-campus students, including engagement with fellow students and teaching staff, a full range of experimental and project work, and opportunities to provide feedback on their educational experiences.

Programs offered in off-campus modes are subject to the same accreditation processes and requirements as campus-based programs. Each program and pathway will be considered on its merits against the accreditation criteria.

Context of this Document in the AMS

This document, AMS-POL-01 Accreditation Principles, is located within the hierarchy of the Accreditation Management System as depicted in the table below.

PRINCIPLES	*Statement of accreditation principles (policy)*	
This document	**AMS-POL-01**	**Accreditation Principles**

STANDARDS	*Standards against which compliance is evaluated*	
	EA Stage 1	**Competency Standards** *(at Engineers Australia website)*
	AMS-STD-10	**Accreditation Standard – Higher Education**
	AMS-STD-20	**Accreditation Standard – VET Competency Programs**

MANUALS	*Instructions for accreditation*	
	AMS-MAN-10	**Accreditation Criteria User Guide – Higher Education**
	AMS-MAN-11	**Procedures Manual – Higher Education**
	AMS-MAN-20	**Accreditation Criteria User Guide – VET**
	AMS-MAN-21	**Procedures Manual – VET**

HANDBOOK	*Contextual information on professional practice*	
	AMS-HBK-01	**Engineering Handbook**

Revision History of this Document

Date	Version	Description	Approved
15 December 2017	1.0	Initial release	Chair, Accreditation Board
26 November 2018	2.0	Inclusion of policy on twinning (8.3); minor editorial corrections	Chair, Accreditation Board