



QAA

Subject benchmark statement

Engineering

2010

© The Quality Assurance Agency for Higher Education 2010

First published 2000

Second edition 2006

Revised edition 2010

ISBN 978 1 84979 224 0

All QAA's publications are available on our website www.qaa.ac.uk

Registered charity numbers 1062746 and SC037786

Contents

Preface	
Foreword	1
Introduction	2
Nature and extent of the subject	2
The characteristics of engineering graduates	3
Engineering at bachelor's and master's level	3
Engineering degrees and professional practice	4
Professional accreditation of academic programmes	5
The international context for standards	6
The standards	7
Teaching, learning and assessment	8
Appendix A: Membership of the review group for the Engineering benchmark statement 2006	10
Appendix B: Engineering benchmarking group membership	11

Preface

Subject benchmark statements provide a means for the academic community to describe the nature and characteristics of programmes in a specific subject or subject area. They also represent general expectations about standards for the award of qualifications at a given level in terms of the attributes and capabilities that those possessing qualifications should have demonstrated.

This subject benchmark statement, together with others published concurrently, refers to the **bachelor's degree with honours**.¹ In addition, some subject benchmark statements provide guidance on integrated master's awards.

Subject benchmark statements are used for a variety of purposes. Primarily, they are an important external source of reference for higher education institutions (HEIs) when new programmes are being designed and developed in a subject area. They provide general guidance for articulating the learning outcomes associated with the programme but are not a specification of a detailed curriculum in the subject.

Subject benchmark statements also provide support to HEIs in pursuit of internal quality assurance. They enable the learning outcomes specified for a particular programme to be reviewed and evaluated against agreed general expectations about standards.

Subject benchmark statements allow for flexibility and innovation in programme design and can stimulate academic discussion and debate upon the content of new and existing programmes within an agreed overall framework.

Subject benchmark statements may also be of interest to prospective students and employers seeking information about the nature and standards of awards in a given subject or subject area.

The relationship between the standards set out in this document and those produced by professional, statutory or regulatory bodies for individual disciplines will be a matter for individual HEIs to consider in detail.

Subject benchmark statements are initially developed and then reviewed and revised by a group of subject specialists drawn from, and acting on behalf of, the subject community. Membership of these groups will be found in the published statements. In both the development and revision of statements, full consultation with the wider academic community and stakeholder groups is undertaken, details of which are published on the QAA website.

QAA publishes and distributes this subject benchmark statement and other subject benchmark statements developed by similar subject-specific groups.

¹ Level 6 in *The framework for higher education qualifications in England, Wales and Northern Ireland* (2008) and level 10 in the *Scottish Credit and Qualifications Framework* (2001).

The Disability Equality Duty (DED) came into force on 4 December 2006 in England, Scotland and Wales. The DED requires public authorities, including HEIs, to act proactively on disability equality issues. The DED complements the individual rights focus of the Disability Discrimination Act and is aimed at improving public services and outcomes for disabled people as a whole. Responsibility for making sure that such duty is met lies with HEIs.

The Equality and Human Rights Commission has published guidance² to help HEIs to implement the DED and provides illustrative examples on how to take the DED forward. HEIs are encouraged to read this guidance when considering their approach to engaging with components of the Academic Infrastructure³, of which subject benchmark statements are a part.

Additional information that may assist HEIs when engaging with subject benchmark statements can be found in the *Code of Practice (revised) for providers of post-16 education and related services*,⁴ and also through the Equality Challenge Unit which is established to promote equality and diversity in higher education.

In October 2010, the Equalities Act came into force, which brings together existing pieces of legislation for a range of protected characteristics, including disability. The key provisions of the Act include a new Single Equality Duty which will be placed on public bodies. This would replace existing statutory duty. The Act will also include a simplified definition of disability. The Government has published regulations for the proposed specific duties to accompany the new Equality Duty, which, at the time of writing, is out for consultation. HEIs are advised to check the websites of the Equality and Human Rights Commission⁵ and the Equality Challenge Unit⁶ for the latest updates.

² Copies of the guidance *Further and higher education institutions and the Disability Equality Duty, Guidance for Principals, Vice-Chancellors, governing boards and senior managers working in further and higher education institutions in England, Scotland and Wales* may be obtained from www.dotheduty.org/sectoral-guidance.asp.

³ An explanation of the Academic Infrastructure, and the roles of subject benchmark statements within it, is available at www.qaa.ac.uk/academicinfrastructure.

⁴ Copies of the *Code of Practice (revised) for providers of post-16 education and related services*, published by the Disability Rights Commission, may be obtained from: www.equalityhumanrights.com/uploaded_files/code_of_practice__revised__for_providers_of_post-16_education_and_related_services__dda_.pdf. The Equality and Human Rights Commission is currently consulting on a revised edition of the guidance – further details are available at: www.equalityhumanrights.com/legal-and-policy/equality-act/equality-bill-consultations/#Live_consultation_Draft_Code_of_Practice_on_Further_and_Higher_Education.

⁵ Equality and Human Rights Commission: www.equalityhumanrights.com.

⁶ Equality Challenge Unit: www.ecu.ac.uk.

Foreword

This edition represents a minor revision to the 2006 version of the subject benchmark statement for engineering to encompass updates to the *UK Standard for Professional Engineering Competence* (UK-SPEC) in 2009 and 2010 by the Engineering Council. Rather than reproducing the required learning outcomes from the UK-SPEC in full in the subject benchmark statement, readers are now directed to the document on the Engineering Council's website.⁷ The 2010 review has also presented an opportunity to make a small number of amendments to the main text of the subject benchmark statement for the purposes of clarification and factual updating.

The 2006 review of the subject benchmark statement was undertaken by a group of subject specialists drawn from and acting on behalf of the subject community and overseen by the Quality Assurance Agency for Higher Education (QAA). The revision process included a full consultation with the wider academic community and stakeholder groups. For this 2010 edition, QAA consulted members of the 2006 review group and major stakeholders to confirm that only a minor revision was required. The statement was revised on the basis of contributions from the review group members and the Engineering Council. QAA is very grateful to those involved for their continuing support to the Engineering benchmark statement.

November 2010

⁷ www.engc.org.uk/ecukdocuments/internet/document%20library/AHEP%20Brochure.pdf.

1 Introduction

1.1 The QAA brief for the subject benchmark statement is to produce 'generic statements which represent general expectations about standards for the award of honours degrees in engineering'.

1.2 This subject benchmark statement defines the academic standard expected of graduates with an engineering degree. The defined learning outcomes are those published by the Engineering Council in the *UK Standard for Professional Engineering Competence (UK-SPEC): The Accreditation of Higher Education Programmes (2010)*. These learning outcomes, also described by the engineering community as 'output standards', have evolved from the first edition of the subject benchmark statement for engineering (QAA, 2000) and the Engineering Professors' Council (EPC) *Engineering Graduate Output Standard (EPC, 2000)*. By using the published learning outcomes from the Engineering Council in the revised subject benchmark statement in 2006, programme providers were now able to use a single set of learning outcomes. This approach was made possible by the widespread acceptance of the UK-SPEC and strong support from the academic community to work towards a single, unified standard when the benchmark statement was revised. In deciding that the UK-SPEC standard could be adopted as the subject benchmark statement, particular consideration was given to the nature and status of non-accredited degrees.

1.3 The learning outcomes in this subject benchmark statement are expressed for the threshold level that engineering students would be expected to have attained upon graduation. It is anticipated that there will be many programmes where this threshold level will be exceeded.

1.4 This subject benchmark statement covers engineering degrees at the honours level and at the integrated master's level (MEng), as defined in *The framework for higher education qualifications in England, Wales and Northern Ireland (FHEQ)*. The subject benchmark statement also includes guidance on the applicability of the learning outcomes to degrees specifically designed as a basis for registration as an Incorporated Engineer (IEng). (Further guidance on the character and standards of Foundation Degrees can be found in the *Foundation Degree qualification benchmark*.⁸)

1.5 Programme providers should be able to use subject benchmark statements to establish standards for a diverse range of programmes, hence encouraging innovation and creativity in curriculum design. For programmes that are interdisciplinary in nature it will be appropriate to draw on a number of subject benchmark statements. It is important to note that the use of the subject benchmark statement on its own in programme design is not sufficient to secure professional accreditation.

2 Nature and extent of the subject

2.1 Engineering is concerned with developing, providing and maintaining infrastructure, products, processes and services for society. Engineering addresses the complete life-cycle of a product, process or service, from conception, through design and manufacture, to decommissioning and disposal, within the constraints imposed by

⁸ www.qaa.ac.uk/reviews/foundationDegree/benchmark/FDQB.pdf

economic, legal, social, cultural and environmental considerations. Engineering relies on three core elements, namely scientific principles, mathematics and 'realisation'. Scientific principles clearly underpin all engineering, while mathematics is the language used to communicate parameters, model and optimise solutions. Realisation encapsulates the whole range of creative abilities which distinguish the engineer from the scientist; to conceive, make and actually bring to fruition something which has never existed before. This creativity and innovation to develop economically viable and ethically sound sustainable solutions is an essential and distinguishing characteristic of engineering, shared by the many diverse, established and emerging disciplines within engineering.

3 The characteristics of engineering graduates

3.1 The creative way of approaching all engineering challenges is being seen increasingly as a 'way of thinking' which is generic across all disciplines. In order to operate effectively, engineering graduates thus need to possess the following characteristics. They will:

- be rational and pragmatic, interested in the practical steps necessary for a concept to become reality
- want to achieve sustainable solutions to problems and have strategies for being creative, innovative and overcoming difficulties by employing their knowledge in a flexible manner
- be numerate and highly computer literate, and capable of attention to detail
- be cost and value-conscious, and aware of the social, cultural, environmental, health and safety, and wider professional responsibilities they should display
- appreciate the international dimension to engineering, commerce and communication
- when faced with an ethical issue be able to formulate and operate within appropriate codes of conduct
- be professional in their outlook, capable of team working, effective communicators, and able to exercise responsibility.

4 Engineering at bachelor's and master's levels

4.1 There is general agreement among the UK engineering community, professional and academic, that the Engineering Council accreditation criteria meet the general expectations for an honours degree in engineering. On this basis an honours degree will correspond to the generic qualifications descriptor for the bachelor's degree with honours in the FHEQ.⁹ Graduates from both accredited and non-accredited degree programmes will be expected to have achieved the academic standard as set out in this subject benchmark statement.

4.2 An MEng is an integrated master's programme in engineering which provides an extended and enhanced programme of study; it is designed to attract the more able student. The period of study is typically equivalent to at least four years of academic

⁹ Bachelor's degrees with honours are at FHEQ level 6.

learning (five years in Scotland) and the programme of study should be both broader and deeper than a corresponding BEng with honours (Hons).

4.3 The MEng is different in principle from MSc programmes in engineering which are designed as stand-alone programmes. (Further guidance on the nature of different types of master's degrees can be found in *Master's degree characteristics* published by QAA in 2010.¹⁰) MEng programmes are usually designed, with reference to the UK-SPEC, to give an enhanced preparation for professional practice. There should be increased breadth and depth of study beyond that of a corresponding BEng (Hons), and an increased emphasis on industrial relevance. Project work within an MEng programme would usually include both an individual research/design project and a more wide-ranging group project with strong industrial involvement. Increased breadth can be provided by study of additional technical subjects and by study of, for example, business, management and industrial topics. Increased depth can be provided by both specific study at master's level and integrative study of work already undertaken at honours degree level (level 6). These components may typically be distributed throughout the later stages of an integrated programme of study, with relevant learning outcomes associated with the integration of broad technical aspects, and with working in a cooperative venture.

4.4 The MEng should not be designed or perceived as simply an 'add-on' year to a BEng (Hons). The programme of study should be designed as an integrated whole from entry to completion, although some of the earlier parts may be delivered in common with a parallel BEng (Hons). MEng degrees meet the expectations of the level 7 descriptor in full with the additional period of study at the lower level typically meeting the expectations of the descriptor at level 6. Progression to MEng programmes should be subject to performance criteria that indicate likely progression to the more demanding outcomes expected for the award of a master's degree. Transfer between programmes leading to BEng (Hons) and MEng programmes is usually possible.

4.5 The FHEQ identifies the outcomes required for the award of master's degrees. Programme designers should ensure that students awarded an MEng will have undertaken adequate work at master's level to warrant this qualification. It will typically include study equivalent to at least four full-time academic years, of which study to at least one full-time academic year is at level 7. Normally, this level 7 component will be equal to at least the equivalent of one academic year of study assessed at master's level and be distributed over more than one year of study. Self-certification of the FHEQ against the *Framework for Qualifications of the European Higher Education Area* (FQ-EHEA) was completed in 2008 and verified the compatibility of the FHEQ against the FQ-EHEA. It concluded, among other things, that integrated master's degrees, like the MEng, are compatible with the completion of the second cycle within the overarching FQ-EHEA.

5 Engineering degrees and professional practice

5.1 There are many different types of engineering degree programme, but all are designed to equip their graduates with knowledge, understanding and skills which will enable them to begin a professional career in some aspect of engineering or technology. Professional recognition is by way of membership of a professional engineering

¹⁰ www.qaa.ac.uk/academicinfrastructure/benchmark/masters.

institution and registration with the Engineering Council as an Incorporated Engineer or Chartered Engineer. The Engineering Council's requirements for registration incorporate a competence framework which is applicable to most forms of professional engineering employment.¹¹ Engineering degrees provide the intellectual foundations for eventual professional registration. The formation process for an engineering professional continues after graduation by a mixture of work-related education and training and on-the-job experience, enabling the demonstration of competence and commitment. However, not all graduates will proceed with a professional career in this way, for these attributes also make them attractive to many different sorts of employer in industry, finance, consultancy and the public services.

5.2 Professional engineering occupations have many different characteristics. A useful broad distinction is the one the engineering profession makes between Incorporated Engineers and Chartered Engineers. Both use creativity and innovation and are involved in activities such as design, production, construction, operation and disposal. Both are also likely to be involved in commercial and technical management. However, Chartered Engineers are likely to be more concerned with the development and application of new technologies, concepts, techniques and services, while Incorporated Engineers will be particularly concerned with the application and management of current technology.

6 Professional accreditation of academic programmes

6.1 The majority of engineering degree programmes are designed with a view to their being accredited by a professional engineering institution. This is how the engineering profession confirms that a programme of study provides the knowledge, understanding and skills necessary to underpin eventual professional competence. The focus of accreditation is primarily on the outcomes achieved. Factors which have a bearing on these, such as approaches to teaching and learning, assessment strategies, human and material resources, quality assurance arrangements, and entry profiles will all be examined.

6.2 The Engineering Council sets the overall requirements for accreditation, and licenses the professional engineering institutions to undertake the accreditation within these, interpreting them as appropriate for their own sector of the profession. Accreditation is a rigorous process which has been refined over many years and is well recognised and respected. With the steady growth in international mutual recognition accords, accreditation is gaining increasing currency as a transferable measure of degree standards.

¹¹ The *UK Standard for Professional Engineering Competence* (2010) sets out five main areas of competence, each covering a number of different aspects:

A Use of general and specialist engineering knowledge and understanding

B Application of appropriate theoretical and practical methods

C Technical and commercial leadership and management

D Effective interpersonal and communication skills

E Commitment to professional standards and recognition of obligations to society, the profession and the environment.

See www.engc.org.uk/ecukdocuments/internet/document%20library/UK-SPEC.pdf

6.3 Engineering is an enabling discipline which continues to expand steadily to embrace an ever-increasing range of knowledge and skills. Accreditation is intended to encourage innovation in programme design. The acceptance and encouragement of novelty in programme design is one of the challenges confronting professional bodies in articulating their requirements and maintaining standards. Mechanisms exist for organising a joint accreditation visit involving several professional institutions where appropriate, and the current framework of accreditation standards is broad enough to accommodate a range of such programmes. This is particularly the case for multidisciplinary or interdisciplinary programmes.

7 The international context for standards

7.1 UK engineers are engaged in projects all over the world, and many will spend time working overseas. Engineering underpins most exported goods and many services. The export of engineering services alone earns the UK a net £2 billion a year, more than any other service activity outside the financial sector.

7.2 Higher education is equally a global activity. UK universities have long attracted students from all over the world, in engineering as in all other subjects. This is only one part of the flow of students around the world, as many countries are actively promoting their higher education systems worldwide. Within Europe, the Bologna Process has given added impetus to promoting mobility within a European Higher Education Area, with the associated development of a European Higher Education Qualification Framework.

7.3 There is therefore an increasing interest in the outcomes of different countries' engineering degrees. Since 1989, the UK has been a member of international accords, comprising engineering degree accreditation bodies in a number of countries, who agreed to recognise each others' accreditation decisions. The number of countries interested in joining these accords has grown, to include several Asian and some European countries, and interest has shifted from the accreditation process to the outcomes of accredited programmes.

7.4 There have been similar developments within Europe. The drive within the Bologna Process to develop a European Higher Education Qualification Framework has drawn attention to the importance of learning outcomes, as much as of programme structures or length. Engineering has been a pilot area in this respect. The UK participated in an EU-funded project resulting in the development of the EUR-ACE framework, strongly influenced by the UK-SPEC that allows universities with accredited degrees to demonstrate the international standing of these awards.¹² The Engineering Council has been granted a licence to award the EUR-ACE Label to UK engineering degrees accredited since November 2006.¹³ A significant aspect of the EUR-ACE framework is that it aligns with the higher education qualifications process as part of the Bologna Process.

¹² www.enaee.eu/enaee/presentation.htm.

¹³ www.engc.org.uk/education--skills/accreditation/european-accreditation.

8 The standards

8.1 The UK-SPEC sets out a competence framework for engineering professionals which, as we have seen, is applicable to all those in graduate engineering occupations. It provides for engineering degree programmes to be accredited if they provide the learning outcomes which will underpin eventual professional competence. The required learning outcomes are set out in the UK-SPEC: *The Accreditation of Higher Education Programmes* published by the Engineering Council.¹⁴ They were developed from the first subject benchmark statement for engineering (QAA, 2000), and refined the general and specific learning outcomes that it contained. The development reflects the UK-SPEC competence standards, with their increased emphasis on issues such as sustainable development and ethics.

8.2 The learning outcomes described in the UK-SPEC are applicable to all degrees providing a foundation for engineering registration. The learning outcomes of a bachelor's degree with honours, the most widely undertaken programme, provide a basis for employment, research or for further study to master's level. Graduates from these programmes who wish to become Chartered Engineers will need to undertake further learning to master's level. The learning outcomes for integrated master's degrees are designed to ensure that graduates will have acquired the educational foundation for registration as Chartered Engineers. The learning outcomes for degree programmes designed particularly as a basis for registration as an Incorporated Engineer (IEng degrees) are also set out in the UK-SPEC.

8.3 The statements are threshold statements; they describe the general expectations for what should be achieved by all those who graduate from these programmes. It is recognised, however, that most students will reach a higher level of attainment.

8.4 The standards do not constitute a prescribed curriculum. Programme providers have complete freedom over the way they design their programmes to deliver these outcomes. Moreover, the balance between the different outcomes, particularly the specific learning outcomes, will vary according to the nature and aims of individual degree programmes.

8.5 Some degrees will be designed as joint degrees, combining engineering with another subject such as business studies or a foreign language. In this case the learning outcome statements will still be an essential reference point for the engineering component of the programme. Other degrees may be genuinely interdisciplinary, but even for these the learning outcome statements equally provide a reference point, and should enable them to be accredited if desired.

8.6 The UK-SPEC requirements have been framed to be potentially applicable to all types of engineering degrees, in the same way as the original subject benchmark statements. Like those, they offer a framework for the design and development of all engineering degree programmes, whether or not accreditation is sought for these. They identify the subject matter of these programmes, and provide information to stakeholders about the content and standard of graduate output. For all these reasons, and because a single statement minimises the danger of conflicting interpretations, either in universities or in accrediting agencies, it is appropriate for the UK-SPEC output standards to serve also as the subject benchmark statement for engineering.

¹⁴ www.engc.org.uk/ecukdocuments/internet/document%20library/AHEP%20Brochure.pdf.

9 Teaching, learning and assessment

9.1 There should be an holistic approach to the design of the curriculum. The methods of teaching, learning and assessment should be constructed so that the learning activities and assessment tasks are aligned with the learning outcomes that are intended in the programme.

Teaching and learning

9.2 Existing engineering programmes have been developed over many years and deploy a diverse range of learning, teaching and assessment methods to enhance and reinforce the student learning experience. This diversity of practice is a strength of the discipline. Whichever methods are employed, strategies for teaching, learning and assessment should deliver opportunities for the achievement of the learning outcomes, demonstrate their attainment and recognise the range of student backgrounds. The methods of delivery and the design of the curriculum should be updated on a regular basis in response to generic and discipline-specific developments, taking into account educational research, changes in national policy, industrial practice and the needs of employers.

9.3 Curriculum design must be informed by research, scholarship and an understanding of the potential destinations of graduates, and include the use of industrially-relevant applications of engineering. For students to achieve a satisfactory understanding of engineering, the expectation is that they will have significant exposure to hands-on laboratory work and substantial individual project work. The curriculum should include both design and research-led projects, which would be expected to develop in graduates both independence of thought and the ability to work effectively in a team. Teaching needs to be placed within the context of social, legal, environmental and economic factors relevant to engineering.

9.4 Features of teaching and learning within an MEng programme that set it apart from a BEng (Hons) include deepening of technical understanding, additional emphasis on team/group working, an increase in the use of industrially-relevant applications of engineering analysis, and an enhanced capability for independent learning and work. While some of these may in part be included within some BEng (Hons) programmes, and can be developed through formal teaching and interactive classroom learning, within MEng programmes case studies, design work and projects are typically utilised more extensively, especially during the final year when they build upon the learning of the previous years. These differences in programme design encourage and expect graduating MEng students to have greater capacities for independent action, accepting responsibilities, formulating ideas proactively, dealing with open-ended and unfamiliar problems, planning and developing strategies, implementing and executing agreed plans, leading and managing teams where required, evaluating achievement against specification and plan, and decision-making. The inclusion of such elements within the design of programmes should aid in preparing students for subsequent leading roles in technical and/or managerial activities. Periods of work in industry may also be used to supplement the formal study through, for example, sandwich courses. Such programmes may well be of extended duration to ensure that all of the academic requirements and components have been covered.

9.5 All degree programmes in engineering provide guidance and support for their students but there is an expectation that MEng students will be increasingly self-reliant, particularly during the later stages of their programme.

9.6 Teaching and learning resources, and other help and advice, are available from the Higher Education Academy (HEA) Engineering Subject Centre.¹⁵

Assessment

9.7 An implication of defining output standards for engineering degrees is that, normally, all students graduating with such degrees will be able to demonstrate that they have achieved these standards. Programme providers need to make clear how this is ensured.

9.8 Assessment is the means by which students are measured against benchmark criteria and should also form a constructive part of the learning process. There should be a programme-level approach to assessment that ensures output standards are met. Further information and guidance on assessment has been published by the HEA Engineering Subject Centre, *Assessment of Learning Outcomes*. This work aligns with the subject benchmark statement for engineering.

¹⁵ www.engsc.ac.uk.

Appendix A: Membership of the review group for the Engineering benchmark statement 2006

Professor Helen Atkinson	University of Leicester (nominated by the Office of Science and Technology)
Janet Berkman	EEF
Professor David Bonner (Chair)	University of Hertfordshire
Dr Sarah Carpenter	The Higher Education Academy Engineering Subject Centre
Professor Graham Davies	University of Birmingham (nominated by Royal Academy of Engineering)
Professor John Dickens	The Higher Education Academy Engineering Subject Centre
Günter Heitmann	Technical University Berlin
Professor Fred Maillardet	Engineering Professors' Council
Professor Alistair Sambell	University of Northumbria
Mr Richard Shearman	Engineering Council UK
Mr David Young (deceased)	Universities UK
Observer	
Professor Ian Freeston	Engineering Council UK

Appendix B: Engineering benchmarking group membership

Details provided below are as published in the original subject benchmark statement for engineering (2000).

Dr R Best	South Bank University
Professor D Bonner	University of Hertfordshire
Mr R Chinn	WS Atkins Consultants Ltd
Dr W Cousins	University of Ulster
Dr T Davies	University of the West of England, Bristol
Professor K Fidler	The University of York
Professor E Fisher	University of Newcastle upon Tyne
Professor J Flower *	University of Warwick
Professor D Green	University of Glasgow
Mr D Heffer	Southampton Institute
Dr D Morrey	Oxford Brookes University
Dr D Pollard (Chair)	University of Surrey
Dr R Prager	University of Cambridge
Professor A Purvis	University of Durham
Professor N Syred	University of Wales, Cardiff
Professor G Taylor	Leeds Metropolitan University
Professor C Thomas	University of Birmingham

* (resigned due to ill health)

The Quality Assurance Agency for Higher Education
Southgate House
Southgate Street
Gloucester
GL1 1UB

Tel 01452 557000
Fax 01452 557070
Email comms@qaa.ac.uk
Web www.qaa.ac.uk

QAA 362 11/10