

Competence Profiles – Guidance for applicants and Assessors

PART 2 – INDUSTRY CLASSIFICATIONS (HE) HIGHER EDUCATION

Introduction

The provision of higher education in the UK was, until 1992, predominantly the concern of universities and polytechnics. In 1992, the so-called ‘new’ universities were formed, mainly by renaming the polytechnics. Since then, these new universities have been competing on equal terms with the traditional or so-called ‘old’ universities and, as such, appear in many respects to be similar.

A decade on, the disparities are even less distinct – but there are still some differences of emphasis that have been slower to change. These are mainly due to a greater importance still being placed on teaching in new universities and on research in old universities. Operationally, there are also differences in staff gradings and in the terminology used for courses. Even within a particular university, old or new, the differences in responsibility between individuals with the same job title or designation can be significant.

As a guide, in new universities teaching contact hours are typically between 10 and 16 per week, compared with old universities whose teaching contact hours can vary between 4 and 10 hours per week. Extreme cases will exist, but teaching contact hours depend on the extent of other duties such as administration and course management or research. In old universities there are more research-biased academics, often with few teaching duties. However, even within new universities research-active academics with light teaching loads are common, although the numbers of such staff are fewer than in old universities.

The educational emphasis and therefore the culture of new and old universities can also be different. The relative amounts of teaching and research conducted in a particular university are often a good indicator of the source and nature of its income. New universities tend to have a greater reliance on Higher Education Funding Council for England (HEFCE) mainstream teaching funding, whereas old universities secure more Engineering and Physical Sciences Research Council (EPSRC) research funding. Both types of university secure funding from other sources in varying amounts and this will have a significant bearing on their operation.

Using the SARTOR 3 designations, new universities in general tend to offer more IEng-level degrees whereas the old universities now tend to concentrate on courses leading to CEng type degrees. The majority of degrees taught at old universities are full-time, single-subject courses, whereas the degrees taught at new universities are both full-time and part-time, and modular in content. In general, the relationship developed with industry and whether they are involved in applied or fundamental research will be determined by the University. Typically, old universities may have a sharper focus, whereas new universities have a broader approach. In general, there also tends to be more Teaching Company Scheme (TCS) activity within new universities. In this document, any lack of reference to other characteristics implies that these apply to both types of university.

Requirements for election or transfer to Member

The staff gradings used in new and old universities are subtly different. Typical job titles are shown below but these lists are not exhaustive and in some situations a title might imply status rather than responsibility.

<u>Old Universities</u>	<u>New Universities</u>
Dean of Faculty	Dean of School or Faculty
Head of Department	Head of Department or Division
Professor	Professor
Reader	Reader
Senior Lecturer	Principal Lecturer
Lecturer B	Senior Lecturer
Lecturer A	Lecturer
Assistant Lecturer	Teaching Assistant

The titles will vary between different universities depending on the management structure, particularly at the more senior levels. Also, job titles may not even accurately reflect the duties and responsibilities of some individuals. For example, with the increasing pressure on universities to collaborate with local businesses and to generate external income, the posts of Business Officer and Business Manager are now commonplace. These individuals may not follow any particular academic profile but often operate as senior academics involved in teaching and research.

Therefore, when judging the suitability of an individual for Membership, it is important to note the characteristics of the particular university in which he/she works, as in some cases a new university may appear to have the characteristics of an old university. Variation can also occur across different Schools or Faculties within the same university. Many Schools and Faculties, in both new and old universities, comprise a range of different disciplines and it may therefore sometimes be difficult to ascertain the actual mechanical engineering content of an individual's workload.

Assessment of Competences

Competences should be assessed on the basis of actual duties and responsibilities rather than attempting to deduce them from job titles or gradings. The competence descriptors that follow are generic to both new and old universities and avoid reference to job title. In time, universities will lose the 'old' and 'new' classifications and, like businesses, establish their individuality by what they do and how well they do it. The requirements for Membership of the Institution for engineering academics, irrespective of the type of establishment in which they operate, are therefore reflected in the competence profiles as outlined below.

Competence statement A

Examples of situations or activities that may give mechanical engineers in higher education the opportunity to achieve and demonstrate professional competence in this area include:

- Delivery, at the minimum level of first degree for a significant proportion (say 60%) of the applicant's annual teaching commitment. In this context the degree courses must be accredited by the Institution or contain a significant technological and mathematical content.
- Responsibility for developing specialist modules (courses) for undergraduate degree programmes.
- Development of innovative methods.

- Responsibility for the development of curriculum, course syllabus, written or oral examinations and coursework and quality assessment of engineering courses.
- Evidence of the recognition of teaching quality (by peers, students or QAA).
- Acquisition of higher degrees.

Competence statement B

Examples of situations or activities that may give mechanical engineers in higher education the opportunity to achieve and demonstrate professional competence in this area include:

- Supervision of level 3 (final year) projects or involvement with postgraduate project work (MSc) or research supervision.
- Industrial consultancy and/or an involvement with Teaching Company Scheme (TCS).
- Specialist 'open' short course development.
- Specialist 'closed' course development for specific industrial companies.
- Involvement in laboratories and equipments, and design of laboratory experiments for students.
- Acting as an internal and/or external examiner for first degrees, masters' degree or PhD theses.
- External course Examiner appointments (s).
- Involvement with pan European teaching contracts.
- The supervision of research projects funded by industry or other external bodies.
- Writing research proposals aimed at industry and/or the research council.
- Participation in industrial consultancy activities and attending progress meetings and seminars attended by industrial partners.
- Membership of panels or committees preparing standards, e.g. BSI/ISO Technical Committees or Technical Sub-Committees.
- Publication of technical refereed papers in international journals and/or international conference proceedings.
- Academic supervision of TCS programmes.
- The development and delivery of short courses aimed at industry and participation in in-company training.
- External panel membership for course/programme validation.
- Membership of editorial board for an academic journal.
- Maybe evidence of refereed publications.

Competence statement C

Examples of situations or activities that may give mechanical engineers in higher education the opportunity to achieve and demonstrate professional competence in this area include:

- Management and planning of budgets concerning teaching or laboratories
- Responsibility for Award or Field management, Recruitment, Franchise or Industrial liaison.
- Responsibility for laboratory development.

- Control of assessment procedures in respect of taught modules, especially those subjected to external moderation.
- Membership of Faculty and University academic committees.
- Acting as mentor or appraiser of other academic staff
- Acting as Personal Tutor to students
- Time tasking activities
- Participation in University committees, including membership of School or Faculty Academic Boards or Committees and Research or Degrees Committees
- Responsibility for course, programme or award management and quality assessment of taught modules, especially those subjected to external moderation
- Responsibility for recruitment and admissions, placements or industrial liaison
- Acting as Director of Studies or supervisor of research, e.g. for research students or research assistants

Competence statement D

Examples of situations or activities that may give mechanical engineers in higher education the opportunity to achieve and demonstrate professional competence in this area include:

- Effective communication with students
- The delivery of taught material, orally, electronically and/or through distance learning
- Demonstrate oral and written communication skills.
- Ability to present and discuss ideas and plans.
- The publication of papers in refereed academic journals
- Involvement in the negotiations relating to establishment of TCS or consultancy contracts.

Competence statement E

Examples of situations or activities that may give mechanical engineers in higher education the opportunity to achieve and demonstrate professional competence in this area include:

- Demonstrate adherence to the rules of conduct of the profession whilst carrying out teaching, research and related duties.
- Demonstrating awareness of health and safety issues, relevant legislation, risk management and environmental matters
- Involvement with the IMechE, neighbourhood Engineers or local schools and community activities.
- Strong commitment to continuing professional development (this may be demonstrated through research and other forms of subject development or maybe pedagogic in nature).

Assessors should be aware that SARTOR 3 interprets Continuing Professional Development (CPD) as commencing at the point where Chartered status is attained; therefore applicants are not required to provide a record of courses attended, etc., when applying for corporate membership.

Examples of CPD activities recognised by the Institution as acceptable include:

- extra qualifications such as an MBA, Diploma in Engineering Management
- any relevant technical or business courses
- conducting or attending workshops to enhance the requisition of knowledge
- attending, presenting or participating in seminars and conferences
- presenting lectures
- writing technical papers
- reading technical articles and journals
- distance or open learning
- secondments and job rotation
- updating in own and other fields of work
- Institution meetings or events
- active IMechE committee work
- learning a foreign language
- involvement in government activities
- community and charity work
- research and consultancy

Requirements for election or transfer to Fellow

An applicant for election or transfer to **Fellowship** is expected to have achieved eminence in several aspects of their work. This grade is normally appropriate for applicants with professional titles, Readers, Senior Lecturers (pre-92 universities) or those who perform senior management roles, for example Head of Department or Dean, in their university. A selection of the following, or equivalent, features may distinguish these applicants.

- Significant experience of postgraduate research (as evidenced through publications) or as a grant holder for research or TCS contracts.
- Responsibility for strategic decisions in respect of Award development , including the management of a suite of accredited awards or awards with high technological content.
- Budget holder for a school of Engineering or a significant element of its devolved budget.
- Extensive record of External Examiner appointments or demonstrable postgraduate examination experience.
- Membership of national and/or international committees in the field of engineering education.
- Professional institution membership as an office holder at Regional level or Council/Committee member at national level.

In exceptional cases, where there is a prime facie case of outstanding academic distinction, a Fellowship interview may be recommended for an applicant who is a Lecturer in a pre-1992 university or a Senior Lecturer in a post-1992 university.

Fellowship applications may be expected from engineers in higher education who have held for at least three years the grades or posts listed below. However, the Institution recognises that Lecturers who have acted for a similar period in a senior capacity in the running of academic courses, or are widely respected in industrial consultancy or research are also eligible to apply.

The following senior academic posts are considered likely to meet the requirements for the class of Fellow:

Dean of School/Faculty
 Assistant Dean and/or Senior Manager
 Head of Division/Department
 Professor
 Reader

Exceptionally, consideration would also be given to applicants who have held the following posts for a minimum of three years.

Principal Lecturer (clarification of rôle essential, as Senior Lecturers in some universities perform similar duties)

Director of Research Centre/Group (clarification of rôle essential)

All applicants will generally have significant responsibility for resource (financial and staff). In addition, applicants will be members of a senior management team, or the equivalent, responsible for the control and direction of the School/Faculty in which they belong. If research biased, applicants will lead a financially autonomous group or team. Depending on the scale of operation and management structure, these rôles may be combined. Irrespective of teaching or research bias, applicants will be considered to be experts in their subject area and command authority by their peers in the field.

For candidates applying for direct election to the class of Fellow, a Professional Review Report similar to that required for the class of Member would be required, in addition to an interview. In particular, this report must contain additional supporting evidence detailing:

- The position of senior responsibility held by the applicant
- The applicant's contribution to the professional development of young engineers
- How the applicant intends to keep up to date regarding developing technologies, from both technical and commercial standpoints

Finally, a Development Action Plan detailing a future programme of CPD would be required from applicants in either category (transfer from Member or direct election).