

# Professional Engineer Registration and the IET

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# Outline of presentations

- Outline of the role of the Engineering Council, UK (ECUK) and Professional Engineering Institutions such as the IET in setting and maintaining standards
- International recognition
- Overview of ECUK documents “UK-Specification for Professional Engineering Competence (UK-SPEC)” and “Accreditation of Higher Education Programmes”
- UK-SPEC competence statements for Chartered Engineer (CEng)
- IET and its Academic Accreditation procedures

# Presentation Content

- Engineering Council (EC)
- Specifications of Competence (UKSPEC)
- IET
- IET and UKSPEC

Academic Accreditation

Registration Process

# Engineering Council

# About Engineering Council (EC)

The Engineering Council (EC) is an organisation set up by Royal Charter to regulate the engineering profession in the UK.

# About EC

- EC's mission is to set and maintain realistic and internationally recognised standards of professional competence and ethics for engineers, technologists and technicians, and to license competent institutions to promote and uphold the standards.

# About EC

It achieves this by working through a number of engineering institutions to provide the standard for assessment of

- individuals
- education programmes
- professional development programmes.

# About EC

The engineering profession in the United Kingdom is regulated by ECUK through 36 engineering Institutions who are licensed to put suitably qualified members on the ECUK's Register of Engineers.



# About EC

The Register has four sections:

- Chartered Engineer
- Incorporated Engineer
- Engineering Technician
- ICT Technician.

These titles are protected by the Engineering Council's Royal Charter and may only be used by registrants.

# About EC

- All candidates for registration as Chartered Engineer, Incorporated Engineer, Engineering Technician or ICT Technician must
  - satisfy the competence standards set by EC
  - be members of the appropriate Licensed Member Engineering Institution.

# About EC

Applicants must show that they

- have a satisfactory educational base
- have undergone approved professional development
- must demonstrate their professional competence against specific criteria (at interview)

# Professional Qualifications

The expression “Qualifications” can refer to two different things:

1. Educational (tertiary level) qualifications underpinning engineering knowledge and understanding.

Accreditation of these is based on evidence of graduates overtaking defined programme outcomes through the study of relevant subject areas

2. Compliance with relevant professional standards (competence).

In the UK the competences are specified in “Standard for Professional Engineering Competence” (UK-SPEC), and cover the application of engineering knowledge, problem-solving, leadership, communication skills and ethical issues.

# Educational Qualifications

1. Educational (tertiary level) qualifications underpinning engineering knowledge and understanding.

There are three agreements covering mutual recognition of these:

- Washington Accord. Recognises substantial equivalence in the accreditation of qualifications underpinning professional engineer
- Sydney Accord. Recognises substantial equivalence in the accreditation of qualifications underpinning engineering technologist
- Dublin Accord. Recognises substantial equivalence in the accreditation of qualifications underpinning technician engineering

# Accord Signatories

Washington Accord: Australia, Canada, Chinese Taipei, Hong Kong, Ireland, Japan, Korea, Malaysia, New Zealand, Singapore, South Africa, UK, USA, Turkey.

Sydney Accord: Australia, Canada, Hong Kong, Ireland, New Zealand, South Africa, UK, USA.

Dublin Accord: Canada, Ireland, South Africa, UK.

# Professional Standards

2. Compliance with relevant professional standards (competence).

There are agreements covering the recognition of individual practising engineers. That is, an engineer who is deemed to meet the agreed standard of competence in one country should be only minimally assessed prior to registering in another country party to the agreement.

The UK, through the Engineering Council, is engaged with a number of these:

# International Agreements

Within Europe:

- European Federation of National Engineering Associations (FEANI).  
(FEANI covers 31 countries, representing 3.5 million engineers)
- European Network for Accreditation of Engineering Education (ENAE).  
(ENAE has 17 full and 2 associate member organisations. It administers the EUR-ACE quality label.)



# International Agreements

Outside Europe:

- International Register of Professional Engineers (IntPE)
- International Register of Engineering Technologists (IntET)
- Asia Pacific Economic Cooperation (APEC) Engineering Agreement

# UK-SPEC

# Specification for Professional Engineering Competence (UK-SPEC)

This is the standard for recognition of professional engineers and professional engineering technicians in the UK. The standard is published by EC on behalf of the engineering profession.

# Competence Statements

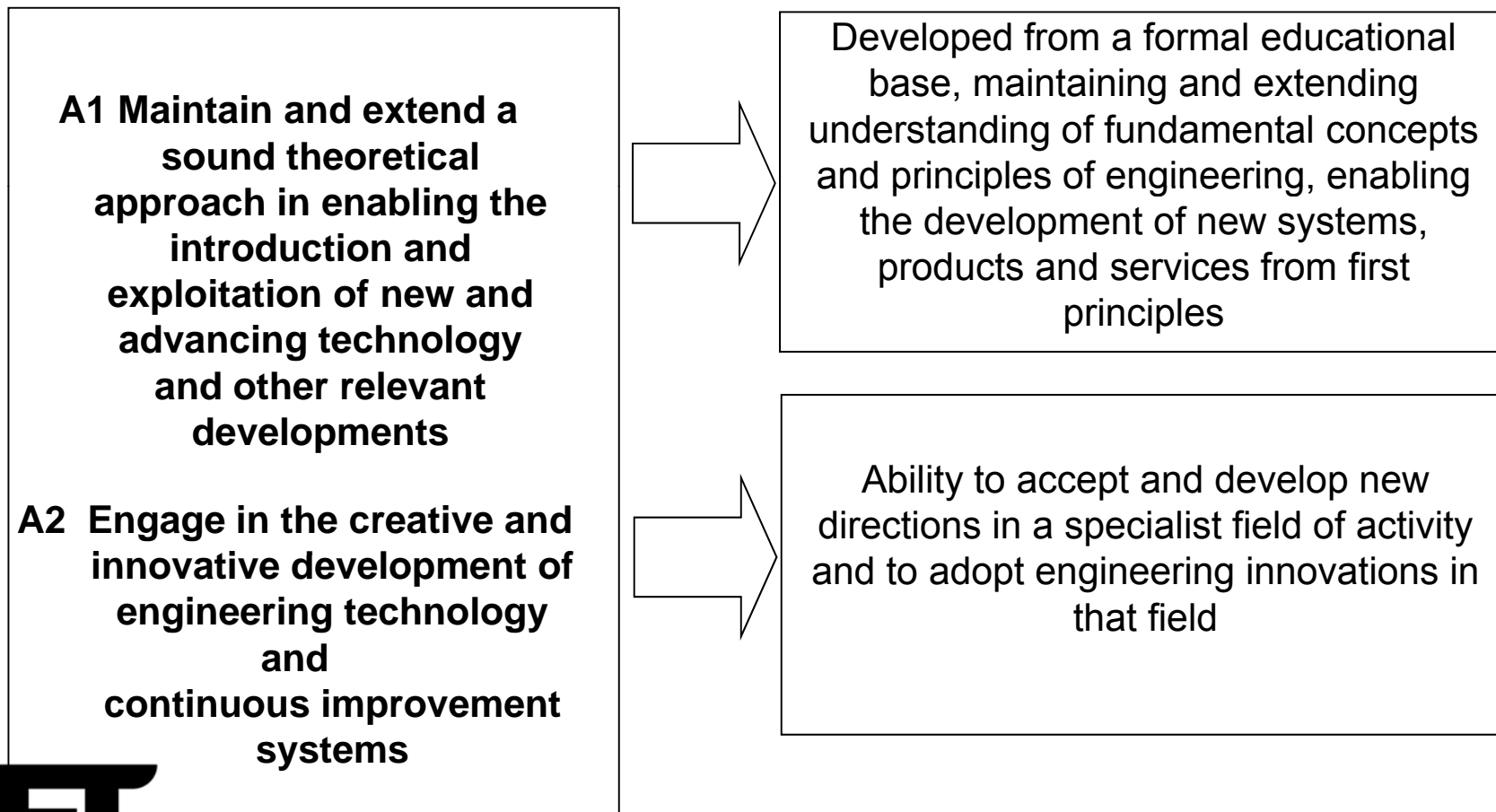
- UK SPEC emphasises the importance of competence at the point of registration
- Competence statements
  - 16 CEng and IEng
  - 13 EngTech, 14 ICT*Tech*

# Required competences and commitment

Competence	A	Knowledge and Understanding
	B	Application to Practice
	C	Leadership/Management/Supervision
	D	Interpersonal Skills
Commitment	E	Commitment to Professional Standards

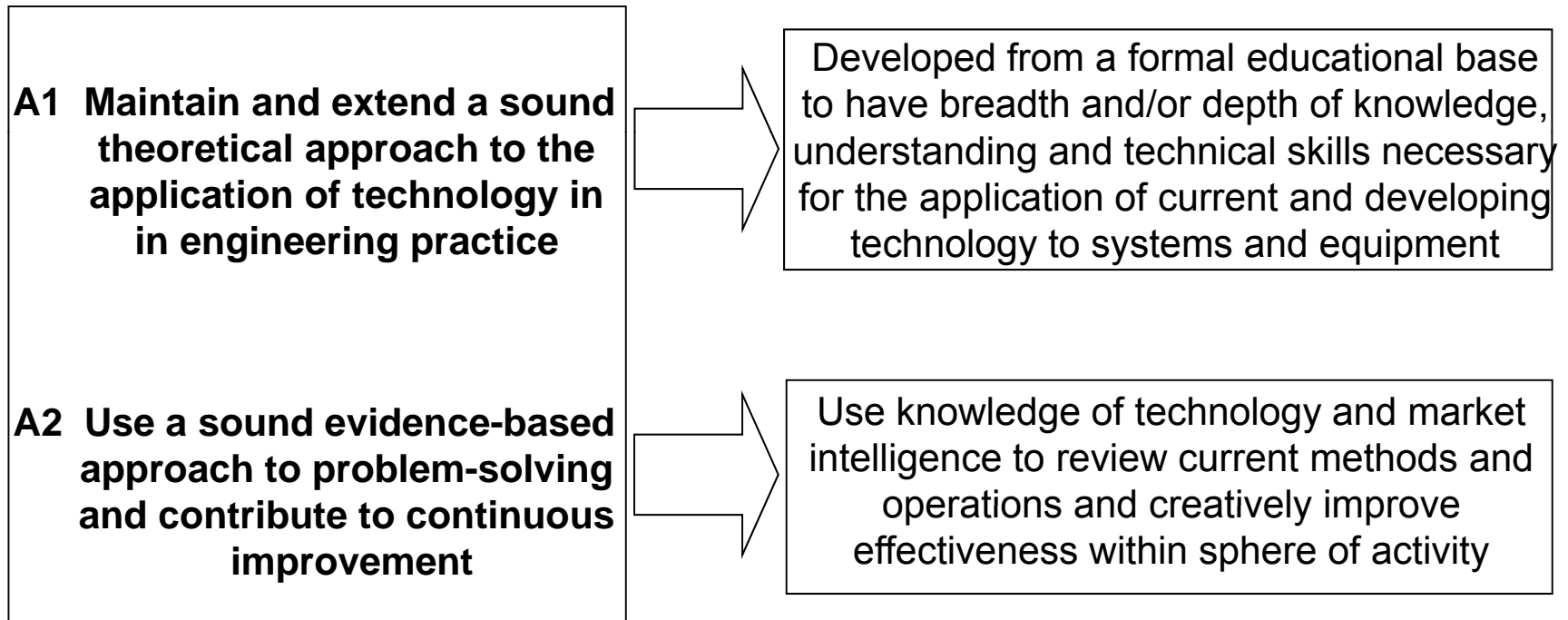
# CEng : Competence A

## ■ Knowledge, Understanding & Innovation



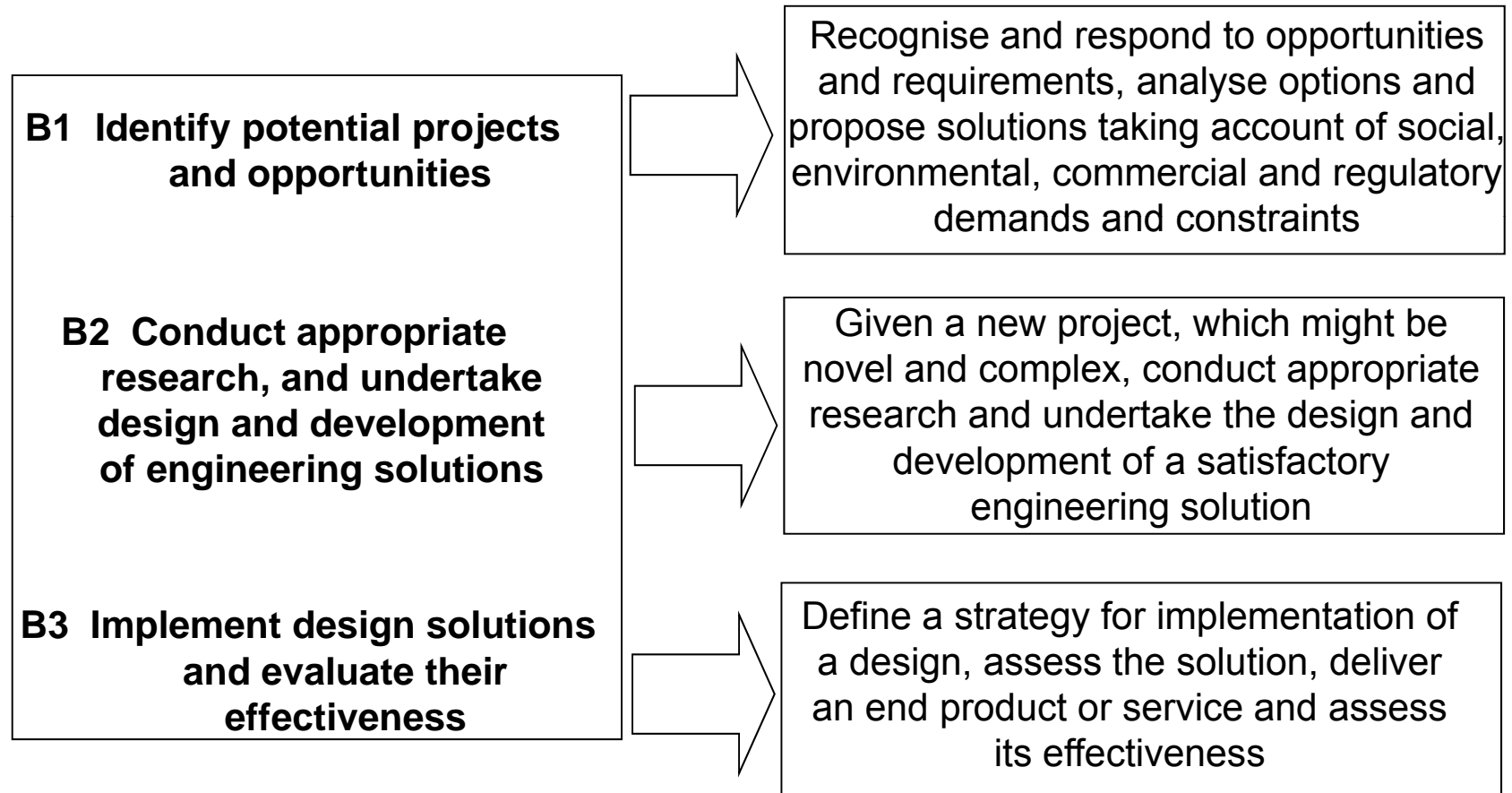
# IEng : Competence A

## ▪ Knowledge and Understanding



# CEng : Competence B

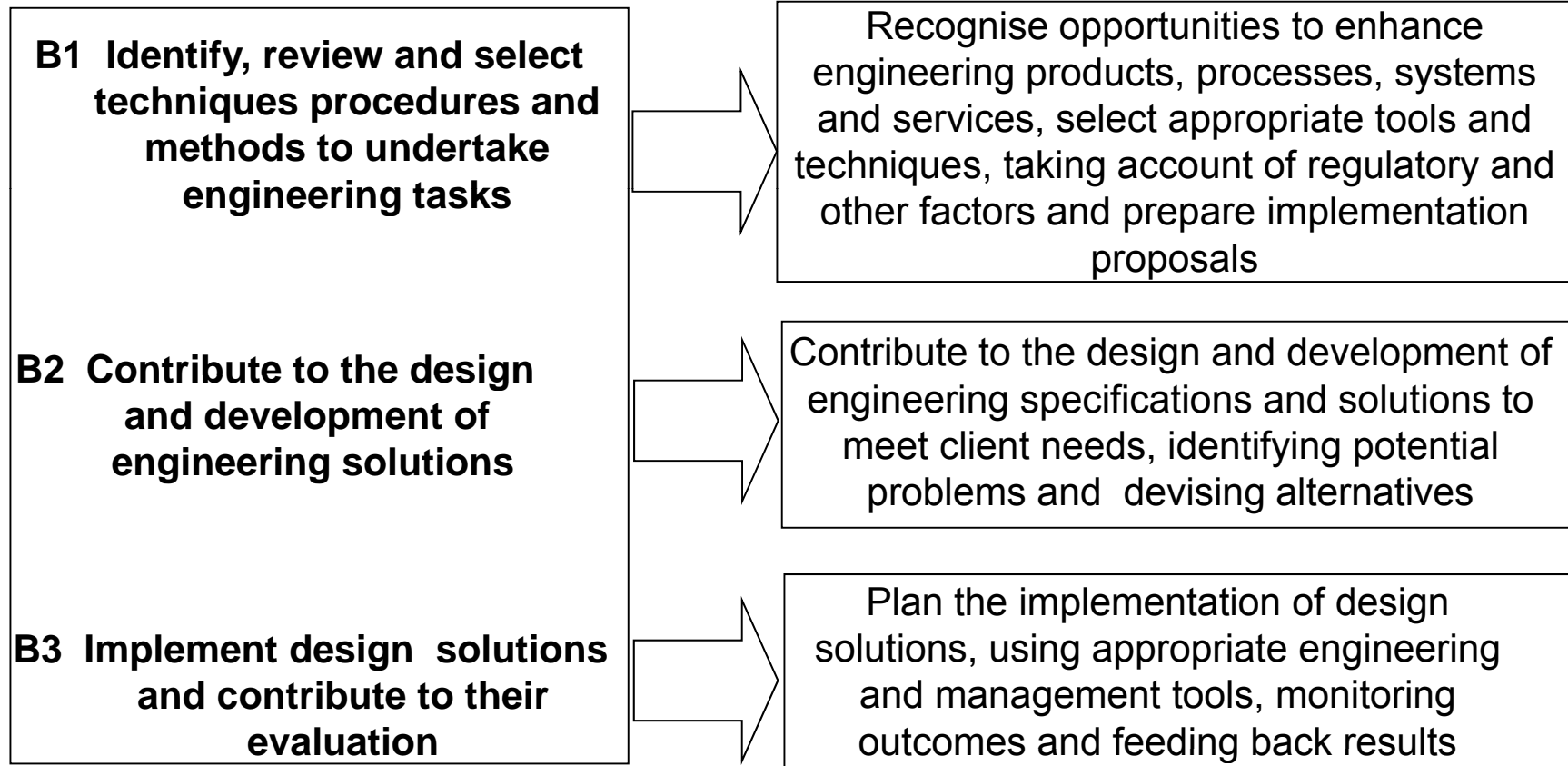
## ▪ Application to Practice





# IEng : Competence B

## ▪ Application to Practice



# CEng : Competence C

## ▪ Leadership / Management / Supervision

**C1 Plan for effective project implementation**

Plan projects, understanding the drivers and objectives of the business. Define and agree work objectives, timescales, human and material resources, identify plan deviations and take corrective actions

**C2 Plan, budget, organise, direct and control tasks, people and resources**

Prioritise and manage the use of available resources, including significant budgets or contracts, the work of professional staff and significant control of own time

**C3 Lead teams and develop staff to meet changing technical and managerial needs**

Lead technical programmes, project teams or specialist staff. Develop staff in an environment of technical and managerial changes

**C4 Bring about continuous improvement through quality management**

Continuous improvement in productivity, effectiveness and efficiency. Includes procedures, processes, project and financial control, communications, reporting and training

# IEng : Competence C

## ▪ Leadership / Management / Supervision

**C1 Plan for effective project implementation**

Plan activities against objectives. Define and agree work objectives, estimating timescales and resource requirements, human, material and financial

**C2 Manage the planning, budgeting and organisation of tasks, people and resources**

Prioritise and manage the available resources both technical and human against technical, time and financial objectives

**C3 Manage teams and develop staff to meet changing technical and managerial needs**

Manage and prioritise personal tasks and those of other members of the team under their engineering responsibility

**C4 Manage continuous quality improvement**

Manage own work, and the work of others to maintain and improve quality, evaluating the outcome and recommending improvements

# CEng & IEng : Competence D

## ▪ Interpersonal Skills

**D1 Communicate with others at all levels in English**

Written and oral skills enabling communication in English with a wide range of customers and suppliers, peers, seniors and juniors within and outside of their employing organisation

**D2 Present and discuss proposals**

Present proposals for work programmes and projects in a clear and authoritative manner, and be persuasive when discussing details, variations and implementation

**D3 Demonstrate personal and social skills**

Considerable skill in personal relations and interpersonal communications. Enthusiasm and commitment to the work. A good team player with the ability to attract, select and build an appropriate team. Lead staff effectively, retain trust and help their development

# CEng & IEng : Competence E

## ▪ Professional Conduct

**E1 Comply with relevant codes of conduct**

Know and apply industry standards and codes of practice. Evidence of acceptable standards of personal conduct and ethics

**E2 Manage and apply safe systems of work**

Demonstrate a clear personal responsibility for the safety of themselves, subordinates, colleagues, other employees and members of the general public

**E3 Undertake engineering activities in a way that contributes to sustainable development**

Ensure as far as possible that work contributes to environmental, economic and social needs of the community

**E4 Carry out continuing professional development necessary to maintain and enhance competence in own area of work**

Substantive evidence of a career Development Action Plan for self and subordinates. Evidence of commitment to maintaining and developing skills

# The IET



The Institution of **Engineering and Technology**

[www.theiet.org](http://www.theiet.org)

# The IET

- Merger of IEE and IIE in Spring 2006
- Over 150,000 members in over 127 countries
- Offices in London, Beijing, Hong Kong and Bangalore, etc
- Network of 100 local groups
- [www.theiet.org](http://www.theiet.org)

# What is The IET?

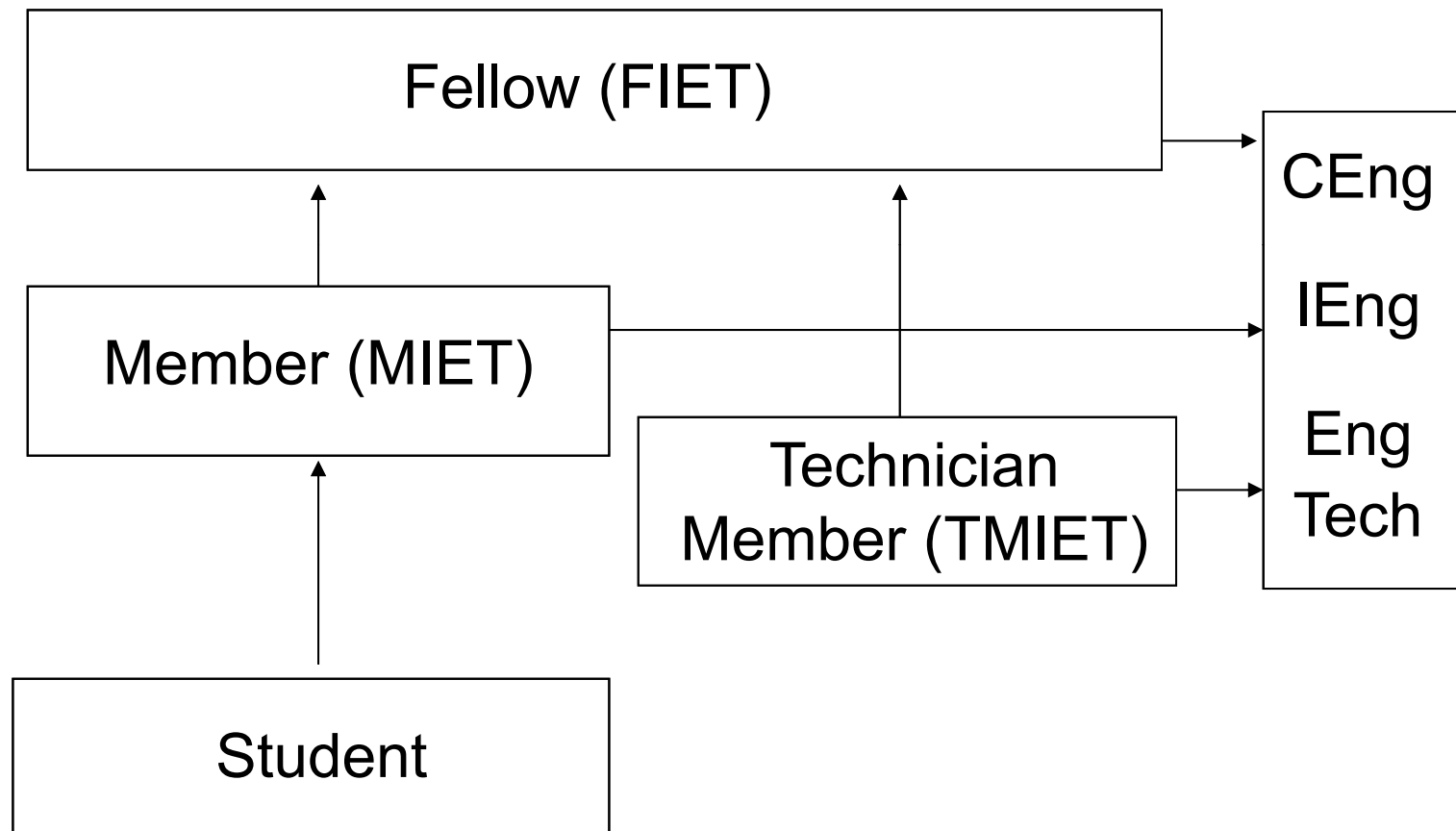
- A 21<sup>st</sup> Century Institution serving a global community engaged in engineering and technology
- Encompassing a wide range of disciplines including
  - electrical                      electronics
  - communications              manufacturing
  - computing                      software
  - robotics                         nanotechnology
  - mechanical                      structural
- Reflecting the interdisciplinary nature of engineering and technology



# The Role of The IET

- Knowledge provider
- Renowned technical publisher
- High quality events and courses provider
- Qualifying body
- Voice of the profession

# IET Membership categories



# MIET

- Open to all who can demonstrate by education and experience they are engaged professionally in one of the fields within the scope of the IET

# FIET

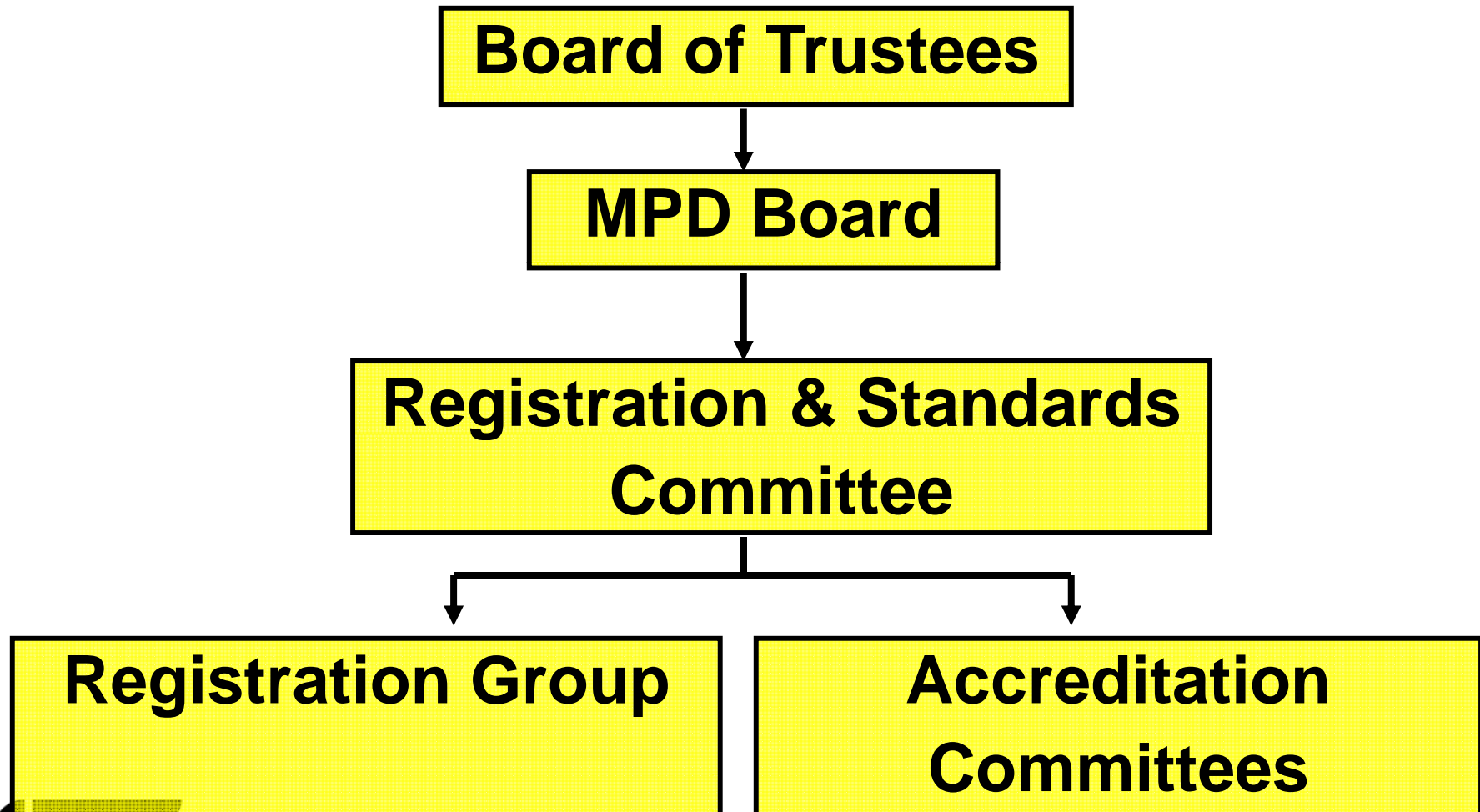
- Significant responsibility, sustained achievement and exceptional professionalism demonstrated for at least five years

# Fellowship Criteria

Areas of achievement could include:

- Personal responsibility
- Operational and strategic
- Original research
- Successful development of a business
- Recognised leadership
- Outstanding service
- Public Service

# IET-Overall Structure



# Registration Group (RG)

RG is responsible for the integrity and maintenance of the processes and procedures used in the registration process.

Includes the selection and training of all those (volunteers) involved in the process and auditing the process.

# Accreditation Committees

AC is responsible for the processes and procedures used in the accreditation of:

- Academic Programmes
- Company Professional Development Programmes

This is achieved via two committees:

- Academic Accreditation Committee
- Professional Development Committee



# Academic Accreditation

# People & Numbers

- 20 Accreditation Committee
- 50 Team
- 4 Staff
- 1000 accredited programmes
- 100 Universities (85 UK)

# Academic Accreditation

- Education Programmes are accredited to partially or fully meet the educational requirements for UK-SPEC.
  - Foundation Degree
  - Bachelors Degree
  - Integrated Masters degree (MEng)
  - 1 year Masters degree (MSc)

# UK SPEC - Summary of Education Requirements

## CEng

- Accred MEng
- Accred BEng (Hons) + Further Learning
- BEng(Hons) + \* Further Learning
- \*or International equivalent

## IEng

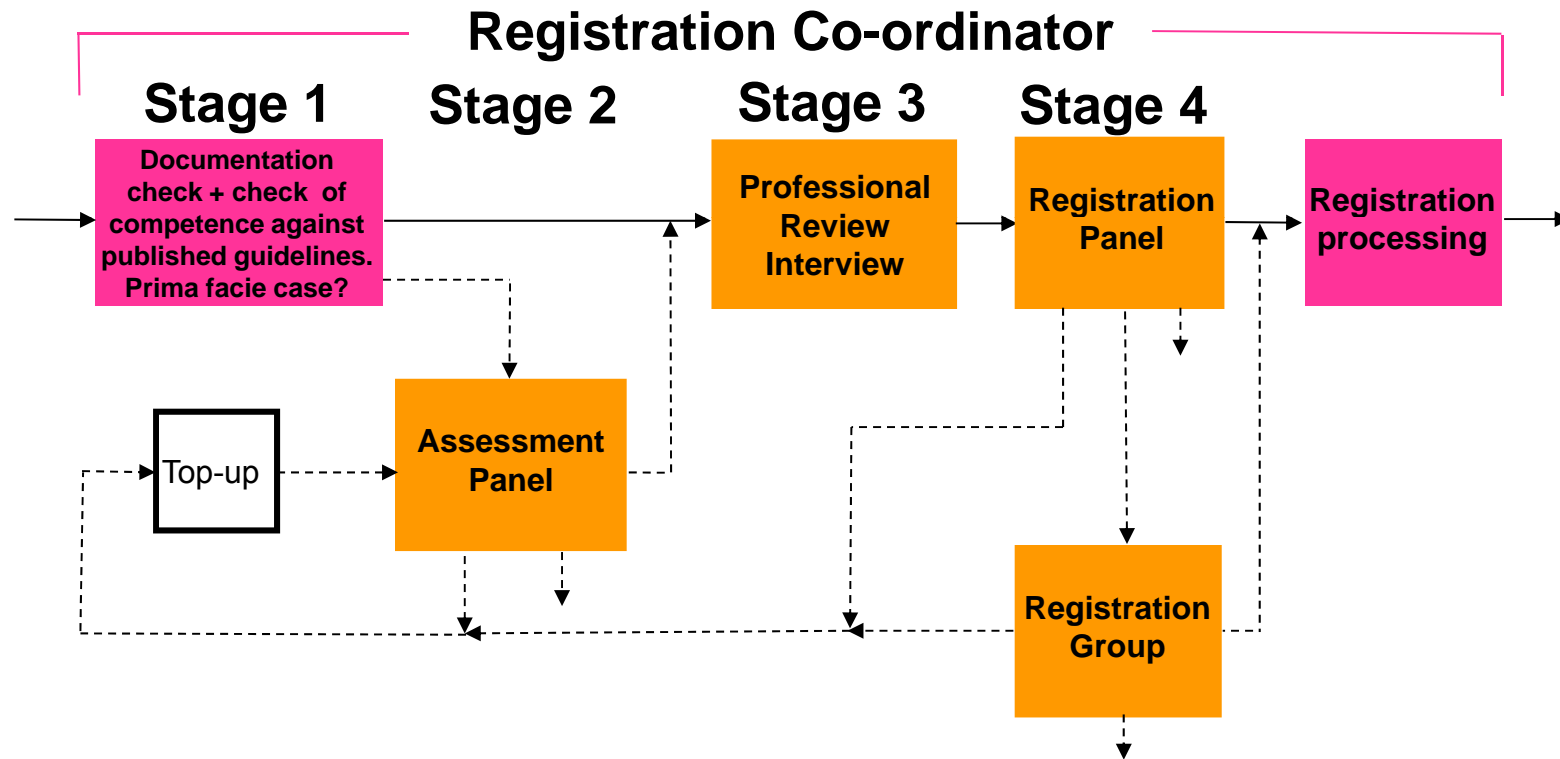
- Accred BEng(Hons)
- BSC or BEng + Further Learning
- HND or HNC + Further Learning
- or International equivalent

## EngTech

- an approved Advanced [Modern] Apprenticeship
- a relevant NVQ Level 3 or SVQ
  - a relevant NC/D
  - an approved work based learning route
- assessed experience

# Registration Process

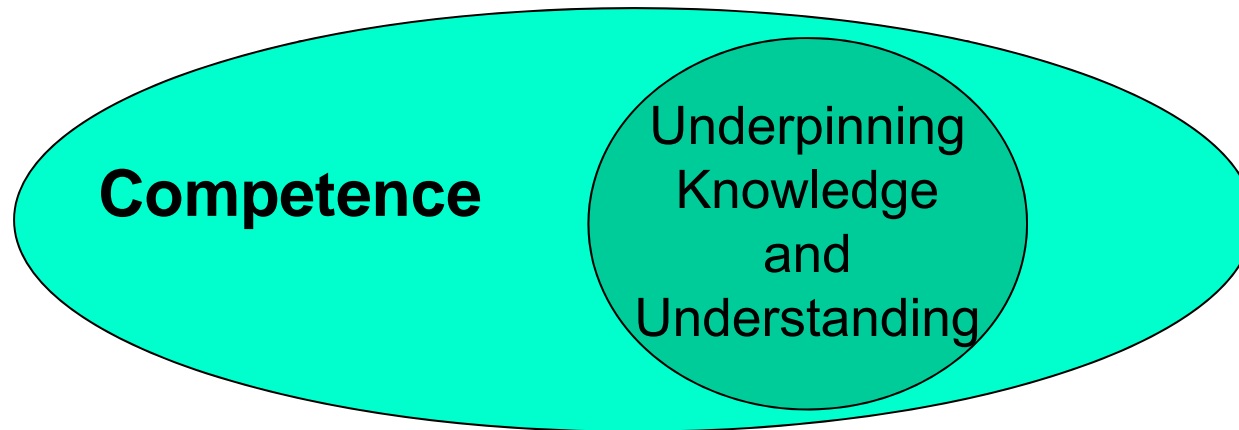
# IET Registration Process



# Underpinning Knowledge and Understanding

**IEng: accredited**  
**Bachelor level degree**

**EngTech: accredited**  
**Diploma level**



**CEng: accredited**  
**Masters level degree**

If the candidate does not hold the exemplifying qualification, equivalent UK&U should be demonstrated

# Initial Professional Development

- Development of a competency profile from training, learning and experience which is verified by supporting evidence
- Accredited IPD scheme is the fast track route ✓



# Professional Development

- At least 3 to 4 years of experience in industry
- Maintain a record of your competence achievements
- Register your intention to apply complete Form RPD
- Regularly review your progress with a Mentor or Sponsor
- UK SPEC requires evidence to demonstrate competence at the point of registration

# Range of qualifications

- Chartered Engineer ( CEng )
  - introduction of new technology
- Incorporated Engineer ( IEng )
  - apply new technology in everyday practice
- Engineering Technician ( Eng Tech )
  - apply proven techniques and procedures to the solution of practical engineering problems

# Engineering Technician

Engineering Technicians are involved in applying proven techniques and procedures to the solution of practical engineering problems. They carry supervisory or technical responsibility, and are competent to exercise creative aptitudes and skills within defined fields of technology. They contribute to the design, development, manufacture, commissioning, operation or maintenance of products, equipment, processes or services. They are required to apply safe systems of work.

# Incorporated Engineer

Incorporated Engineers are characterised by their ability to maintain and manage applications of current and developing technology and may undertake engineering design, development, manufacture, construction and operation. Incorporated Engineers are variously engaged in technical and commercial management and possess effective interpersonal skills.

# Chartered Engineer

Chartered Engineers are characterised by their ability to develop appropriate solutions to engineering problems, using **new** or existing technologies, through **innovation**, **creativity** and **change**. They might develop and apply **new** technologies, promote advanced designs and design methods, introduce **new** and more efficient production techniques, marketing and construction concepts, pioneer **new** engineering services and management methods. Chartered Engineers are variously engaged in technical and commercial **leadership** and possess effective interpersonal skills.

# Sources & Links

- UK-SPEC – [www.engc.org.uk/ukspec](http://www.engc.org.uk/ukspec)
- Professional Registration – [www.theiet.org/professionalregistration](http://www.theiet.org/professionalregistration)
- Registration Process – [www.theiet.org/process](http://www.theiet.org/process)
- Professional Registration Advisor – [www.theiet.org/advice](http://www.theiet.org/advice)
- EngTech – [www.theiet.org/engtech](http://www.theiet.org/engtech)
- IEng – [www.theiet.org/ieng](http://www.theiet.org/ieng)
- CEng – [www.theiet.org/ceng](http://www.theiet.org/ceng)
- Further Learning – [www.theiet.org/furtherlearning](http://www.theiet.org/furtherlearning)
- PD How 2 Guide – [www.pd-how2.org](http://www.pd-how2.org)
- Career Manager – [www.theiet.org/career-manager](http://www.theiet.org/career-manager)
- Accredited Courses – [www.theiet.org/careers/accreditation](http://www.theiet.org/careers/accreditation)

# Any Questions?