

The Future of Engineering Higher Education

Further Learning and Employer Engagement

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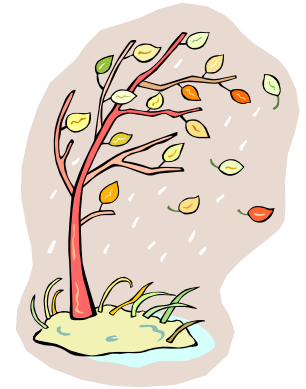
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Origins

Concerns about failing system of formation for professional engineers in the UK:

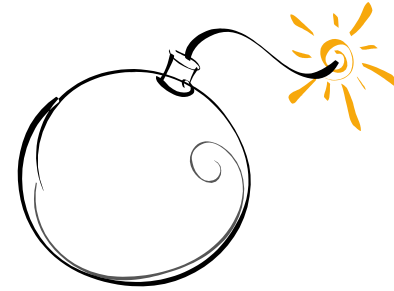
- Sandwich programmes drying up
 - Fewer organisations will/able to train
 - Privatisation
 - Flatter structures
 - Devolved profit centres
- Realisation that BEng still majority of degrees, but little help to get further learning in engineering



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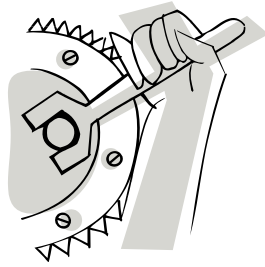
Threats



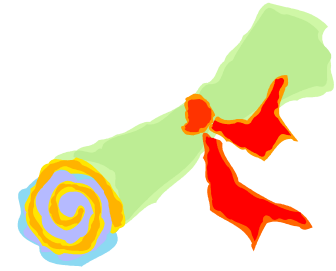
- Bologna Declaration
- Hardening demands in US, Australia, Ireland for longer degree programmes
- Increasing need for basic mathematics and science to be taught in undergraduate year one – conflict between need for core knowledge and for greater industry engagement
Educating Engineers for the 21st Century: RAEng

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What is proposed?



A work-based learning programme, consisting of:

- An embedded MSc qualification
- A two year employment based project

Both within a four year programme
(But variations possible depending on experience)

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Principles

- BEng = usual entry requirement
- Professional Development Audit
- MSc taught and project
 - related to employment/career path (learning contract)
- **Both academic and IPD programme accredited by a PEI**
 - HEI in the driving seat
- **CEng taken by Professional review**
 - **interview on completion**

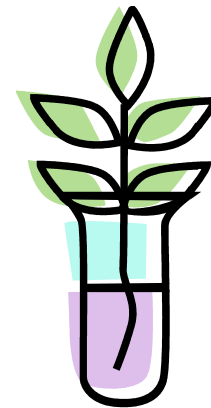


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Pilot

- Gateways to the professions programme
- Joint project with Kingston University
- Why Kingston?
- Who else involved



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Tools

- UK-SPEC
- EC^{UK} Accreditation Handbook
- *Guide to MSc Professional Engineering*
- HEI Operating Manual
- IET Career Manager/eMPDS



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Benefits

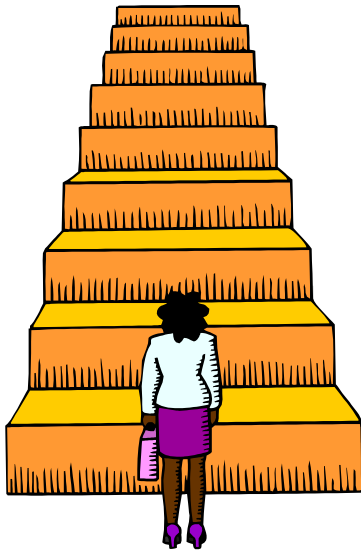


- Relevant
- Fast Track
- Earn while learn
- Work-based learning
- Bologna-friendly
- RDA-friendly
- Scope for knowledge transfer

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Challenges



- Drop-out rates
- Accreditation – IPD and academic
- Placements and mentoring
- Employer buy-in
- Diversity of HEI mission

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Work in progress



- Guide – Manuals
- Brochures
- Publicity in Journals
- Newsletters
- Website
- Students
- Incorporated Engineer programme
- Discussions with HEFCE

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Flexible Pathways to becoming a Professional Engineer
A work-based postgraduate route to meet the competence requirements for Chartered and Incorporated Engineer registration

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HOME

Today's would-be Chartered Engineers are expected to hold an appropriate Master's level qualification. They must also have undergone a period of professional development, a time when they learn to apply their knowledge, understanding and judgement. Anyone completing an MSc Professional Engineering programme is able to satisfy both of these key requirements.

Developed as a collaborative venture between a group of UK universities and engineering institutions, the MSc programme offers an innovative work-based learning approach to acquiring the competences demanded by UK-SPEC.

Someone enrolling on the programme agrees a 'learning contract' with an academic supervisor and an employer, this being tailored to the individual's specific situation. The contract stipulates a well defined schedule of work that meets a strategic development need of the employer organisation. Experience has shown that work-critical projects under focused academic supervision have a very high completion and success rate, with major benefits to both participant and employer.

MSc PROFESSIONAL ENGINEERING
New route to recognition

CEng
The mark of excellence

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Thank you for your attention



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