

Trends and Challenges in Chemical Engineering Education

UK (AND UCL) PERSPECTIVE

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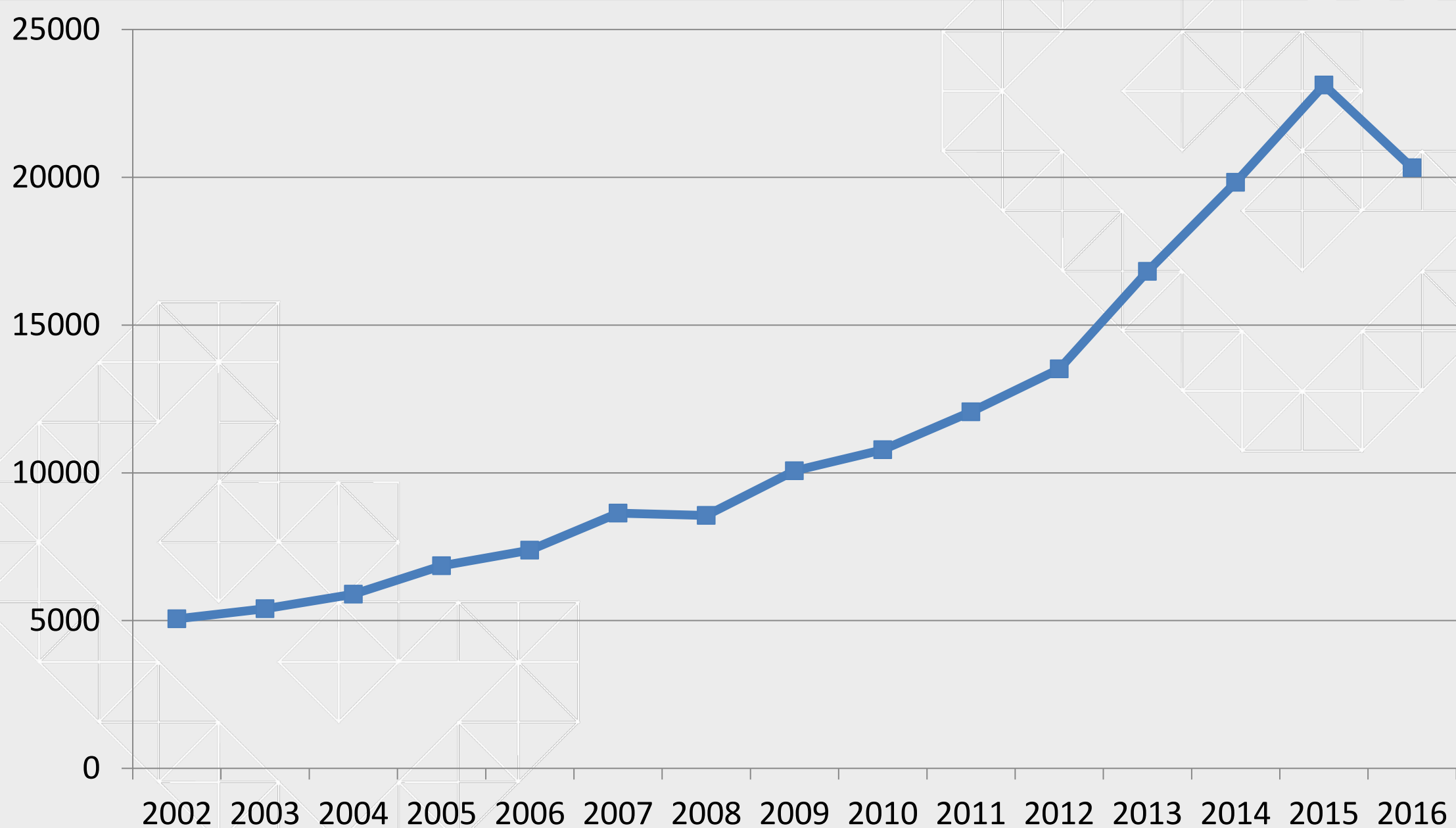
Chemical Engineering in the UK



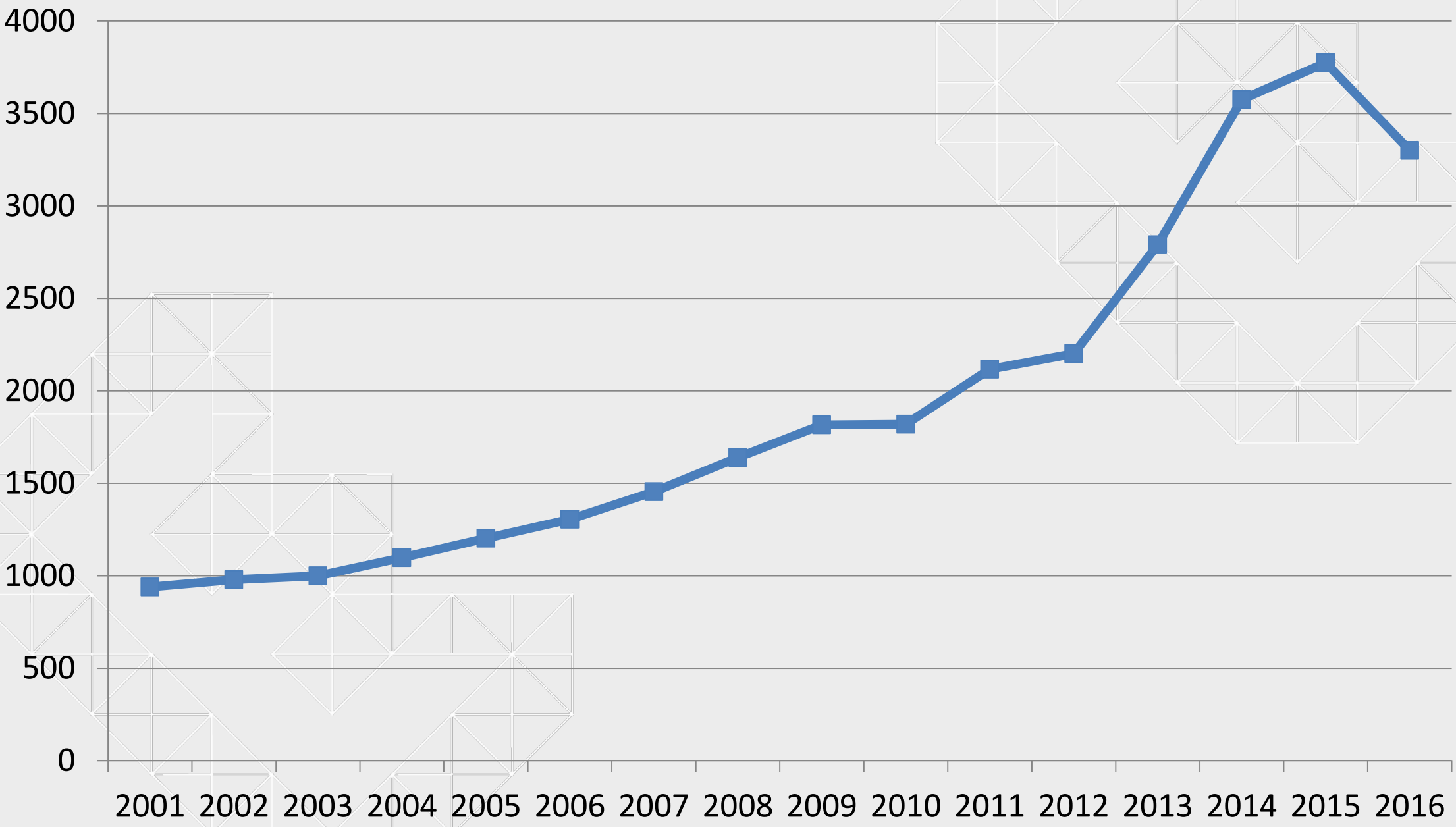
33 departments offer chemical & biochemical engineering

301 courses:
BEng (3 yrs) & MEng (4 yrs)

Applications (chemical/process/energy eng.)



Intake



Graduate jobs (2016)

Types of work	First degree	
	No.	% of total
Managers	30	3.7%
Health professionals	5	0.4%
Education professionals	10	1.5%
Legal, social and welfare professionals	10	1.1%
Science professionals	25	3.3%
Engineering and building professionals	340	45.5%
Information technology professionals	35	4.5%
Business, HR and finance professionals	105	14.3%
Marketing, PR and sales professionals	25	3.5%
Arts, design and media professionals	5	0.5%
Other professionals, associate professionals and technicians	40	5.6%
Childcare, health and education occupations	5	0.8%
Clerical, secretarial and numericals clerks	20	2.7%
Retail, catering and bar staff	65	8.5%
Other occupations	30	4.1%
Unknown occupations	0	0.0%
Total from survey	745	
Total first degree grads	2255	

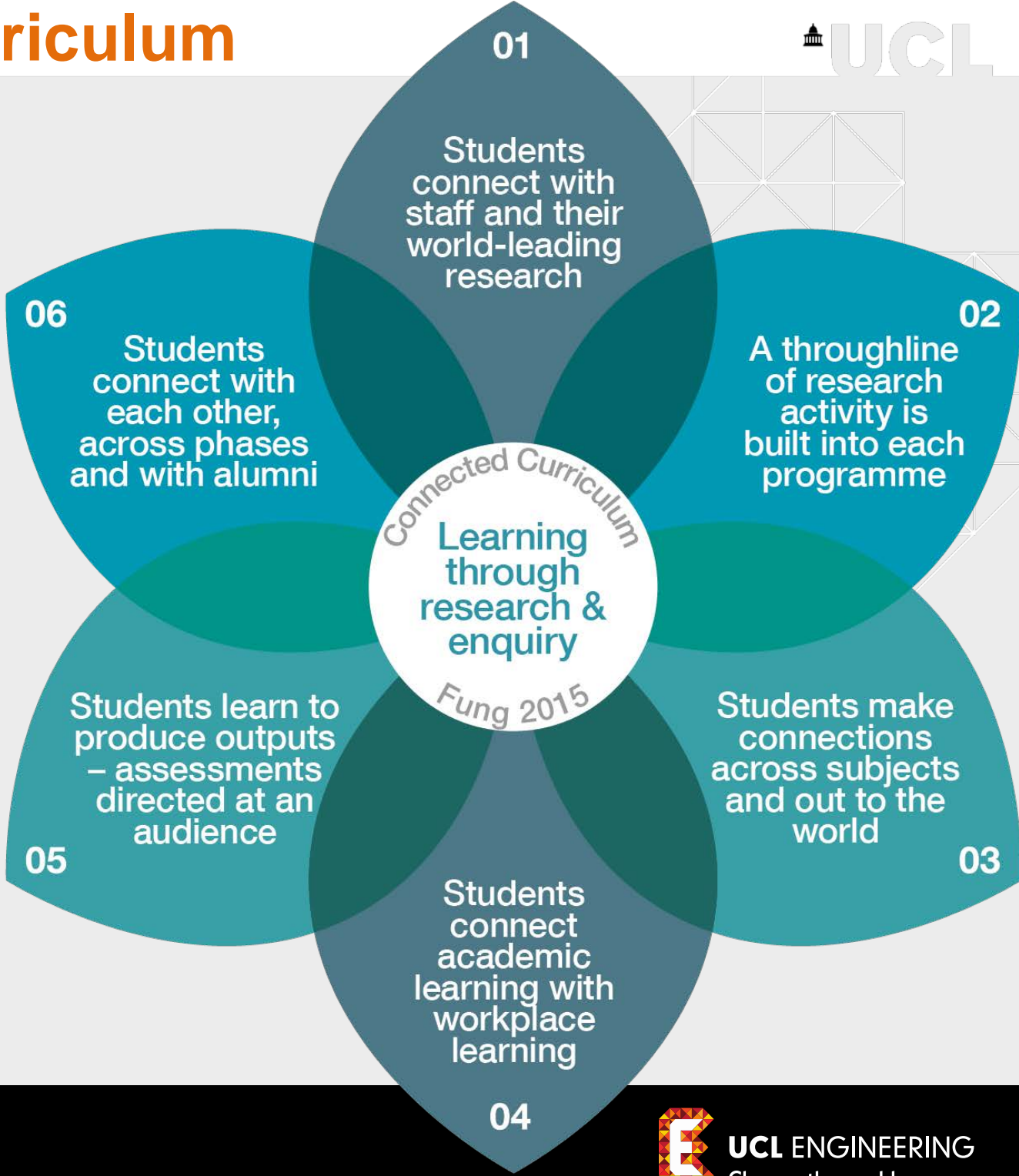


CHEMICAL ENGINEERING AT UCL

UCL's Connected Curriculum

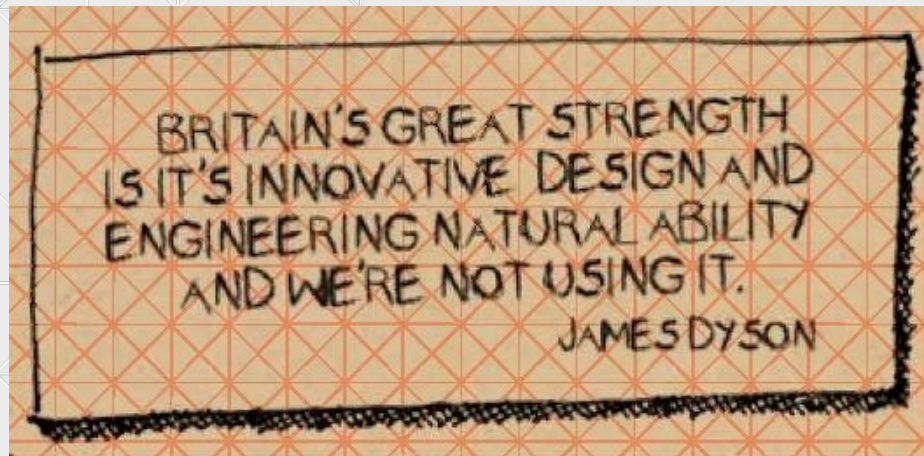
Connected Curriculum is an institution-wide initiative, its main aim is to ensure that all UCL students are able to participate in research at all levels of their programme of study, in line with the UCL 2034 strategy.

The strategy defines the relationship between students' learning and their participation in research.



UCL Engineering Vision

- *“At UCL Engineering we take bright, thoughtful, creative people and give them the knowledge, skills, and experience they need to engineer a better world.*
- *We teach them to think, make, model, design, analyse, challenge, and innovate, and then let them practice what they’ve learned by tackling engaging projects that address real-world problems.”*



Integrated Engineering Programme (IEP)

From the very first day of the first term, students come together to work in **cross-disciplinary** teams to tackle ambitious **real world problems** based on our **research**, and to develop the crucial **technical and team working skills** required by industry and academia.

This is a key part of the integrated engineering experience and builds on our pioneering use of scenario-based teaching





Student-led e-learning
30 hrs over 10 weeks

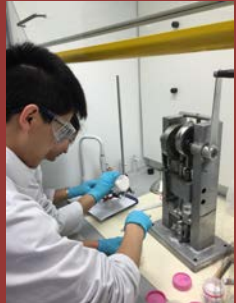
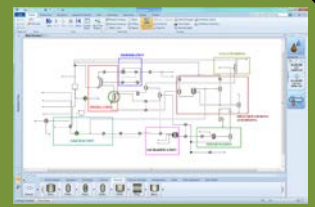


Lectures & Tutorials
32 hrs over 8/10 weeks



Experimentation
4 hrs

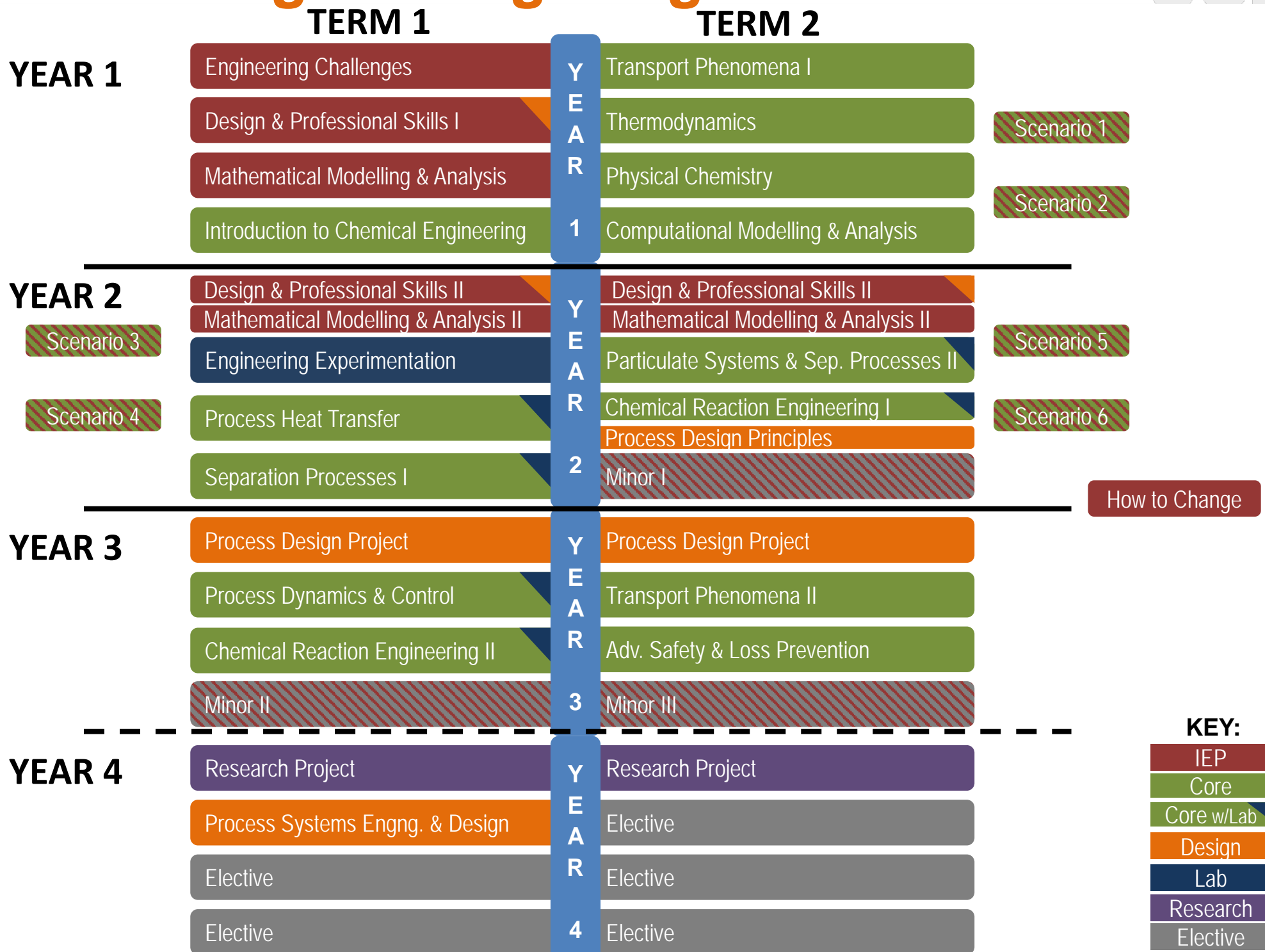
Computation
4 hrs



Y1 & Y2 Scenarios
Fundamental principles
Design & Innovation
Health, Safety & Sustainability
Team working & Presentation skills



Chemical Engineering Programme



How to Change

Chemical Engineering Scenarios

CHEMICALS

ENERGY

CHEMICALS

ENERGY

CROSS-SECTOR

PHARMA



Process Plant

Natural Gas Transportation and Liquefaction

Air Separation

Biofuels

“Hidden heroes” - Instrumentation
Practical

Pharma Formulation Development
Practical

**TO CHANGE THE
WORLD, YOU NEED
TO BE TAUGHT
DIFFERENTLY.**

