

## Press release

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### EFCE publishes new chemical engineering education guidelines

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Chemical engineering education should focus on learning outcomes not contact hours according to newly revised recommendations published by the European Federation of Chemical Engineering (EFCE).

The EFCE's Bologna Recommendations recommend that students studying towards bachelor and master qualifications should be measured on their levels of knowledge and understanding they develop, rather than the amount of time they spend with tutors. The recommendations also suggest that students studying for a PhD or Doctorate are encouraged to further develop their abilities to manage independent research work.

The revised recommendations were prepared by the EFCE's education working party and EFCE President Richard Darton says that the revisions provide timely support for chemical engineering educators: *"This is an outstanding piece of work that gives the academic chemical engineering community the right advice at the right time."*

*"It stresses the importance of learning outcomes and avoids the trap of specifying a curriculum,"* says Darton, formerly head of engineering science at Oxford University, UK.

The original EFCE Bologna Recommendations were published in 2005 and almost all newly accredited chemical engineering programmes have adopted the recommendations. National and international accreditation bodies have since defined quality frameworks and learning outcomes for chemical engineering courses and the revised recommendations support these existing guidelines.

The EFCE recommendations for the first and second cycle (bachelor and master) adopt the EUR-ACE<sup>®</sup> framework standards for accreditation of engineering programmes. For the third cycle (PhD and doctorate) the EFCE is the first institution to define the additional skills to be learned in a doctorate.

These additional skills include original research, the development of plans, management of resources, critical analysis and the justification of choices as well as communication with peers and the ability to promote technological, social or cultural advancement in a knowledge based society.

#### Note to editors:

Founded in 1953, the European Federation of Chemical Engineering (EFCE) is a non profit making association, the object of which is to promote co-operation in Europe between non-profit-making professional scientific and technical societies in 30 countries for the general advancement of chemical engineering and as a means of furthering of development of the discipline.