The conference will cover three main groups of issues concerning models in (chemical) engineering education. Firstly, I shall revisit the main concepts of learning outcomes and qualifications frameworks, stressing the concept of a three-layer qualifications framework and using two relevant models: (i) the sectoral framework for engineering, the EUR-ACE framework standards; (ii) the seminal contribution of the European Federation of Chemical Engineering. In a second part, I shall address some issues of the substance – contents and methods. Finally, I shall examine instruments for new pedagogy. In all, we should keep in mind that the challenge today is to train young people, to widen their scope of thinking… to the dimension of Earth and beyond.