

Skills and competencies for the Engineer of 2030 to meet sustainability challenges

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INTRODUCTION

Industry 4.0 is upon us and it will have a profound impact on the employment landscape in the coming years. Society needs engineers who are adequately trained with the knowledge and skills to provide a secure, sustainable and successful Europe. To meet future societal challenges, Engineers need new skills and ways of working. In this workshop we would like to answer the question; “What are the skills and competencies required of Engineers to enhance the sustainable development of our society?”

The main objective of this workshop is to explore this question in an international and multicultural setting and to confront the different points of views of the participants, aiming, through contrasts and comparisons, to attain an overview of skills requirements of the Engineer in 2030. We will start with an introductory short case study which will generate discussion in order to identify the required skills and competencies of the future Engineer, framed around the Sustainable Development Goals. Next, participants will be divided into small groups to work on a practical exercise to prioritise the required skill-set. Participants will be asked to reflect on their choices: why these skills and competencies are valuable and how they will prepare Engineers to achieve sustainable development goals. Finally, we will conclude our workshop with an interactive session to engage and encourage discussion and debate amongst participants.

As a principal outcome of this workshop we hope to improve our understanding and knowledge of the skills and competencies required of the Engineers of the future in the realm of sustainability development. The results will hopefully allow us to identify the key trends and to discover divergences and/or convergences between academics, employers and students participants’ opinions. We expect to obtain a broad overview of the required sustainability skills and competencies at European level from diverse social, cultural, economic and societal perspectives.

This workshop is organised within the framework of the Erasmus+ project “A-STEP 2030 - Attracting diverSe Talent to the Engineering Professions of 2030” initiated by the SEFI Attractiveness WG members. The main purpose of this project is to develop new and innovative teaching approaches relevant to learners’ values and adequate to teach a new set of skills and competencies needed for the future. Our ultimate aim is to create an attractive and fascinating learning environment to encourage young people with diverse backgrounds to engage in engineering studies and the profession as a whole.

The results of this workshop will contribute to development of the first project output “SKILLFOCUS 2030”. This report, when complete, will be issued to all participants of the workshop.