

The European Project Semester at ISEP

Learning to Learn Engineering

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Abstract—The European Project Semester at ISEP (EPS@ISEP) is a one semester project-based learning programme addressed to engineering students from diverse scientific backgrounds and nationalities. The students, organized in multicultural teams, are challenged to solve real world multidisciplinary problems, accounting for 30 ECTU. The EPS package, although focused on project development (20 ECTU), includes a series of complementary seminars aimed at fostering soft, project-related and engineering transversal skills (10 ECTU). This paper presents the study plan, resources, operation and results of the EPS@ISEP that was created in 2011 to apply the best engineering education practices and promote the internationalization of ISEP. The results show that the EPS@ISEP students acquire during one semester the scientific, technical and soft competences necessary to propose, design and implement a solution for a multidisciplinary problem.

Keywords—European Project Semester; engineering education, project-based learning; teamwork, multidisciplinary projects.

I. INTRODUCTION

The European Project Semester (EPS) is a one semester project-based learning programme addressed to engineering students from diverse scientific backgrounds and nationalities. The goal is to offer engineering students a programme not only focussed on developing scientific and technical competences, but also on soft transversal skills, which are in high demand by the market.

The programme is offered by a selected group of European universities. In order to run an EPS programme, the candidate university has to apply and follow a set of mandatory requirements. As a result, in 2010, ISEP applied to run the programme and, in 2011, the European Project Semester at ISEP (EPS@ISEP) was launched. For ISEP, the programme is regarded as yet another tool to apply the best engineering education practices, increase the employability of its graduates and promote internationalization.

This paper includes the following sections: introduction, EPS background, the EPS@ISEP programme, related programmes, the EPS@ISEP results and the conclusions.

II. BACKGROUND

The EPS was created in Denmark by Prof. Arvid Andersen in 1995 to foster the development of international

competences, project organised learning, teamwork and complementary transversal skills among engineering graduates [1]. In 2013 EPS was offered in Copenhagen, Denmark, 's-Hertogenbosch in the Netherlands, Oslo in Norway, Lodz in Poland, Kiel in Germany, Valencia and Vilanova i la Geltru in Spain, Vasa in Finland, Tarbes in France, Antwerp in Belgium and Porto, Portugal [2]. The Hague in the Netherlands in the autumn of 2013 and Pölnen in Austria in 2014 will join the group. These universities share a common site – the EPS Providers site¹ – where prospective candidates can get information on the programme as well as on the providers.

The EPS programme is a 30 European Transfer Credit Units (ECTU) package structured generically as follows: two thirds (20 ECTU) for the project module and one third (10 ECTU) for complementary modules. The complimentary modules are focussed on the development of soft skills such as communication or teambuilding, project-related activities such as project management and transversal topics such as sustainability.

The EPS providers have discussed, agreed upon and posted on the EPS Providers site¹ the set of mandatory European Project Semester programme features. These are the so-called “10 Golden Rules of EPS” that all providers must follow:

1. English is the working language of EPS.
2. EPS is multinational with a group size of minimum three and maximum six students, being four or five the ideal number; a minimum of three nationalities must be represented in each EPS group.
3. Ideally, but not necessarily, an EPS project is multidisciplinary.
4. An EPS semester is a 30 ECTU package, the duration of which is not less than 15 weeks.
5. An EPS project has a minimum of 20 ECTU and the complementary subjects account for a minimum of 5 ECTU and a maximum of 10 ECTU.
6. The main focus on EPS is on teamwork.

¹ <http://www.europeanprojectsemester.eu>.

