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CASPROD-WHITE PAPER[1]

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Smart, interconnected products offer opportunities for new functionality, reliability and product utilization. Design and development process of such products require engineers, technicians and other staff not to be only specialised in one core profession but to acquire additional portfolio of multidisciplinary knowledge and skills. Furthermore, product development rarely runs in single company, even not in single country. This leads to enhanced collaboration requirements and therefore, respective workforce skills.

Although most of the engineering programmes recognise this development paradigm shift, they do not implement it in their education due to the limited staff, knowledge financial resources or options regarding international collaboration.

The partners involved in this project believe that by the support of Erasmus+ Strategic Partnership it is possible to overcome these issues and to initiate long-term international collaboration in that field and student exchange between project partner institutions according to the Bologna principles.

This short document together with course mapping is a reference document for development of CASPROD curriculum.

CURRICULUM STRUCTURE

The joint master programme between Technical University of Vienna, Faculty of Mechanical Engineering (TUW), University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture (UZ), and University of Ljubljana, Faculty of Mechanical Engineering (UL) is divided into 4 semesters, 30 ECTS each. The first semester will be held at UZ, the second at UL and the third at TUW. The fourth one will be dedicated to master thesis and will be held at the university according to student's preferences regarding the contents of the master thesis:

- 1st semester: University of Zagreb
- 2nd semester: University of Ljubljana
- 3rd semester: TU Wien
- 4th semester: Master thesis at UZ, UL or TUW

The contents of the programme are structured into 6 streams of different disciplines:

- Stream 1: Product development (min 18 ECTS)
- Stream 2: Digital Manufacturing & Information Systems (min 19 ECTS)
- Stream 3: Big Data Systems (min 19 ECTS)
- Stream 4: Innovation & Entrepreneurship (min 7 ECTS)
- Stream 5: Transferable Skills (min 4 ECTS)
- Stream 6: Integration project (10 ECTS)

Students have to select also among selective subjects in minimum amount of 13 ECTS evenly distributed over the first three semesters, and thus increase emphasis on any of first five streams.

The programme is based on the core characteristics of engineering: the iterative process of designing, predicting performance, building and testing. Such contents of the courses and application of project based learning as pedagogy will enable building of appropriate technical and professional competences, such as problem solving, communication and teamwork.