



**DYNAMIC – Towards responsive engineering
curricula through europeanisation of dual higher education
588378-EPP-1-2017-1-DE-EPPKA2-KA**

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DYNAMIC – Newsletter 2

Dear readers,

We are pleased to present you latest news on the implementation of DYNAMIC Project and what was happened during 2018.

A lot of meetings with stakeholders and presentations was held and organised by all partners' organisations. We want to thank to all of them.

More than 9 focus groups meetings was organised in partner countries with purpose to discuss all aspects related to the pilot implementation of dual practice-integrated training for students in LBUS – Romania, TUV – Bulgaria and PTP – Croatia.

Actual information about all the project activities is available on our website: <https://dynamic-project.eu/> and also in <https://www.facebook.com/dynamicwismar/>.

DYNAMIC Project Team

The Toolkit of template and checklist for documentation and assessment of the practical phases was prepared by Fachhochschule Joanneum



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The Toolkit is designed as a resource for academic staff and industrial supervisors in the development, implementation and evaluation of the dual education components. The Toolkit contains a flowchart, checklists, guidelines, as well as standardized procedures and forms for the documentation of the communication process as a mean for assessment of students' performance and documentation for quality assurance.

The Toolkit aims to facilitate and supports the communication between the key stakeholders involved in the delivery of dual higher education programmes and the synchronisation between university-based and workplace-based study elements.

**DYNAMIC Project was presented on Blue Career Fair, 15.11.2018,
Varna Bulgaria**



Representatives from Technical University of Varna, Keppel FELS Baltech, Ltd have presented DYNAMIC Project at Blue Career Fair which was held on 15.11.2018 in Varna, Bulgaria. The event is aimed at young people – students in high schools and universities and graduates working in the "blue economy", in other sectors, as well as temporary unemployed. Professionals from the country and abroad present to the audience the prospects and requirements of the business to pursue the blue economy occupations: maritime transport (shipping, ports, shipbuilding and ship repair), cruise tourism, marine aquaculture and oil

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and gas exploration and production from the sea. More than 100 students from high school and universities had the opportunity to get acquainted with the suggestions of educational institutions and training centers on specialties and programs related to the "blue sectors" to meet and hold talks with representatives of companies looking for staff.

TU Varna presented the main information for DYNAMIC project. Mr. Ludmil Stoev from Keppel FELS Baltech presented the terms and requirements for the naval architect working in design company

**DYNAMIC project was presented at the Conference organised by
Erasmus+ Programme on 10-12.10.2018 in Bucharest**



Dynamic project and its aims were presented by the partner organisation Lucian Blaga University of Sibiu, Romania on the Conference organised under Erasmus+ Programme on 10-12.10.2018 in Bucharest to more than 120 persons from Romania and Moldavian universities.

The Moldovan-Romanian Conference entitled "Erasmus + in Higher Education: A Step Beyond Mobility" took place in Bucharest, October 10-12, 2018, attended by the representatives of the Academy of Public Administration - Dinu Manole, Head of Relations International, Rodica SOBIESKI-CAMERZAN, Chief Scientific Library, and Ina MACOVEI, Methodist, International Relations Department.



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The purpose of the conference was to consolidate and develop professional competences on the concept of "My University in 2025", to capitalize on the results of Erasmus + projects in higher education in the Republic of Moldova and Romania.

The conference was organized by the Erasmus National Office of the Republic of Moldova and the National Agency for Community Programs in the Field of Education and Vocational Training (ANPCDEFP) in Romania. The conference was attended by about 120 representatives of higher education institutions from both countries: rectors, vice-rectors, international relations chiefs, Erasmus + project coordinators from both countries.

Also, on the 17.09.2018 the main activities of Dynamic Project were presented to 55 students and 22 academic and industrial staff. In same day the students have visited the Continental and Marquardt Plants.

Debates on the dual program, the mechatronics education plan and the development of the practical curriculum, as also discussion on the new curriculum for dual education, study contracts was made in direct meetings with the companies during the period from May till the end of September.

In October 44 students participated in selection procedure for involving in dual education program.

**Results from 2018 Dynamic Regional working groups
meetings organized by Lucian Blaga University of Sibiu (LBUS),
Romania**

During the period of February and May 2018 at LBUS have been held three regional focus groups:

- ✓ 1st Regional focus group was organized on 26th of February 2018
- ✓ 2nd Regional focus group was held on 26th of March 2018.
- ✓ 3rd Regional focus group was held on 18th of May 2018.

Focus groups (FG) were organized in Romania (at LBUS), involving representatives of the university involved in the project and the partner companies. There were participants in the focus group representing different sectors: higher education, business and social partners.

Higher education was represented by:



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- ✓ University teachers/academic mentors from the Department of Machines and Industrial Equipment, which is coordinating the bachelor degree study programme in Mechatronics at LBUS;
- ✓ Staff of LBUS (vice-rector, dean of Engineering Faculty, head of the Department of Machines and Industrial Equipment - DMIE), members of DMIE);
- ✓ Students at “Mechatronics” study programme.

Business: representatives of partner companies Continental Automotive Systems Sibiu (CASS) and Marquardt Schaltsysteme SCS Sibiu (MSS).

Social partners: representative of the German-Romanian Chamber of Commerce and Industry (AHK RO).

Conclusions and recommendations:

This project aims to implement the dual study option for the existing “Mechatronics” specialization at Lucian Blaga University of Sibiu. At present, the program is unfolded on 4 years (8 semesters), 240 ECTS. There is no legal framework in Romania yet for implementation of dual education in HEI’s, so by means the DYNAMIC project, a pilot implementation will be done by LBUS and its industrial partners, CASS and MSS.

The adaptation of the curriculum for the dual study specialization will be made by adapting/changing the syllabuses of specialty subjects. The targeted specialty subjects were: Computers programming, Digital Electronics, Power Electronics, Microcontrollers Hydraulic and pneumatic driving systems and Programmable Logic Controllers. A supplementary amount of 810 hours of practical activities will be added to the existing 240, which will lead to a total amount of 1050 hour for the dual study option. A new syllabus for the practical activities was designed and agreed between LBUS and industrial partners.

The students in the academic year 2018-2019 will be able to choose between the normal version and the dual version of the “Mechatronics” specialization. A limited number of places are allocated to the dual study specialization, and the selection of the students will be done according to a selection procedure was proposed and agreed between LBUS and the industrial partners. Also, new rules for assessing the students for the practical activities were established by LBUS and agreed with the industrial partners.

In the adaptation of dual model of education at PTP and Undergraduate study program there will not be made changes in the content of the study program, but only part of teaching process of selected courses will be held in companies from industrial partners.

The implementation of the practical phases for dual study specialization will be formalized by the following contracts/agreements: LBUS – industrial partner – student will sign the contract on practical work. Industrial partner – student will sign the contract of internship.

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Results from 2018 Dynamic Regional working groups meetings organized by Polytechnic Pula (PTP), Croatia



During the period of February and May 2018 at PTP have been held 4 Regional focus groups.

- ✓ 1st Regional focus group was organized on 26th of February 2018 with topics: Designing a dual educational plan and Organization of teaching process (academic studies) and practical work with two supporting documents (Introduction of Designing a dual educational plan and Calculation of hours per year)
- ✓ 2nd Regional focus group was held on 29th of March 2018 with agenda items: Designing dual study program and definition of mode for student payment in the context of Croatian legal regulations.
- ✓ 3rd Regional focus group was held on 26th of April 2018 with tasks: making a draft syllabus of student practical work teachers in collaboration with industrial mentors, Content of contract proposal between company – student – PTP and introduction of criteria for student selection.
- ✓ 4th Regional focus group for concluding started arrangements on Contract proposal between company-student-PTP in accordance with the Croatian specific and legal requirements, coordination of professors and industrial mentors for finalizing syllabus for courses included in dual study program. This Regional focus group was held on 17th of May 2018.

The present Focus Group Report (FG Report) aims at:

- analysing the results of regional working groups meetings organized by PTP with the partner companies;
- analysing the Croatian specific and legal requirements;



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- review the curricula of the selected programmes;
- defining the content and organization of the practical phases and map the developed practical phases with ECTS;
- setting the criteria for student monitoring during practical phases;
- defining ways of contracting between student-industry-HEI`s;

There were participants in the focus group representing different sectors: higher education, business and social partners.

Higher education was represented by:

- Teachers/academic mentors from the Undergraduate study program Polytechnic;
- Staff of PTP (dean of PTP, vice-dean for academic affairs, head of the Undergraduate study program Polytechnic, Deputy head of the Undergraduate study program Polytechnic, head of finance department)

Business: representatives of partner companies Holcim Hrvatska (LHC) and Uljanik Shipyard (JSC).

Social partners: representative of the Croatian Chamber of Economy (CCE) and Region of Istria (ROI).

Conclusions and recommendations

In the project there will be implement dual study program at PTP in Undergraduate study program Polytechnic, duration is 3 year and has 180 ECTS. As in Croatia for now, there is NO legal framework for implementation of dual education in HEI`s PTP together with partners from Croatia has saw possibility for realization of pilot project DYNAMIC and implementation of dual education in selected study program, in Conclusion of the National Council for Higher Education (Class: 003-08 / 11-09 / 0006; no. 355-02-01-11-9) from 16th January 2012 that says: „Changes up to 20% of the content of the study program are made by the Academic Council of HEI`s“.

In the adaptation of dual model of education at PTP and Undergraduate study program there will not be made changes in the content of the study program, but only part of teaching process of selected courses will be held in companies from industrial partners.

Surely in Croatia there is the need for legal adoption and regulations of dual education in HEI`s.

Selected courses which will be offered to the students and performed together with industrial partners are:

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- ✓ From 2nd year: Material Technology I, Teamwork and Practicum III, Electronics II, Material Technology II, Teamwork and Practicum IV,
- ✓ From 3rd year: Project Management, Professional Training, Teamwork and Practicum V, Teamwork and Practicum VI and Bachelor Thesis.

Total number of ECTS involved in dual education are 43 ECTS. During the semester students will participate at a PTP during teaching process and after that they will take a practical part in company:

- ✓ In 2nd year – total aprox. 8 weeks (February 2019 / June 2019 / September 2019)
- ✓ In 3rd year – total aprox. 10 weeks (February 2020 / June 2020 / September 2020).

The implementation of the practical phases for dual study specialization will be formalized by the following contracts/agreements: PTP – industrial partner – student will sign the contract on practical work. Industrial partner – student will sign the contract of scholarship.

**Results from 2018 Dynamic Regional working groups
meetings organized by Technical University of Varna (TUV), Bulgaria**



Focus groups (FG) was organized in Bulgaria (at TUV), involving representatives of the Technical University of Varna and partner companies from Bulgaria to discuss all aspects related to the pilot implementation of dual practice-integrated training for students from the Naval Architecture and Marine Technology specialty of Technical University of Varna.

- ✓ 1-st FGM on 21.03.2018 with participation of TUV; FELS; MTG; AHK BG.
- ✓ 2-nd FGM on 18.04.2018 with participation of TUV; FELS; MTG;



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- ✓ 3-rd FGM on 16.05.2018 with participation TUV; FELS; MTG; AHK BG

The following results were achieved:

- ✓ A structure for pilot implementation of dual practice-integrated training in specialty of Naval Architecture and Marine Technology of TUV has been adopted, which takes into account existing national and institutional legislation and existing curricula;
- ✓ Pilot implementation of dual learning will be based on a voluntary choice by the students of the 3-year course for the 2018/2019 academic year after approval by the business partners;
- ✓ The main part of the training will be provided during summer vacation and will consist of about 160 hours per month paid according to the company conditions.
- ✓ All the necessary documentation - contracts, logbooks, reports etc. will be developed taking into account local conditions, based on good practices in partner countries involved in the project.
- ✓ At the moment there are not many possibilities to provide practice-integrated dual learning for students of Marine Engineering specialty for the entire course of their education. Their education is more focused on the work of a ship's engineer on board of the ship. However, students in the specialty of “Marine Engineering” in their 4th year of education will be accepted by MTG Dolphin for practical training on “Repair of marine machinery”.
- ✓ Students in the specialty of “Marine Engineering” in their 1st and/or 2nd year of education will be considered to undergo for the second part of their practical training on “Metal turning” and/or “Metal fitting” at MTG Dolphin.
- ✓ The syllabus for students in the newly accepted specialty - “Design of marine plants and systems” is extremely appropriate for dual education. The possibilities for implementation of dual practice-integrated training for this specialty will be discussed after finishing of the enrolment procedure. It is worthwhile to consider extending the activities after project completion and looking for opportunities in this direction.