



Dual Curricula - Study and Work Practice in Agriculture and Food Safety (DualAFS)

G U I D E L I N E FOR IN-COMPANY TRAINING IN THE DUAL BACHELOR'S DEGREE PROGRAMME “Livestock and Animal Product Safety (LAPS)”



**ERASMUS+, KA2 – COOPERATION FOR INNOVATION & EXCHANGE OF GOOD PRACTICES
CAPACITY BUILDING IN THE FIELD OF HIGHER EDUCATION - JOINT PROJECTS**

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Project no. 619178-EPP-1-2020-1-DE-EPPKA2-CBHE-JP

GUIDELINE

FOR IN-COMPANY TRAINING IN THE DUAL BACHELOR'S DEGREE PROGRAMME “Livestock and animal product safety (LAPS)”

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This document was discussed with members of the Department of Animal Sciences, the Council of Faculty of Agriculture and Environment (FAE), members of the DualAFS Project Steering Committee and invited experts and from the private and public sectors as well as farmers of agriculture and livestock.

This document was approved by the Council of FAE and the Senate of AUT in July 2021.

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1. PARTNERS FOR THE REALIZATION OF PROFESSIONAL PRACTICE.

Since the reorganization of the study program consists, mainly, in the strengthening of practical training, through the integration of studies with practice directly on the farm/business, the organization and development of professional practice is described in detail in this appendix and its main issues are reflected in Regulations/Guidelines of Professional Practices of this reorganized program.

a) *The partners for the realization of the professional practice will be:*

- Large and medium livestock farms;
- Large and medium-sized farms with activity in agriculture and livestock;
- Agritourism farms that have activity related to livestock and livestock products;
- Food production companies for livestock;
- Companies of collection, storage and assessment of primary livestock products;
- Firms that are active in the field of construction and mechanization of livestock farms;
- Central, regional and local public institutions of agriculture, extension, rural development, safety of primary livestock products and safety of food for livestock;
- Centers/institutions of technology transfer and consultancy in the field of animal husbandry and safety of primary animal products.

b) *Selection of farms/businesses for professional practices* – Farms and businesses, as a whole, will be selected on the basis of data on the size and type of economic activity. It is intended that they be as widely distributed as possible throughout the country, so that students have the opportunity to develop professional practice as close to their residence as possible.

c) *Institutionalization of cooperation between the university and enterprises for professional practices.*

c.1.) *Extension of AUT Agreements-farms/businesses/farmers/business associations-* The cooperation and contribution of each private enterprise for the development of professional practices is institutionalized through existing Agreements as well as new/improved or expanded ones with associations/ farm/business associations or separate firms. The agreements aim to recognize the contribution of enterprises as well as the modalities that regulate all student practice.

c.2) *Cooperation with mutual benefit.* The cooperation of the department and AUT with farms/enterprises contributing to the practical training of students, will create a relationship of mutual benefit, through the department's undertaking/offering some services free of charge to contributing farms/businesses, such as training, counseling, analysis with fees reduced, etc., as well as the involvement of mergers/associations of businesses or even large individual businesses in research, development, technology transfer and innovation projects.

d) *Promotion of the contribution of business to the realization of the professional practice of students.* This contribution will be considered as an important social and developmental contribution of enterprises to support the practical training of students, who will be carriers and contributors to the development of the livestock sector in the coming decades. Therefore, it will be promoted with priority by the University, through different forms, such as:

- Publication of the list of contributing farms/businesses on the University's website and on the website of the Erasmus project that is being implemented;
- Making the contribution of farms/businesses known to ministries, central, regional and local institutions.
- AUT, within the framework of the Erasmus project, will propose a package of incentives for farms and businesses that contribute to the development of student practices. Based on its experience as well as the experiences of other countries, AUT proposes to decision-making institutions a package of realistic incentives to increase the contribution of farms/businesses to the practical training of students in the form of practices and professional practices. For example, it would be an important incentive for farms and businesses if their contribution to the professional practices of AUT students would be evaluated through "bonus points" by the Agency of Agriculture and Rural Development (AZHBR) in the evaluation procedures for financial support through budget funds or those within IPARD. Such incentives can also be applied in fiscal aspects. The Erasmus project in question will contribute to the preparation of concrete proposals, which after being examined and approved within the AUT, the Authorities and Bodies of the AUT evaluate these proposals and can propose them to the relevant ministries/government to consider them, also within the framework of achieving the objective of the Strategy for linking higher education with the labor market (specific objective C3, pg. 91).
- The establishment of the Practice Partners Group or Work Life Partner (WLP) of the Department, which includes mainly representatives of the livestock farms and business as well as representatives from public agencies related to livestock sector. This WLP serves the Department, the Faculty and AUT to improve and better orient the academic offer, especially that of professional practice, as well as to strengthen the cooperation of the Department with business in providing services and transferring knowledge.

The National Education Strategy (head Higher Education) 2021-2026 creates an important space and promises support from the Government, both for universities and businesses, to develop a much more advanced framework of university cooperation - partners of the agricultural sector and its sub-sectors, as well as of the labor market, for the realization of professional practices of students. In this context, it seems that the Strategy does not exclude budgetary support for students for professional practices for a longer period.

The identification of all farms/businesses suitable for professional practices as well as the development of the entire framework of the institutionalization of the cooperation of the Department/University with them, is one of the objectives of the Erasmus project that supports the implementation of the reorganized program. This objective will be realized during these two years, in order to start the professional practice normally, the first phase of which (Practice 1) starts in the month of May, 2024.

e) Allocation/Planning of students to farms/businesses.

Students select the farms/businesses where they will develop professional practice based on the list of farms/businesses that have Agreements with AUT for professional practices. They can complete the various phases of the practice in different farms/businesses that are closer to

their place of residence and meet the conditions for the realization of the program of the corresponding phase of the professional practice.

Farms and private businesses can interview, select and propose students themselves who wish to accept for professional practice. In cases where the student comes from a farming family or has another livestock-related business, he/she can perform all phases of professional practice on the family farm/business.

2. STRUCTURE OF PROFESSIONAL PRACTICE.

2.1. General objectives of dual in-farm/business practice

In the reorganized curriculum of studies integrated with practice, the main goal is to integrate or combine theory with professional practice in the farm/business. This enables students to transfer and apply in farm/business practice, the theoretical knowledge they have learned in the theoretical part of the curriculum. On the other hand, during the development of theoretical lessons (lectures or practical lessons), students are given enough space to bring to the auditorium the experience they have gained during professional practice.

Students will have the opportunity to become familiar with the organization, operation, daily management as well as the degree of modernization (technology and mechanization, use of IT, etc.) of a large or medium-sized enterprise in the agricultural sector during the professional practice on the livestock farm/business and analyze them in practice reports and projects. Further, during the professional practice, students follow closely and analyze in depth in the course projects, special aspects of farms and businesses of the livestock sector. Also, students will have the opportunity to develop a part of the professional practice in public institutions (central, regional and local), which manage the development of livestock and food safety and food for livestock.

2.2. Elements of professional practice.

These objectives of the professional practice will be realized through the development of its structuring in two forms:

- ***Professional in-farm/company practice***, during which the students, according to the professional practice program, received by the department, follow all the work processes and activities of the farm/business, being attached to the farmer, technical staff or specialist/ to those who technically run the business. For this part of the professional practice, the students prepare a report of the professional practice (see subsection: Assessment of the professional practice), on the basis of which the student's assessment of the professional practice is also made.

- ***Deepening in the form of Independent Learning (IL)***, through course projects (***Project-based Learning***), in special professional topics of the production activity of the farm/business (Independent learning). Through this form of training, students deepen the knowledge gained in the theoretical part of the curriculum and develop key skills to analyse, discuss and evaluate in the Project Work and its presentation, topics or concrete situations that they encounter directly in practice. Students do this part of the practice under the guidance of the department's lecturers and, when possible, also the technical staff of the farm/business where they do the practice. For this part of the professional practice, students prepare and present to the department a Project Work and a presentation in PPT (see: Evaluation of professional practice).

Both of the above forms of professional dual practice will be developed within this Erasmus project, based on the experience of the partner universities, NGU and Savonia AUS. Even Savonia UAS has developed very good experience for guiding/consulting students during the implementation of professional practice, especially course projects, through the wide application of Distance Learning.

2.3. Allocation of practice periods during the Bachelor studies.

The dual practice is allocated throughout the three years of studies, in order for its phases/modules to be combined in time and to match in their objectives/content with those of the blocks of modules of the theoretical part of the curriculum.

The dual practice structured in such a way and distributed throughout the entire period of studies, creates opportunities for students, during the development of the dual practice, to prepare and present for evaluation course projects and write practice reports for the farms/businesses where they carry out practice, which also carries out a continuous transfer and integration of theory with real practice throughout the period of studies integrated with practice.

2.4. Content of the practice program.

For each period of dual practice, the Department will formulate/design the practice program, which will contain the following elements in its content:

- Duration and calendar period of implementation;
- Workload in hours and ECTS;
- The teachers who lead the practice;
- Summary of expected results in practical training;
- The main objectives of the practice;
- The main topics of practice related to the respective theoretical part of the curriculum;
- Practice results (written reports, presentations, etc.);
- Form of evaluation of practice (participation in practice, grade, etc.).

The program of each period of the practice is discussed /consulted with the students in advance during the semesters of theoretical lessons and is given to them before the beginning of the in-farm practice. In the periods of professional practice, during which students will also develop a Project Work, the department will announce the areas or group modules that can be chosen by students to develop the Project Work. For each field or group of modules announced, the lecturers of the department prepare the Methodology of the Course Project, which must be in the form of a very detailed work methodology, based on which the student works, independently, during practice, under the guidance of the lecturer and the technical staff of the farm/business, where he/she develops the professional practice. The Project Work methodology is elaborated extensively with the students during the development of the module/group modules in the theoretical part of the curriculum.

2.5. Supervision of students during dual practice.

The supervision of the students for the realization of the professional practice will be realized by the lecturers of the department in cooperation with the farmers and the technical staff of the

farm/business when the student develops the practice. This cooperation will be of a complementary and well-coordinated.

a) Supervision by Department lectures.

Due to the current conditions/circumstances in our country's farms/businesses and the lack of an institutionalized experience of "practice instructors", the professional practice of students, within this study program, will be mainly supervised by the department's lecturers. They will guide students for both forms of practice. The role of lecturers is even greater for guiding students in the development of the Project Work during the period of professional practice. The supervision of students by lecturers will be carried out mainly Online (Distance Learning) as well as farm/business visits, when they are necessary. The Erasmus project will also develop the necessary capacities for e-Learning, including the training of students, lecturers, as well as the technical staff of farms, on contemporary didactic methods of e-Learning even during the realization of professional practice, i.e. for the implementation of the practice program in the form of integrated course assignments, projects works, etc. The development of e-Learning capacities will rely mainly on the experience of Savonia AUS, Finland, as an Erasmus project partner.

b) Supervision by the farmer and farm/business technical staff.

During the dual practice in farms/businesses, students participate in all the work processes and activities of the farm/business. This is accomplished through the close supervision and guidance of the student by the farmer and the technical staff who manage or consult/technically assist the farm/business. In our country, there is still no institutionalized experience for student leadership, by farmers and farm/business technical staff. By institutionalized experience we mean the training of farm/business staff to perform the role of "Practice Instructor" to guide students in professional practice alongside them. On the other hand, we must also consider the fact that medium-sized farms and medium-sized businesses do not have technical staff employed full-time. Therefore, they invite, according to their need for assistance, the specialists/experts of the departments/stations of agriculture and extension or private consultants with whom they can have contractual service relations. Such a situation is also encountered in farms and large businesses that have veterinary specialists, but not always have an expert of animal sciences (zootechnics). Also, in the farms and businesses in our country, even the big ones, the farmers or their administrators do not always have an adequate professional education, secondary professional agricultural education, much less higher education in the field of agriculture. Therefore, this Erasmus project also foresees for the training of technical staff of farms/businesses to guide students in professional practice.

The ratio of the practical guidance of the students by the technical staff of the farm/business and that of the academic staff of AUT should be, as stated above, complementary and well-coordinated. We expect that, with the development of training and the increase in the level of qualification of technical staff of farms/businesses, the role of farmers and technical staff of farms/businesses in the practical guidance of students will increase hand in hand. However, we are aware that this process of "transfer" of leadership competence from the academic staff of the university to the technical staff of farms/businesses, requires time and stimulating incentives for the staff of farms/businesses. So, this is a (at least) medium-term development process, to which the Erasmus project in question also contributes.

2.6. Assessment of the teaching/training workload of professional practice.

The volume of the teaching/training workload during dual practice will be evaluated with credits - ECTS. These are practical training credits. Since our legal framework does not have any specific definition for the evaluation of professional practice, other than the general one for the workload of teaching work of a study program, we will apply the criteria provided by this regulatory framework in force, i.e., for 1 ECTS will be calculated 25 hours of training in the farm/business (1 ECTS=25 hours).

For one day of dual practice, 5 or 6 hours of in-farm/business practice or 25-30 hours per week are calculated.

Based on the above criteria and the duration of each period/module of professional practice, the total number of ECTS of practical training is calculated.

2.7. Assessment of Dual practice.

The results of professional practice are:

(i) **Practice Report**, in which the student describes and analyzes the issues foreseen in the practice program for the farm/business where he carry out it. It is evaluated on the basis of the presented report or even through the presentation. This will be defined in the program for each period of the practice.

(ii) **Project Work**, in which the student carries out the program provided in the topic/field provided in the respective project work. It is graded on the basis of the written material (Project Work Report) presented as well as its presentation in PPT.

The form of assessment and the relationship between the results (reports, presentations) of the practice are defined for each phase of the professional practice.

3. MAIN CHARACTERISTICS OF PROFESSIONAL PRACTICE ACCORDING TO YEARS OF STUDIES.

3.1. "Practice 1" module - basic characteristics.

- **Main objectives of practice** – The main objective of Practice 1 is to know the organization, operation and production activity of a farm/business in the field of livestock. Through Practice 1, students have the opportunity to apply the theoretical knowledge acquired in the second year of studies and described in the professional practice program Practice 1. In addition to the professional practice program Practice 1, students will also complete a Course Project (Project Work).
- **Duration and period of realization** – Practice 1 is the professional practice that will take place after the end of the cycle of theoretical lessons of the second academic year. It will last about 10 weeks, during the period mid of Mai until end of July of the corresponding calendar year.
- **Farm/business where it takes place:** Practice 1 can take place in any large or medium-sized farm or large business (e.g. feed factories and or medium in the livestock field), according to the list of farms/businesses that have an agreement with AUT for practical training of students.

- **Workload and ECTS** – Practice 1 includes 5 hours/day or 25 hours/week of professional practice on the farm/business. The workload will be calculated with 10 ECTS and will be recorded in the list of modules as "Practical module - Practice 1".
- **The main topics of practice-** The topics of practice 1 are oriented by the main modules that are developed in the theoretical part of the curriculum in the second year of Bachelor studies, in basic animal sciences, mainly in animal nutrition and food, hygiene and main animal diseases, housing systems, mechanization and constructions in livestock, management of farms, methods of communication and extension service in animal production, as well as agroecology and the environment. During the practice period 1, students, according to the practice program received by the department, follow all the work processes and activities of the farm/business in the field of animal husbandry or sub-sectors closely related to it, being sited to the farmer, the technical staff or the specialist/s who manage/technically assist the business.

In addition to the practice program 1, students independently complete a Project Work during it. Through this Project Work, students deepen and apply in practice, in the form of independent learning, the theoretical knowledge acquired mainly in the following areas:

- Animal Feeds and Feeding;
- Hygiene and animal health management;
- Husbandry systems, livestock mechanization and constructions;
- Development policies & counseling in the livestock sector;
- Agroecology and the impacts of animal husbandry on the environment;
- Management of livestock farms.

Each student chooses one of the fields mentioned above, which are announced by the department, and for each of them a Project Work Methodology is presented to the students in the form of a detailed work methodology based on which each student develops the Project Work.

- **Practice results** – Practice 1 results will be as follows:

- The practice report (15-20 pages), which describes and analyzes the organization, operation and productive activity of the farm/business where the student has completed the practice;
- Project Work, which should be 25-30 pages;
- PPT presentation, prepared on the basis of the Project Work, 15 -20 minutes.

- **Practice assessment form:**

- Practice Report No. 1 is submitted to the department and assessed without a grade as a settled obligation.
- The Project Work is defended in front of the lecturers of the group modules and assessed with a grade (75% of the Project Work assessment).
- PPT presentation, referred to the lecturers of the group modules and assessed with a grade (25% of the evaluation of the course project).

3.2. "Practice 2" module - basic characteristics.

- **The main objectives of the practice** - The main objective of Practice 2 is to know the organization, operation and activity of public, central, regional and local institutions (municipalities) of the agricultural sector (central agency, regional directorate of agriculture and rural development; agency/ units of the Advisory Service; animal feed and feed safety directorates/units/inspectors/laboratories, etc.), which direct and manage the development of livestock, animal feed and feed safety, and other sub-sectors related to livestock.
- **Duration and calendar period of realization** – Practice 2 is the professional practice that will take place immediately after the end of the 5th semester and lasts about 4 weeks.
- **The institution where it takes place:** Practice 2 can take place in any central, regional or local institution that operates in the above-mentioned field in the first paragraph of this subsection and that has an agreement with AUT for professional student practices.
- **Workload, practical training hours and ECTS** - Practice 2 provides for 6 hours/day or 30 hours/week of professional practice in a public institution. The workload of the practical training will be 4 ECTS and is recorded in the list of modules of the diploma and its supplement as "Practical Module - Practice 2".
- **The main topics of practice 2-** The main topics of practice 2 are oriented by the main modules that are developed in the theoretical part of the curriculum, especially in the second and third year of Bachelor studies, in particular, from the perspective of policies of development, practices of sector administration, practices of support and counseling of farms and businesses of the livestock sector, as well as those of supervision and inspection of this sector and the safety of primary livestock products and livestock feed. During the practice period 2 students, according to the practice program received by the department, follow all the work processes and activities of the public institution, being attached to its experts.

3.3. "Practice 3" module - basic characteristics.

- **Main objectives of practice** – The main objective of Practice 3 is to know the organization, operation, production activity and all links of zootechnical and economic management of a farm/business in the field of livestock. Through Practice 3, students have the opportunity to apply the theoretical knowledge acquired in all three years of studies, but especially those of the third academic year. In addition to the professional practice program Practice 3, during this time students will also complete a Project Work according to a Methodology of Project Work that they will receive from the department.
- **Duration and time period of implementation** - Practice 3 is the professional practice that will take place after the end of the cycle of theoretical lessons of the 5th semester. It takes place in the 6th semester and starts after the end of the practice in the public sector "Practice 2". It lasts 16 weeks and ends on 30.07. of the corresponding calendar year.
- **Farm/business where it is carried out:** Practice 3 can be carried out in any large or medium-sized farm or large or medium-sized business in the field of livestock and other sub-sectors related to livestock, according to the list of farms/businesses that have agreements with AUT for students' professional practices. It is intended that students perform the professional

practice "Practice 3" not on the same farm where they performed "Practice 1", so that they have the opportunity to gain experience in more species, i.e. types of livestock farms. In view of this goal, if it will be possible, the period of "Practice 3" can be divided and carried out in two types of livestock farms. This alternation is potentially possible due to the limited number of students (about 25 students) who will be admitted to this program. However, this will depend on the regional distribution of medium and small livestock farms and the accessibility of students due to their place of residence.

- **Workload, practical training hours and ECTS** - Practice 3 foresees 6 hours/day or 30 hours/week of professional practice on the farm/business. The workload of practice will be 18 ECTS and will be recorded in the List of modules as "Practical Module - Practice 3".
- **The main topics of practice** - The main topics of practice 3 are oriented by the main modules that are developed in the theoretical part of the curriculum in the third year of Bachelor studies, in applied animal sciences, mainly in breeding and farm management of different species of animals (cattle, sheep, goats, pigs, horse), poultry and bees. During the practice 3, students, according to the practice program received by the department, participate in all the work processes and activities of the farm/business in the field of livestock or sub-sectors closely related to it, being attached to the farmer, technical staff who technically run the business. In addition to the practice program 3, students independently complete a Project Work during it. Through this Project Work students deepen and apply in practice, in the form of independent learning (Project-based Learning or Independent learning), the theoretical knowledge acquired in the disciplines of special species of animals and poultry, mainly in the following areas :
 - Feeding technologies in different animal species farms;
 - Genetic improvement and reproduction in different animal species farms;
 - Hygiene, housing systems and animal welfare in different animal species farms;
 - Farm safety, quality and safety of primary livestock products;
 - Reproduction and artificial insemination of farm animals;
 - Economy and competitiveness of the farm.

All these aspects can be named as "Integrated management (zootechnical and economic) of the livestock farm", which means a synthesis of all the knowledge that the student has received by focusing on a farm animal species, for which he/she has chosen to develop the Project Work, under the guidance of the department's lecturers.

- **Practice results** – The results of "Practice 2" and "Practice 3" will be as follows:
 - a) Practice report No. 2: For both "Practice 2" and "Practice 3" modules, students prepare a report (Practice Report No. 2) of 20 - 25 pages, which consists of two parts (Part I - "Practice 2" and Part II - "Practice 3") where they reflect the implementation of the practice program implemented in the place of the dual practice. This report is evaluated without a grade as a "passed" or "completed".
 - b) Project Work, which should be 25-30 pages;
 - c) PPT presentation, prepared on the basis of the Project Work, 15 -20 minutes.
- **Practice assessment form:**

- a) The Practice Report 2 is submitted to the department and evaluated without a grade as a “passed” or “completed”;
- b) The Project Work is defended before a committee and evaluated with a grade (75% of the Project Work assessment).
- c) PPT presentation, referred to the committee and graded (25% of the Project Work evaluation).

3.4. Bachelor Project or Thesis.

In addition to the practice program 3, students perform during it, directly on the farm, the Thesis of Bachelor studies, through which students deepen and apply in practice, the theoretical knowledge acquired in the disciplines developed throughout the Bachelor studies. This project is finalized with a thesis, which also represents the first work with research elements that the student performs in the Bachelor's university studies. The department announces the Bachelor's topics and supervisors at the beginning of the third year of studies. Each student selects an applied topic related to the issue/activity of the farm/business where he/she develops dual practice. The Bachelor's thesis has a workload of 6 ECTS. It will be 30-35 pages and will be defended through a PPT presentation (15-20 minutes) to the department. The workload that the student will do for the thesis is 150 hours of independent work (6 ECTS x 25 hours) for its writing, presentation and exam. The topic of the thesis can foresee simple research elements (e.g. monitoring of production indicators, reproduction, evaluation of feeds and rations, etc.) they should be within the content of the dual practice program, which means that for the student does not need additional work on the farm. The thesis is presented at the end of July or in a second season in September of graduation year.

- ***Results:***

- a) Bachelor thesis, which should be 30-35 pages;
- b) PPT presentation, prepared on the basis of the Thesis, 15 -20 minutes.

- ***The form of evaluation of practice results:***

- Bachelor's thesis, presented before an exam committee and graded (75% of the Project Work assessment).
- PPT presentation, referred to the committee and graded (25% of the Project Work assessment).