

**ASKFOOD – Alliance for Skills and Knowledge to Widen
Food Sector-related Open Innovation, Optimization and Development**



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Collaboration and network plan_DRAFT

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Dissemination Level		
PU	Public	
PP	Restricted to other programme participants (including Commission services and projects reviewers)	
CO	Confidential, only for members of the consortium (including EACEA and Commission services and projects reviewers)	X

Summary:

This document represents a draft plan based first on the ideas and information of the project plans and on the information collected and the conclusions drawn from the implementation of the first 12 months of the project including networking and relevant trainings activities until March 2019. The plan will be reviewed after the first 20 months being implemented and updated according to especially:

- the application of the Askfood innovative trainings tools and approaches
- Activities related to the establishment of the Askfood clusters

A final version will be created at M34 as an internal working guideline for the training hub.

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1. Introduction – the idea behind the Askfood Innovative training hub

The overall aim of WP2 is to develop, structure and sustain the ASKFOOD Innovative Training Hub and Knowledge Clusters in the food and food-related sectors. Focusing on the Innovative Training Hub, the consortium is working on establishing a Joint Platform (ASKFOOD Innovative Training Hub) to share, test and apply disruptive training solutions, collecting inputs, contents and supports from academia, industry, and other key stakeholders in the food-related sectors.

The Platform will be based on an “hub and spoke” model, so to guarantee an evolutionary scheme to both academic and CDP training that can respect the three criteria of disruptive learner-led training:

- (1) personalized;
- (2) situated and context-specific;
- (3) authentic (because real-world problems and projects are literally within reach of disruptive training models).

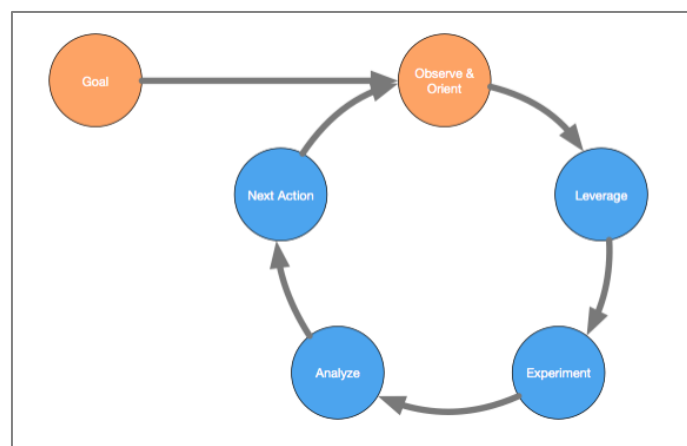
The innovative training platform consists of two parts:

- A Cohesive Network bringing together complementary skills (business, research and universities) to rethink the links between learning and business performance in food related sectors
- A Honing and Polishing Spot -connected with external clusters, business and scientific associations and technology and innovation platforms-where to:

- (1) characterize required innovations;
- (2) validate existing practices against what’s needed;
- (3) share the common basis to include innovation in disruptive training design so to re-juvenate existing joint degrees, internships, master programmes and CPD.

Directly linked to the business model (D2.2) of the Askfood innovative trainings hub and the clusters, the Askfood team will follow a GoLean approach to define, test and improve the approach:

- **Goal**
- **Observe and Orient**
- **Leverage**
- **Experiment**
- **Analyze**
- **Next Action**



The GOLEAN Framework for Growth – Love the Problem

Ash Maurya - LeanStack

In this way, below described aspects will be iterated applying the GO LEAN approach:

- **G - Goals:** Defining simple goals to aim for
- **O - Observe:** With your goal defined, chart the progress
- **L-Leverage:** The leverage step is about identifying the key lever, the single constraint that if addressed stands to create the biggest impact in the business model
- **E - Experiment:** Put your solution to the test
- **A - Analyze:** Analyze the results of multiple experiments, learn and apply at the strategy and/or business model level
- **N - Next Actions:** turn the learning into business model results

2. The project vision as basis for the hub vision

The hub is a direct output of the Askfood project. As such, it will initially take over the vision and mission of the Askfood project itself. Similar to several other aspects described in this plan, this vision will be reviewed in the frame of the project and further adapted to demand identified and conclusions drawn from activities implemented. As such, the current vision and mission of the Askfood trainings hub (together with the local clusters) is to:

- Upgrade and modernize training and educational methodologies in the food-related sectors. The ASKFOOD Innovative Training Hub will support innovative multi-actor educational networks.
- Leverage of innovation and entrepreneurial mindset of the future generation of graduates and the food-related studies.
- Improvement of academia-industry and stakeholders interplay in a Quintuple Helix innovation model.

3. Organisations, organisational structure and roles

The current structure and roles as well as involved organisations in the innovative trainings hub are based on the set structure and roles defined in the ASKFOOD project plans, bound by the legally binding grant agreement and the partnership agreement. Those form the basis for the implementation during the course of the project and will be further adapted to better suit the need of the hub, entering into force with the official end of the funding period of Askfood.

The roles within the Askfood innovative trainings hub is divided between Management/Organisational roles and content/training related roles.

Management/Organisational roles:

Hub Management team:

The hub management team consist of an official hub manager, a supportive administrative and financial office, project manager(s) and product manager(s). A management board will support the decisions of the hub.

The **Hub manager** has the overall responsibility for the coordination of the hub and its activities. He/She will lead the hub from a strategic perspective, update respective guidelines, evaluate the success of the initiatives performed by the hub and its partners. The day-by-day management will be performed. This also includes marketing activities and to a certain extent (especially in the first stage of the hub development) administrative tasks and tasks actually foreseen for the product-/servicemanager. In addition, financial planning and management is one of the responsibilities of the hub manager. Together with the other management roles, the hub manager develops business models for the individual products, tools and services offered.

For the course of the project, this role will be taken over by the coordinator of the Askfood project, Paola Pittia from partner Unite.

The hub manager for now will be also responsible for IP management. This will be based on the IP guidelines developed for the Askfood project. IP developed within the hub network and with any financial support of the hub will be considered IP of the hub and will for most cases be made available as open access material. If material was developed without financial support or by external partners, individual agreements for the right to use, licence etc. have to be set up.

The **hub management board** for now is based on the management board of the Askfood project, involving every single organisation and giving every single organisation a vote on hub related aspects. This shall ensure the active involvement as well as decision power of each organisation. Depending on the development and experiences during the implementation of the project,

The **Hub Administrator** and **financial controller** takes over the administrative tasks of the hub activities in close collaboration with the hub manager. This contains the classical office tasks and also support tasks including basic financial controlling.

For the course of the project, this task will be taken over by Federica Striglio from Unite

The **hub project manager** will manage the individual “projects” and project undertakings of the hub. This contains the structuring and planning of new projects (e.g. development of new products or collaboration projects), as well as supporting the implementation.

For the course of the project, Rainer Svacinka from Unite will take over this task.

Content/Training related roles

The activities of content/trainings related roles will be to provide their skills and expertise to validate standards and processes to support cooperation and joint generativity of new training models.

The **ASKFOOD project partners** in their role as project participants (and beyond) will support the identification, selection, adaptation and development of innovative trainings approaches, material and tools. Representing trainings organisations or higher education organisations, their expertise lies in this field. Within the ASKFOOD trainings hub, these activities will be focused and jointly planned and implemented.

ASKFOOD Associated partners will function as extended consortium during the time of the project implementation and will, similar to the project partners, support the trainings hub activities. Currently, the exact conditions of associated partners are developed. A brief draft can be found below.

Associated partners to the ASKFOOD project can be any organisation or private person active in the field of training, education or similar which is willing to support the identification and/or implementation of innovative trainings approaches for the European food sector.

Expectations are:

- Dissemination of the project and its activities
- Advertise the partnership to further partners
- To ensure a balanced network of company and educational partners, new educational members are asked to advertise the membership especially to their company partners
- Contribution to our survey on needs collection
- Brief yearly report of activities and plans for next year

The partners currently supporting the project as associated partners and those considered are described in the next chapter.

Location of the hub

For the course of the funded project duration, the Hub will be a domiciliated entity, hosted by UNITE and acting as central communication and innovation centre for the ASKFOOD Knowledge Clusters. After project end, the partners will decide on how to maintain and administer the Hub in cooperation with UNITE. Some of the options are to make use of the non-for-profit association Iseki or to use the reversed incubator scheme internally and found an own start-up for it.

4. Portfolio of expertise, practices, tools and resources from each partner

Askfood project partners:

By organisation type

Universities:

- UNITE is a University with main mission to lead and to perform to the formation of professionals in the food- and food related sector as a result of educational processes based on research, innovations and practical training in a lifelong learning perspective.
- BOKU, with Food Science and Technology programmes has a main experience in Educational and training activities in collaboration with industry and has main interaction with food industries and connected with the Danube region
- UHOH and WUR, 2 of the largest universities in the DE and UK, have expertise in bio economy. Both run innovative food study programmes very well equipped pilot plant in close collaboration with industries;
- CUT (CY) and UZAG (KR) are two universities committed in research and education and study programmes in the food related sectors and interactions at local, national and European level with food companies, especially SMEs

Business/enterprises:

The trainings hub requires the expertise of innovative and disrupting teaching methodologies to develop an entrepreneurial mindset of the students and future graduates and this will be the main role of **Cassiopea**. **LVA**, a private competence centre for the Austrian food industry has a main expertise in SMEs consultancy, training and knowledge transfer.

Food-sector Associations:

To reach also larger groups of the food industry, Food Associations have been selected to act as multiplier to the industry

- **FoodDrinkEurope** is composed by **20 Food and Drink Industries Federations, representing over 6000 companies**. The purpose of FDE is to facilitate and develop the activities of its members relevant to the development and implementation of training and educational activities aimed to implement knowledge and skills of practitioners in the food companies and enhance the entrepreneurial culture and mindset to innovate the sector.
- **FEDERALIMENTARE**, the Italian Food and Drink industries Federation will be of main support to the Project coordinator in the implementation of the project activities in Italy
- **IFA** act as interface to **Universities**. Its members are coming from almost all European Universities with food study programmes. IFA provides several databases, an e-learning platform and a webinar system. After the funded period IFA will play a major role for sustainability by maintaining of some ASKFOOD products.

A detailed mapping of existing expertise and innovative trainings solutions within the ASKFOOD consortium was performed. The detailed list can be found below:

Title of course	Content	Organizer (name + email)	Teaching method(s)	Assessment method(s)	Website	Duration	Target group	Brief description of the course
Validation of cleaning processes and hygienic design	hygienic design, cleaning and disinfection	Gerhard.Schleinig@boku.ac.at	blended learning, active learning	task assignments, written exam, presentation	https://boku.ac.at/en/lehre/veranstaltungen/lva/285553	1 Semester, 3 ECTS	students	This course gives an introduction to food safety and hazards by integration of the whole food supply chain, an overview of the relevant laws and guidelines, comprehensive information on hygienic design, zoning philosophy, cleaning and the validation concept. The course will be done as "blended learning", partially as e-learning (studying on-line materials, collaborative solving of tasks and case studies using a teamwork space, a forum and synchronous and asynchronous e-communication tools), and partially as face to face lectures. Case studies (theoretical and practical applications in the pilot plant) will be elaborated in team work. Students have to elaborate individual and group assignments like posting questions in forums, answering questions from the others, assess equipment from drawings, pictures and in a pilot plant, explaining risks and good solutions and making suggestions for improvement.
ESCAPE Training Course	Export and sales management	University of Turin (IT) and University of Wageningen (NDL) notarfonso@federalimentare.it sabbatini@federalimentare.it	Flipped classroom	Open question and multiple choice exam	http://www.escape-project.eu/	3 weeks	Students	The pedagogy of ESCAPE platform is based on 4 general modules and 3 country-specific modules in English: short videos, materials, exercises and quiz will gather the essential theoretical notions. The course also has a practical session at SIAL (21-25 Oct 2018), during which students could get straight to the heart of business activity.
UPDATEST	Testing technologies	AINIA (Spain) AUA (Greece) notarfonso@federalimentare.it sabbatini@federalimentare.it	Moodle - Modular Object.Oriented Dynamic Learning Environment	Other	http://updatest.eu/	Permanent access	Students, food technologists, food engineers	It will be based on a decision tree aiming at guiding users to a set of resources tailored to fit their specific needs. The e-learning platform will be built on Moodle and will include documents, links to internet-based resources, questionnaires, etc.
APPETITE	Sustainable Business Model	CRITT Agroalimentaire PACA (FR); AALBORG University (DK); FEDACOVA (ES); FEDERALIMENTARE (IT)	OER (Open Educational Resources) Learning Platform	Other - questionnaires, interviews	http://www.appetiteproject.eu/objectives/	Permanent access	Food entrepreneurs and students	The online platform aims at answering the detected needs for strategic business models in the agrifood sector. Through this platform the trainees, elder entrepreneurs and youth will have the chance to obtain and strengthen high quality work-based skills and competences in order to develop more efficient and sustainable business models. Thanks to evaluation tools, the trainees will follow a custom-made modular training

		notarfonso@federalimentare.it sabbatini@federalimentare.it						reflecting their level of qualification. Thus, this non-formal learning method will assure the flexibility of the trainees in acquiring the new high quality knowledge, skills and competences.
Food Solutions Courses (several topics) - EIT Food	Design thinking		Other	Pitch competition	e.g. https://www.eitfood.eu/programmes/foodio-food-solutions-master-class	up to 1 year	Students	multidisciplinary, challenge-based learning programme for bachelor, master and doctoral students, working together with tutors (professors, researchers and professionals) on a problem from the industry. The courses are conceived to educate in an international environment, connect business and academia, and stimulate for the creation of new food solutions for future innovation.
Start-Up Garage Hohenheim	Entrepreneurship skills	Leif Brändle (leif.braendle@uni-hohenheim.de)	Case studies/serious gaming	Pitch competition	https://www.garage-hohenheim.space/	up to 1 year	Students	innovative teaching format by the chair for entrepreneurship at the University of Hohenheim with the goal of making entrepreneurship accessible and usable for students. The method is based on the Startup Garage of the Stanford Graduate School of Business and was carried out for the first time in the summer semester 2015. It then was the exercise course for the for lecture on Entrepreneurship but is now open to all students at the University of Hohenheim. The students are accompanied by the entire process from idea-forming to the first pitch.
Humboldt Reloaded	Other	Julia Gerstenberg (j.gerstenberg@uni-hohenheim.de)	Other	Pitch competition	https://humboldt-reloaded.uni-hohenheim.de/en/home	1 Semester	Students	The aim of the project Humboldt reloaded (HR) - "Humboldt reloaded - getting started in science" is to educate undergraduate students in, and get them enthusiastic about scientific research. Key is to introduce research-based projects for first and second year undergraduate students as part of their bachelor-program. It is the intention to bring together students in small groups to teach them about the scientific method. Already at an early phase and at the example of the most current issues in science, students can get acquainted with the research process.
Mobile Teaching - Learning Locations	Other		Blended learning	Other	https://kim.uni-hohenheim.de/en/learning-locations	undefined	Students	The Hohenheim Learning Locations combine digital information like pictures, videos, tests, and comments with real places. The learning platform ILIAS and the Hohenheim App are the drivers of the learning locations. With ILIAS, the teaching materials about the learning object are made available to Learning Locations (plug-in) and linked with the learning location using GPS coordinates. With a mobile end device like smartphones or tablets, the materials

								can be called up, added to, or commented on within a 150 radius of the real learning location.
HOMA! - Hohenheim macht!	Entrepreneurship skills	Arturo Morales, M.Sc. (arturo.morales@uni-hohenheim.de)	Other	Pitch competition	https://hohenheim-macht.uni-hohenheim.de/		Students	HOMA! works to strengthen entrepreneurial culture across all faculties at the University and to support research-oriented start-ups with an emphasis on bioeconomy. (The Hohenheim Start-Up Garage is a part of HOMA!)
Chemistry and Technology of Meat and Fish	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Helga Medić (hmedic@pbf.hr)	Blended learning	Open question exam	http://www.pbf.unizg.hr/en/departments/departments_of_food_engineering/laboratory_for_meat_and_fish_technology/chemistry_and_technology_of_meat_and_fish	1 semester	Students	Primary processing of meat and meat categories. Post-mortem changes and meat composition in relation to meat quality. Technological quality of meat for processing. Preservation methods for meat and meat products.. Impact of preservation method on meat quality. Meat processing equipment. The characteristics and production of different types of sausages. Production of dry-cured hams, restructured whole-tissue meats, cooked meat products, comminuted meat products, cured meats and bacon. Canned meats and pate. Additives and spices. Starter cultures in meat processing. Meat packaging. The spoilage of meat and meat products. Safety and quality of meat products. Functional meat products and application of novel technologies in meat industry. By-products. Influence of chemical composition on changes during processing and storage of fish. Changes during the post-mortem period and freezing of fish. Influence of internal and external parameters on the shelf life of the product. Methods to evaluate freshness of chilled and frozen fish. Changes in protein, fat and water content of fish during the production of salted, smoked, marinated and canned products. Influence of antimicrobial factors on the safety, shelf life and product quality. Surimi. Production of fermented fish products, algae processing, functional products from aquatic organisms and by-products. Rapid methods in quality control.
Poultry and Eggs Science and Technology	Other	University of Zagreb, Faculty of Food Technology and Biotechnology Helga Medić (hmedic@pbf.hr)	Blended learning	Written report	http://www.pbf.unizg.hr/en/departments/departments_of_food_engineering/laboratory_for_meat_and_fis	1 semester	Students	Importance of poultry farming. Types and breeds of poultry important for industrial production. Primary processing. Postmortem changes. Characteristics and quality of poultry meat. Processing of poultry meat. Chicken eggs and egg products. Poultry products safety and quality

					h_technology/poultry_and_eggs_science_and_technology			
Raw materials for food industry	Other	University of Zagreb, Faculty of Food Technology and Biotechnology Helga Medić (hmedic@pbf.hr)	Blended learning	Multiple choice exam	http://www.pbf.unizg.hr/en/departments/department_of_food_engineering/laboratory_for_meat_and_fish_technology/raw_materials_for_food_industry	1 semester	Students	Fruits and vegetables: Production, botanical and technological classification. Botanical, physical and chemical criteria in quality assessment of fruits and vegetables (assessment methods, Croatian quality norms). Storage conditions. Chemical composition. Aspects of cultivation and structure of vines and grapes. Role of grapes in food industry. Grape variety. Grapes as raw material in production of wines. Origin, production and use of wheat, rye, oats, barley, rice, corn and pearl millet. Botanical, physical and chemical properties of cereals (laboratory methods, international standards, national quality standards). Storage of cereals. Equipment. Processing. Pests, Disinfection, desinsection, deratization. Food Quality a safety control. Botanical and others classifications of most important oil raw materials and their morphological structure. Basic chemical components (oil, proteins and cellulose), fatty acid share and oil properties. Differences between vegetable and animal raw materials. Biological and technological properties of sugar cane and beet, chemical composition, quality control, extracting, saturation and storage. Origin of cocoa tree, biological properties, chemical composition and sorts. Fermentation and quality. Storage and transportation. Milk-characteristics and composition (lipids, lactose, proteins, enzymes, minerals and vitamins). Breeding lines and anatomy of domestic animals. Classification and categorization of livestock and poultry. Chicken eggs – composition and properties. Taxonomy of fish, shellfishes and molluscs.
Mineral, Spring and Table Water	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Josip Ćurko, jcurko@pbf.hr	Other	Written report	http://www.pbf.unizg.hr/en/departments/department_of_food_engineering/laboratory_for_wa	6 weeks	Students	LEARNING OUTCOMES Define and explain differences between natural mineral, spring, table and tap water based on EU legal regulations. Discuss about health and nutritive effects from consumption of mineral water Compare different packing materials used for bottling

					ter_technology/mineral_spring_and_table_water			describe applicable technologies for natural water treatment Perform sanitation of water cooler
Nutrition II	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Ivana Rumbak, icecic@pbf.hr	Blended learning	Open question exam	http://www.pbf.unizg.hr/en/departments/department_of_food_quality_control/laboratory_for_nutrition_science/nutrition_ii	1 semester	Students	During lectures students will acquire basic knowledge about nutritional concerns and requirements that are specific to the different stages of the life cycle, during physical activity and for weight management. Students will gain knowledge about traditional diets, about world food supply and national food policy and guidelines. Diet and health relation will be discussed as well as new dietary trends and researches related to health.
Nutritional assessment	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Irena Colić Barić, icolic@pbf.hr	Blended learning	Open question exam	http://www.pbf.unizg.hr/en/departments/department_of_food_quality_control/laboratory_for_nutritional_assessment	1 semester	Students	This module deals with the dietary assessment methods (dietetic, anthropometric, biochemical, clinical) and specific measurement aid tools that are used in this assessment process. Through lectures and exercises each of the dietary assessment methods is explained, as well as food standards and dietary guidelines, tables /database with the chemical composition of food, specific indices and methods "in vivo".
Chemistry and Technology of Milk and Milk Products	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Rajka Božanić (rbozan@pbf.hr)	Blended learning	Open question exam	http://www.pbf.unizg.hr/en/departments/department_of_food_engineering/laboratory_for_technology_of_milk_and_milk_products/chemistry_and_technology	1 semester	Students	Composition, characteristics, nutritive value and differences of the main milk types. Methods and efficiency of mechanical, thermal and membrane processing of milk during production of pasteurised and sterile milk and milk powder. Milk fermentation by mesophilic, thermophilic, therapeutic and combined cultures of bacteria, and by yeasts as moulds as well. Impact of technological processes on characteristics of fermented milks. The role of probiotics and prebiotics. Nutritive value and therapeutic effects of fermented milks. Cheese classification. Methods of milk coagulation. The role of dairy cultures and other additives into cheese milk. Technological processes in production of different cheese types. Conditions and nurturing of cheese

					ogy_of_milk_and_milk_products			during ripening. Biochemical processes involved in primary and secondary stages of ripening, the ways of protecting cheese and possible defects. Composition and nutritive value of cheese and whey, possibilities of whey processing. Production of butter and ice cream.
Sensory and Chemometric Evaluation of Wine	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Karin Kovačević Ganić (kkova@pbf.hr)		Multiple choice exam	http://www.pbf.unizg.hr/en/departments/department_of_food_engineering/laboratory_for_technology_and_analysis_of_wine/sensory_and_chemometric_evaluation_of_wine	1 semester	Students	The course objective is introducing the students with adequate presentation, description and eating of wines. Within the course, students will learn about the physiology of olfaction (smell), taste, sight and hearing, as well as about the basic description of wine: flavour, taste and colour. Furthermore, students will also learn about the most common wine deficiencies, faults and diseases. In addition, they will learn about the most frequently used tests for sensory evaluation as well as most common physicochemical, spectrophotometric and instrumental analyses of musts and wines.
Applied Instrumental Analysis	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Karin Kovačević Ganić (kkova@pbf.hr)	Case studies/serious gaming	Written report	http://www.pbf.unizg.hr/en/departments/department_of_food_engineering/laboratory_for_technology_and_analysis_of_wine/applied_instrumental_analysis	1 semester	Students	The course objective is the application of the gained knowledge and development of practical skills required to independently perform the analysis using a sophisticated instrumental analytical technique.
Production of Predicate and Sparkling Wines	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Natka Ćurko (ncurko@pbf.hr)	Blended learning	Open question exam	http://www.pbf.unizg.hr/en/departments/department_of_food_engineering/labora	1 semester	Students	Production of "special wines" in world production takes a significant place. These wines are technologically more demanding to produce because they seek knowledge that is applied in the usual production processes, as well as the specificity depending on the type of wine. In this segment, it is particularly important to define wine by the regional rules. Students will learn to recognize the differences in production

					tory_for_tec h_nology_an d_analysis_ of_wine/pro duction_of_ predicate_a nd_sparklin g_wines			technology and the organoleptic specificities of different wines, and also will be closer to the "production philosophy" with special emphasis on the critical points of the production. After completing the course, students will be able to upgrade their knowledge from other basic wine-making courses, and will be prepared to overcome the technological problems in such production.
Chemistry and technology of carbohydrates and confectionery products	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Drazenka Komes (dkomes@pbf.hr)	Blended learning	Open question exam	http://www.pbf.unizg.hr/en/departments/departments_of_food_engineering/laboratory_for_chemistry_and_technology_of_carbohydrates_and_confectionery_products	1 semester	Students	<ol style="list-style-type: none"> 1. Raw materials for the production of sugar 2. Extraction of sugar from sugar beet, purification and evaporation of the extraction juice, sugar crystallization 3. Storage and secondary products in production, oligosaccharides and polysaccharides in the food industry, starch 4. Cultivation and processing of cocoa beans 5. Production of cocoa liquor, cocoa powder and cocoa butter 6. Production of chocolate, chocolate-like and cream products 7. Candy and related products- types and raw materials for their production, production of different types of candy products and confectionery masses
Chemistry and technology of stimulant food	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Drazenka Komes (dkomes@pbf.hr)	Blended learning	Open question exam	http://www.pbf.unizg.hr/en/departments/departments_of_food_engineering/laboratory_for_chemistry_and_technology_of_carbohydrates_and_confectionery_products	6 weeks	Students	<ol style="list-style-type: none"> 1. The history, botanical classification and cultivation of tea 2. Tea blends. The production of instant tea. Herbal infusions. 3. GABA teas, Maté tea (Ilex paraguariensis), Rooibos (Aspalathus linearis) tea – botanical classification, cultivation and processing. 4. The chemical composition of tea and its physiological effect on the human organism. 5. The history of coffee. The botanical classification, cultivation and processing of coffee. 6. The production of instant coffee. The decaffeination procedures. 7. The chemical composition of coffee, the physiological

					_confectionery_products/chemistry_and_technology_of_stimulant_food			effect of coffee on the human organism. Coffee substitutes. 8. Cocoa– botanical classification, cultivation and processing. 9. The production of cocoa powder. Instant cocoa drinks. 12. Cupuaçu (<i>Theobroma grandiflorum</i>) and guarana (<i>Paullinia cupana</i>) – botanical classification, cultivation and processing.
Sweeteners	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Drazenka Komes (dkomes@pbf.hr)	Blended learning	Open question exam	http://www.pbf.unizg.hr/en/departments/departments_of_food_engineering/laboratory_for_chemistry_and_technology_of_carbohydrates_and_confectionery_products/sweeteners	6 weeks	Students	1. The classification of sweeteners, the relative sweetness 2. Monosaccharide, disaccharide and oligosaccharide sweeteners- properties and use 3. Sweeteners based on starch (physico-chemical properties, production) 4. Sugar alcohols - production, physico-chemical properties and use. 5. Non-saccharide carbohydrates (honey)- chemical composition, physical properties 6. Non-carbohydrate sweeteners (synthetic, intensive, non-nutritive) 7. Natural sweeteners- sources, production and use
Oil and Fat Chemistry and Technology	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Dubravka Škevin (dskevin@pbf.hr)	Interdisciplinary	Oral exam	http://www.pbf.unizg.hr/en/departments/departments_of_food_engineering/laboratory_for_oil_and_fat_technology/oil_and_fat_chemistry_and_technology	1 semester	Students	Raw material evaluation criteria for edible oil processing and production of protein rich food. Expanding the raw material base. Technical-technological characteristics and microstructure of oil raw material and connection with individual production phases. Comparison and choice of technological procedures for crude oils and fats production. Cold pressed oils. Non-refined oils with accent to olive and pumpkin seed oil. Specifics of animal fats and see mammals and fish fats production. Factors determining the quality and oil cake and meal usage. Pre-refining of crude oil – conditions and dilemma. Comparison of refining processes and facilities. By-products. The influence of technological processes on oil quality and stability. Introduction to oil modification processes. Comparison of solid and plastic fats and emulsions production procedures (margarine, mayonnaise). Legislation, quality and authenticity control methods. Chemistry and technology of food deep frying and evaluation of oil and final product quality. New direction in research of lipids, oils and

								fats in food and diet. Modern approach to oils and fats composition and consumption. Technological projects of plant for non-refined and refined oil production.
Modified Fats and Oils	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Dubravka Škevin (dskevin@pbf.hr)	Peer learning	Written report	http://www.pbf.unizg.hr/en/departments/departments/department_of_food_engineering/laboratory_for_oil_and_fat_technology/modified_fats_and_oils	6 weeks	Students	Comparison of technological procedures for fat modification: fractionation, directed and random interesterification, hydrogenation, combination of procedures. Fat crystallization and the importance of polymorphism and triglyceride composition. Consistency. Shortenings: definition, principles of classification; oil blends – plastic, fluid and powdered shortenings. Bakery shortenings. Fryng shortenings. Cocoa butter substitutes and equivalents. Margarine and related products: historical and recent trends. Legislation. MCT- oils, olestra, multifunctional oils. Role of these fats in nutrition.
Food Additives	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Dubravka Škevin (dskevin@pbf.hr)	Other	Open question exam	http://www.pbf.unizg.hr/en/departments/departments/department_of_food_engineering/laboratory_for_oil_and_fat_technology/food_additives2	1 semester	Students	<ol style="list-style-type: none"> 1. What are food additives, and their classification according to properties and origin. 2. The safety evaluation of food additives. 3. The effect of chemical and physical factors on functionality and stability of food additives. 4. Benefits and risk of additives. 5. Legislation on additives. 6. Specific additives for particular food products and their function
Processing of Olives and Quality Control of Products	Other	University of Zagreb, Faculty of Food Technology and Biotechnology, Dubravka Škevin (dskevin@pbf.hr)	Blended learning	Open question exam	http://www.pbf.unizg.hr/en/departments/departments/department_of_food_engineering/laboratory_for_oil_and_fat_technology/processing_of_olives_and_quality_co	6 weeks	Students	History and characteristics of the olive oil tree. Olive fruit structure. The importance of optimal harvesting and storage of olive fruits prior to processing. Procedures for olive fruit preservation (traditional and modern) and quality evaluation of the products. Comparisons of processes of olive oil manufacture (pressing, centrifugal extraction, percolation). Solvent extraction and olive pomace oil. By-products utilization. Olive oil composition and properties. Factors affecting olive oil quality. Gourmet oils and other products. Requirements on olive oil storage and packaging. Specifics of deterioration of olive oil. International Olive Oil Council (IOOC) – trading specifications and standards for olive oil quality and authenticity and national legislation. Mediterranean diet, olive oil and human health.

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Food quality management (FQD20306)	Food quality management / Techno-managerial approach	Dr. ir. Elsbeth Spelt, Elsbeth.Spelt@wur.nl Wageningen University and Research	Lectures, tutorials, and case assignments	Multiple choice questions (20) and one case	https://ssc.wur.nl/Studies/Vak/FQD-20306	8 weeks (6 ECTS)	Master students in Food and Management (first year)	Management of food quality in the agri-food chain is rather challenging, because it deals with as well complex food production systems as dynamic food organizations operating in a vigorous environment. Integration of knowledge from natural and social sciences is therefore crucial in this area. The course is an introduction into the technological and managerial principles and practices in food quality management.
Food quality analysis and judgement (FQD-22306)	The measurement of food quality attributes in relation to the control decisions in factories	Dr. ir. Femke Brouwer, Femke.Brouwer@wur.nl, Wageningen University and Research	Lecturers, tutorials, groupwork, case assignments and practicals	Written exam, final group reports and presentations	https://ssc.wur.nl/Studies/Vak/FQD-22306	8 weeks (6 ECTS)	Master students in Food quality management (first year)	Food Quality Analysis and Judgement is a course which focuses on measuring and evaluating food quality through finding relevant measurable food properties that are indicators for food quality aspects. Theoretical topics (lectures) include chemical, physical, and sensorial indicators for food quality plus lectures on judgement in decision making processes. The extensive practical deals with translating the concept of food quality of real products into measurable food properties, to measure these, to judge the outcomes and to translate these back to food quality. In the last phase of each practical the students draw conclusions based on experimental data and report their findings. In the case assignment the students need to relate the conclusions from the practical to management decisions in a real company situation.
Food quality management research principle I (FQD-64306)	Research principles in the field of food quality management	Dr. ir. Pieter Luning, Pieter.Luning@wur.nl, Wageningen University and Research	Lectures, tutorials, and case/research assignment, group work	Research report, individual assessment and critical reflection	https://ssc.wur.nl/Studies/Vak/FQD-64306	4 weeks (6 ECTS)	Master students in Food quality management, Food safety management and Food technology	Food Quality Management (FQM) research encompasses the field of analysing and mitigating (solving) complex food quality management issues. It embodies understanding of technological aspects of agri-materials, ingredients and final foods and their food production systems (from stable to table), and how these affect product quality and safety. Moreover, it involves understanding of aspects related to people behaviour, quality management processes, organisational structures, supply chain management, governance (etc.), and how these affect the performance of the FQM functions (design, control etc.) aimed at realising and ensuring food quality.

							(first year)	
Food quality management research principle II (FQD-64806)	Research principles in the field of food quality management	Dr. ir. Pieter Luning, Pieter.Luning@wur.nl, Wageningen University and Research	Lectures, tutorials, and case/research assignment, group work	Research report, individual assessment and critical reflection	https://ssc.wur.nl/Studies/Vak/FQD64806	8 weeks (6 ECTS)	Master students in Food quality management (first year)	The research principles course II (FQD 35906) builds further on the previous course FQD-35806; the combined courses are the academic master course for MSc students in Food Quality Management. The course aims at learning how to apply the techno-managerial approach in collecting and analysing data/information on possible technological and managerial causal factors and develop possible interventions and recommendations to mitigate the FQM issue (research skills). The course will also broaden knowledge in the domain of food quality management by a group assignment on an actual topic about FQM in the food industry such as food safety culture, lean manufacturing, food waste reduction, risk-based supplier control, risk-based auditing, etc. (knowledge gaining). Furthermore, students will train their scientific reporting skills (writing skills).
Food logistics management (ORL-31806)	Integration of food quality and food logistics	Dr. Behzad Behdani, Behzad.Behani@wur.nl, Wageningen University and Research	Lecturers, tutorials, groupwork, game coupled with case assignments	Written exam with open questions and the assignments done throughout the course	https://ssc.wur.nl/Studies/Vak/ORL-31806	8 weeks (6 ECTS)	Master students in Food technology, Food quality management (first year)	Food Logistics Management (FLM) is about how organisations fulfil market demand by getting the right food product, in the right quantity and quality, at the right time and place, as efficient and sustainable as possible. It discusses issues and developments in logistics theory (such as buffering, inventory management, risk pooling) and combines it with developments in food quality management (such as quality monitoring and control, product quality prediction models) and information technology. Together it provides a firm basis for research on Quality Controlled Logistics (QCL), i.e. using information on the dynamic product quality behaviour to control goods flows in the supply chain in order to optimize product availability at retail outlets in an efficient and sustainable way.
Introduction to management and life sciences (YSS-22306)	Interdisciplinarity, Beta-Gamma disciplines, innovative products and processes	Dr. Eurne Inigo, Eurne.Inigo@wur.nl, Wageningen University and Research	Lectures, tutorials, and case/research assignment, group work	Final group report, presentation and defence, written exam	https://ssc.wur.nl/Studies/Vak/YSS-22306	8 weeks (6 ECTS)	Master students in all kinds of programs (first year)	Management Sciences provide the instruments that enable the design, implementation, and support of innovative organizational and business processes, which are required to successfully diffuse innovative products and processes into society. Beta-engineers may adopt a management role in academic environments, in production facilities or in supply chains. From this professional perspective, Beta-engineers apply their knowledge within settings that include people with different backgrounds, different interests, and from different positions in the chain or from different knowledge

								institutions. It is the integration and effective use of these varying positions and perspectives that ensures the successful completion of complex processes, such as product innovation or management of a supply chain.
Msc thesis Food quality and Design (FQD-80436)	Research in e.g. Food quality management	Dr. ir. Elsbeth Spelt, Elsbeth.Spelt@wur.nl Wageningen University and Research	Lectures, individual research work and MFQ colloquia, supervision meetings	Final research report, research competence, research presentation and defence of the research	https://ssc.wur.nl/Studies/Vak/FQD-80436	6 months (36 ECTS)	Master students in Food quality management (second year)	In line with the Food quality management research principles courses which are being taught to the students in the two above mentioned courses, the master students in Food quality management has to conduct an interdisciplinary research on their own under supervision of two supervisors to demonstrate their research competencies in the field of Food quality management.
MSc internship Food quality and Design (FQD-70436)	Internship in e.g. Food quality management	Dr. ir. Jozef Linssen, Jozef.Linssen@wur.nl, Wageningen University and Research	Supervision meetings, workplace meetings	Final report, professional skills, report internship, self-reflection, presentation, and defence	https://ssc.wur.nl/Studies/Vak/FQD-70436	6 months (36 ECTS)	Master students in Food quality management (second year)	The aim of the academic internship is that students gain experiences in an academic working environment. The internship provides the student the opportunity to work outside Wageningen University at a host organisation, e.g. a company, public institution, consultancy firm, research organisation, another university or non-governmental organisation, thereby broadening the academic horizon. The host organisation/work should be of sufficiently high academic standard to reflect the desired level of Wageningen graduates. For example students make a policy document, communication plan, evaluation report, landscape design, education or communication material or perform a research project.

Askfood Associated partners (status March 2019)

Organisation	Contact	website	Expertise	Comment
Sumo technology GmbH	office@sumo-technologies.com	www.sumo-technologies.com	Gamification, digital trainings solutions	Applied for associated membership
RISE ltd	info@rise.org.cy	http://www.rise.org.cy/en-gb/	bringing scientists, entrepreneurs, the local authorities and other stakeholders close together to enable innovation and commercialisation of research output and state of the art solutions	Considered for associated membership
priME Academy	heiko.hammer@primeacademy.eu	http://www.primacademy.eu/	Gamified entrepreneurship education	Considered for associated membership
The HIVE	floriano.bonfigli@the-hive.it	https://www.linkedin.com/company/the-hive-accelerator/	Business Accelerator	Considered for associated membership

5. The Askfood approach to support cooperation and joint generativity of new training models.

The whole Askfood project aims to support cooperation between relevant players in the field of trainings and education of the food sector to jointly generate and apply new and innovative trainings models and tools. The innovative trainings hub will make use of this approach during the project and improving the approach to be fit for sustainability after the end of the Askfood project. The consortium will apply the earlier mentioned go lean approach in their constant aim to improve and adapt.

The Methodology of the Askfood project itself represents also the initial approach for the Askfood trainings up. Askfood follows a 5 step strategy:

1. Anticipate
2. Activate
3. Stimulate
4. Support
5. Aggregate

The Askfood Innovative trainings hub will follow this approach and according to the go learn approach put this strategy in detail to the test and improve it.

Step1: Anticipate in the frame of the project means to focus on future in order to make academy-industry joint investments in training effective in addressing emerging and missing skills that derives from the challenges that are disrupting the competitive environment, the job market and the technology framework in the food-related sectors.

Askfood created 3 valuable tools to apply for this. In the frame of the innovative trainings hub those tools will form the innovative basis to continue to collect and validate present needs and future trends in the food-related sectors and link those to emerging skills and professional profiles. This shall help to guarantee an effective matching between demand and offer of knowledge in the food-related sectors. As such, the trainings hub will provide and apply:

- The ASKFOOD Forecast Aggregator
- The Interactive Training Gap Identifier
- And the ASKFOOD Smart Atlas

Step 2: Step 2 of the Askfood project focusing on Activate, concerns exactly the Innovative trainings hub and the closely linked local representations, the knowledge clusters. For the Askfood innovative trainings hub, step 2 means to activate the relevant stakeholders (and keep them activated) by providing and applying the project tools and outcomes as well as further extending it. Currently this step is strongly related to analysing the local structures for the clusters, understanding the detailed, individual issues and finding the best approach to support them. The initial analysis of the stakeholder environment shows a huge potential and need, however very diverse situations for which a common approach still needs to be found. This is a core mission of the Innovation hub and its members. The current status of the cluster can be found in deliverable 2.2.

Step 3 and 4: Concerns **Stimulation** and **Support** of the network through development of guidance for innovative trainings activities as well as upgrade of existing trainings scheme based on these guidelines. The Innovative trainings hub will continue to identify innovative and disruptive approaches, provide guidance on how to apply for existing training as well as directly support the upgrade of training. The trainings will range from academic training to cpd training. Thus, the hub will target students, teachers, managers, professionals and start-up entrepreneurs. The activities will include dedicated piloting activities. For this, the partners will rely on the innovation regarding training in their organisations and the joint application for different training.

The Askfood certification scheme for CPD shall give the improved trainings official recognition and thus also support the hubs reputation for innovative, disruptive trainings approaches.

The Reversed incubator approach will work as a lighthouse initiative of the Askfood innovation hub, linking several players including companies, accelerators, students and other talents under one scheme. The hub will be the provider of templates, guidelines and best practise approaches which will be provided to the local clusters for application and (where necessary) adaptation. The scheme will be constantly observed and the hub will work as connection and experience exchange point for clusters to share their individual experiences and work on constantly improving the scheme.

Step 5: Aggregate is most likely one of the most interesting hub activities and still one of the most vague activities to be implemented in the frame of the Innovation hub. It concerns the implementation of a permanent observatory Innovative Training for the food-related sectors. This Observatory is foreseen to collect information and initiatives in order to point the way to possible innovation paths but also, more significantly and with a more long-term approach, to evaluate the prospects and carry out risk analyses on the basis of both macroeconomic indicators and more qualitative observations on the business environment of each country and on how it relates to evolving training needs. In this frame, the Askfood innovation hub will initiate flagship projects and support the development of future joint projects in the field. The detailed activities for planning this service will start in M24 of the Askfood project.

The current status of the related Business model/plan is described in D2.2. It is subject to constant iteration together with the partners and based on the feedback of the stakeholders.