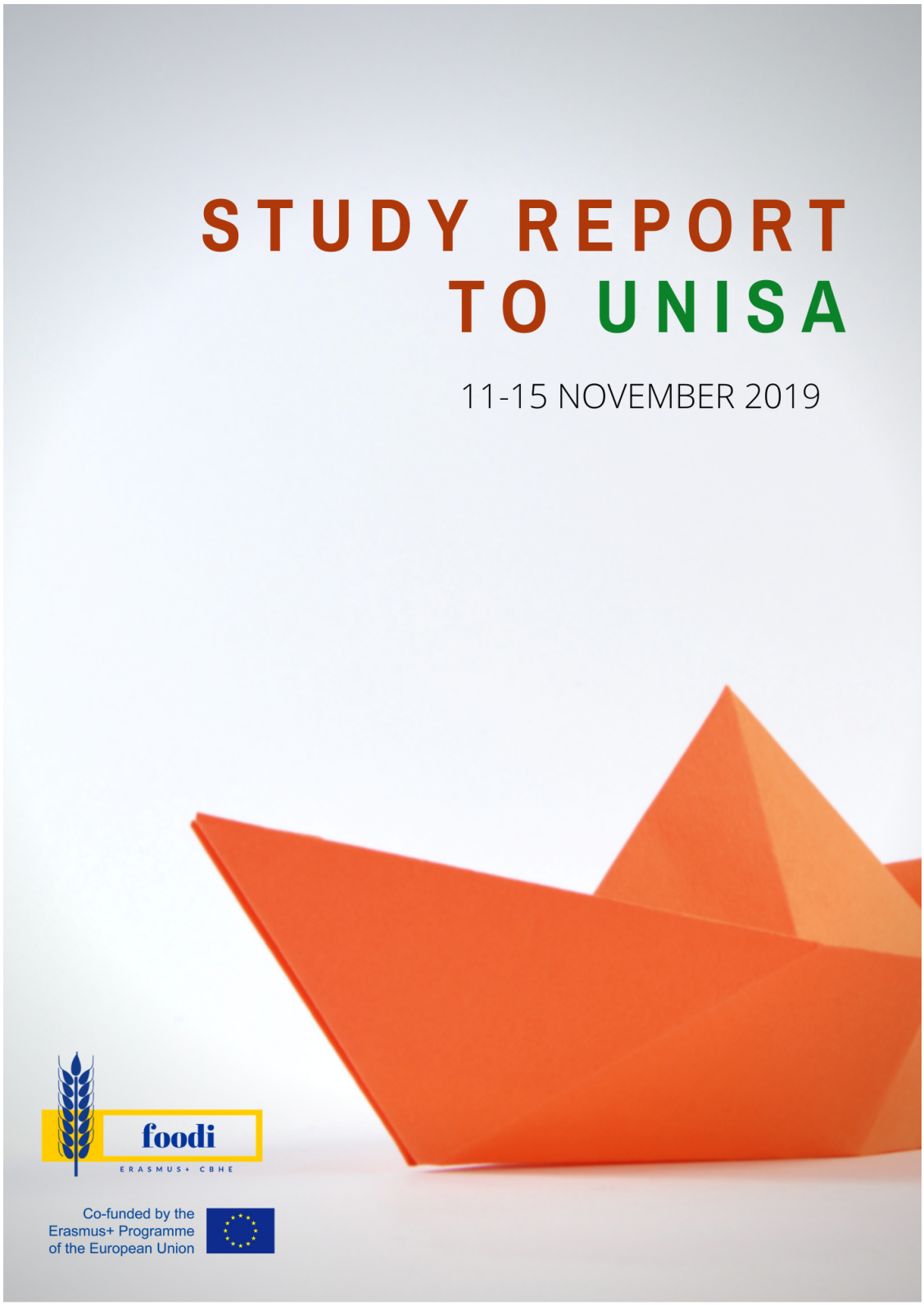

D2.2 STUDY VISIT REPORT

WP 2: Capacity Building and Curriculum Development

Project Information

Project Acronym:	FOODII
Project full title:	MSc Course in Food Processing and Innovation
Project No:	598987-EPP-1-2018-1-MY-EPPKA2-CBHE-JP
Funding Scheme:	Erasmus+ KA2 Capacity Building in the field of Higher Education
Coordinator:	UTM
Project website	www.foodi-project.eu

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Date	May 2020

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Executive Summary

The second of two scheduled study visits under the auspices of the ERASMUS+ FOODI Project took place at the Università degli studi di Salerno (UNISA) between Monday, November 11 and Friday, November 15, 2019. An interim period of seven weeks had elapsed between the study visit to University College Dublin (UCD) (September 16-20, 2019).

Outcomes from UCD and the Interim Period between UNISA and UCD

Following the study visit to UCD, a number of significant outcomes had been achieved and agreed upon. These included the decision that the FOODI MSc Programme would include only one programme stream, but that the single stream would include both technical (engineering, science, nutrition, health) and business (entrepreneurial/intrapreneurial, innovation, business strategy) aspects. The FOODI MSc Programme vision and values statement and programme outcomes, together with the target audience and desirable skills had also been agreed. The FOODI MSc Programme architecture was broadly laid out at the end of the UCD study visit, following intensive, focussed input from UCD Teaching & Learning. Crucially, that the programme should contain 90 ECTS, delivered over three semesters, with 72 core and 18 elective credits was agreed as was the credit allocation of 6 credits per course. The core of the FOODI MSc Programme was to be a cross-disciplinary project with an allocation of 30 credits, with a major focus on creativity and innovation, including an industry internship and culminating in a report presented in a traditional thesis format. Flexibility was afforded in the array of elective courses, albeit a choice of only three such courses, each carrying the standard six credits, could be chosen.

On the final day of the UCD study visit, participating HEIs from Asia, with assistance from EU HEIs, were allocated FOODI MSc courses (both core and elective courses) by choosing their preferred course options for development. There was general agreement that the broad outline of the Programme should be adhered to so as to minimise subsequent changes but also broad acceptance that there remained scope for subsequent relatively minor modifications by way of possible scope or sequencing or insertion of additional elective courses. During the interim seven weeks, two remote meetings were hosted on online platforms by the UCD team with partners from UNISA and the University of the Aegean who could not attend the UCD study visit. These resulted in the inclusion of a Food Process Design course in Semester One, which had not been considered originally. It was also suggested and provisionally accepted that Entrepreneurship and Business Strategy when viewed from an academic perspective, can and should be regarded as separate business functions and disciplines and should not be combined in one course but delivered as separate courses. It was also noted that the Research Methods course could be broadened to reflect the range of skills that a graduate would likely need. This course was changed to Research & Investigative processes since a graduate would need knowledge and skills in business research and information retrieval as well as in traditional scientific research and areas such as statistical analysis and experimental design. Hence, a pivot to balance the needs of business and science research methods.

Given the general agreement of the courses to be included in the FOODI MSc Programme, the next task was development of Course Descriptor documentation templates, to be eventually included in a Teaching Manual for coordinators and staff tasked with delivering the FOODI MSc Programme in South-East Asia. The Course Descriptor template had gone through two iterations and included standard information relating to the course title and code, coordinator, credits and places, a description of the course, the learning outcomes,

the teaching and learning methodologies and tools, assessment types, indicative student learning input and indicative content, replete with relevant information sources, including but not limited to articles, textbooks and websites. It was compiled from a combination of similar documents, including pre-existing course descriptors from partner Asian HEIs. In the event, almost all Course Descriptor documentation was returned to the UCD team in advance of the UNISA study visit.

1 The Study Visit to UNISA

During the first day in UNISA, participants were updated on progress in the interim period since the UCD study visit. The iterations in the programme courses, scope and sequencing were outlined (Appendix II). Contributions were also made by FOODI participants who had been involved in previous ERASMUS+ Programmes in South East Asia – ASIFOOD and SIMPLE (Support of International Platforms Merging Labour & Education) as it was viewed that their experience would be invaluable to the ongoing FOODI Programme development. Since at this point, most emphasis had been placed on the FOODI MSc programme, priority was given to the development of the FOODI VET Courses on Tuesday, November 12. Immediately prior to the VET Course Outline development, Professor Max Barolo from the University of Padua gave a presentation on 'Redesigning the lecture: thoughts from an active learning practitioner" which espoused a philosophy of innovation and creativity and fresh perspectives not just in content but also in approach, teaching style and pedagogy. This contribution reflected the ethos presented by UCD academic staff in the UCD study visit, but was also consistent with the intent to infuse the FOODI Programme with innovation and creativity, both in content and pedagogy. After an intensive day of activity led by colleagues from Athens Metropolitan College (AMC), 10 VET Course Outlines were developed and presented to the assembled FOODI Consortium partners.

During the next two days, significant input was contributed to the central core element of the FOODI MSc Programme – the 30-credit Project. At the conclusion of the UCD study visit, the components of the 30 credit Project were a Creativity, Innovation and Design Thinking 6 credit component, together with an internship and a thesis or report (it was agreed that the report documenting the internship would be written in a thesis style or format). However, it was recognised that this structure and sequence was fluid and would likely change following input from all contributors. It was agreed that Entrepreneurship should be combined with the course on Creativity, Innovation and Design Thinking, but still retain the 6-credit weighting. In this case, the course formerly known as Entrepreneurship & Business Strategy would be called Business Strategy & Policy but also retain its 6-credit weighting. Finally, the nature and operation of the FOODI Virtual Learning Environment (VLE) was outlined by Read Lab and their advocacy of an approach to online delivery similar to a MOOC (Massive Online Open Course). The objectives of the study visit, which were the consolidation and refinement of the FOODI MSc Programme structure, and elucidation of the core FOODI Project, together with the elaboration of the VET course outlines were achieved.

Key Objectives:

- Consolidation and refinement of the FOODI MSc Programme structure that had been agreed in UCD
- Elucidation of the 30-credit FOODI Project Core and its operation in practice
- Elaboration of the FOODI VET Course outlines
- Consolidation of tasks to facilitate completion of FOODI Work Package 2 deliverables which were:
    - Specifications of the FOODI VLE
    - Study visits to Europe for Curricula Development
    - FOODI VLE
    - Description of methodology and tools
    - FOODI Course Outlines
    - Teacher's Guide

1.1 Study Visit, Day One. Monday, November 11, 2019

Professor Massimo Poletto welcomed participants to UNISA and began by outlining the accreditation process for Engineering courses in Italian universities (see Appendix I). This contribution helped to inform the process of accreditation of the FOODI MSc Programme which the FOODI Consortium were aware would be required between Programme development and roll-out in South-East Asia.

Professor Frank Monahan then reviewed and summarised the outcomes of the UCD study visit and the consolidation and refinement activities that would be required during the study visit, mainly relating to minor changes in programme structure as well as more intensive input into the core 30-credit Project. A series of slides were presented which visualised the iterations that had occurred in the FOODI Programme structure in the interim period between the UCD and UNISA study visits (see Appendix II).

Following the study visit to UCD, a number of significant outcomes had been achieved and agreed upon. These included the decision that the FOODI MSc Programme would include only one programme stream, but would include both technical (engineering, science, nutrition, health) and business (entrepreneurial/intrapreneurial, innovation, business strategy) aspects. The FOODI MSc Programme vision and values statement and programme outcomes, together with the target audience and desirable skills had also been agreed. The FOODI MSc Programme architecture was broadly laid out at the end of the UCD study visit, following intensive, focussed input from UCD Teaching & Learning. Crucially, that the programme should contain 90 credits, delivered over three semesters, with 72 core and 18 elective credits was agreed as was the credit allocation of 6 credits per course. The core of the FOODI MSc Programme was to be a cross-disciplinary project with an allocation of 30 credits, with a major focus on creativity and innovation, including an industry internship and culminating in a report presented in a traditional thesis format. Flexibility was afforded in the array of elective courses, albeit a choice of only three elective courses, each carrying the standard six credits, could be chosen.

Participating HEIs from Asia, with assistance from EU HEIs, were allocated FOODI MSc courses (both core and elective courses) by choosing their preferred course options for development. There was general agreement that the broad outline of the Programme should be adhered to so as to minimise subsequent changes but also broad acceptance that there remained scope for subsequent relatively minor modifications

by way of possible scope or sequencing or insertion of additional elective courses. During the interim seven weeks, two remote meetings were hosted on online platforms by the UCD team with partners from UNISA and UAegean who could not attend the UCD study visit. These resulted in the inclusion of a Food Process Design course in Semester One, which had not been considered originally. It was also suggested and provisionally accepted that Entrepreneurship and Business Strategy when viewed from an academic perspective, can and should be regarded as separate business functions and should not be combined in one course but delivered as separate courses. It was also noted that the Research Methods course could be broadened to reflect the range of skills that a graduate would likely need. This course was changed to Research & Investigative processes since a graduate would need knowledge and skills in business research and information retrieval, e.g. Mintel Market Research, as well as in traditional scientific research and areas such as statistical analysis and experimental design. Hence, a pivot to balance the needs of business and science research methods.

Given the general agreement of the courses to be included in the FOODI MSc Programme, the next task was development of Course Descriptor documentation template, to be eventually included in a Teaching Manual for coordinators and staff actually tasked with delivering the FOODI MSc Programme in South-East Asia. The Course Descriptor template had gone through two iterations and included standard information relating to the course title and code, coordinator, credits and places, a description of the course, the learning outcomes, the teaching and learning methodologies and tools, assessment types, indicative student content and indicative content, replete with relevant information sources, including but not limited to articles, textbooks and websites. It was compiled from a combination of similar documents, including pre-existing course descriptors from partner Asian HEIs. The iterations of the Course Descriptor template are provided in Appendix II. HEI participants were also reminded of their Course Development responsibilities. In the event, almost all Course Descriptor documentation was returned to the UCD team in advance of the UNISA study visit. However, there was substantial variation in how the Course Descriptor template document had been completed and thus, to ensure standardisation to the greatest extent possible, commentary and guidance was provided by the UCD team on the required information for the Course Descriptor documents (see Appendix III). Participants continued to update and amend their Course Descriptor template documents during the early days of the study visit.

Previous experience of FOODI participants was identified earlier in the project and was harnessed during the UNISA study visit by presentations given by Dr. Anil Kumar Anal from Asian Institute of Technology, Thailand, who outlined the progress of another ERASMUS+ Capacity Building in Higher Education (CBHE) project called ASIFOOD. ASIFOOD was primarily concerned with addressing deficiencies in the food safety infrastructure in South-East Asia and established food safety training courses to be incorporated into Masters Programmes in ASEAN. Dr. Keomseang Nhuong from the University of Battambang, Cambodia outlined her experience in the SIMPLE (Support of International Platforms Merging Labour and Education) Programme which was another collaboration between the EU and ASEAN aiming to foster linkages between Universities and the professional sector in the area of agriculture and life sciences. ASIFOOD and SIMPLE presentations are provided in Appendix IV.

During the remainder of the first day, consolidation of the work done in Dublin was carried out and there was much discussion about the shape, scope and sequence of the FOODI MSc Programme, and consideration of issues such as accreditation but also, crucially, about the content of the programme including the core Project. Based on their expertise, seniority and nationality (since country contexts and local factors and conditions would inform the operation of FOODI in each HEI) were distributed amongst the courses so that

discussion could take place on course content and course descriptors on Tuesday and Wednesday. The discussion on Wednesday would centre on the 30-credit Project.

1.2 Study Visit, Day Two. Tuesday, November 12, 2019.

Tuesday morning began with a presentation by Professor Max Barolo from the University of Padua, entitled, "Re-designing the lecture: thoughts from an active learning practitioner". Many of the participants from Asian HEIs had indicated that active learning approaches would be used in FOODI course delivery, so many participants were already familiar with some of the concepts elaborated by Professor Barolo. He urged participants to empathise with students, and to recall teachers who had been formative in their own development. Active learning emphasised continual monitoring of student learning, as well as peer learning and assessment and is recognised as a departure from the 'sage on the stage' approach that is traditionally regarded, recalling the lecture format used by Henry of Germany. He also explored the concept of the flipped classroom, and thus participants were re-acquainted with a concept first mentioned in the UCD study visit. The slides of Professor Barolo's presentation are provided in Appendix V.

Following Professor Barolo's presentation, the focus shifted to development of the FOODI VET Course Outlines led by Athens Metropolitan College. The task entailed each HEI developing a course outline according to prescribed structures and procedures elaborated by AMC staff in line with deliverable 2.3 of Work Package 2 (WP2). The specific needs of each country were outlined prior to the engagement of groups in the exercise, conducted with the assistance of AMC staff. Qualitative research with food industry representatives on the training needs of the existing personnel in the region had been conducted which identified the need for innovative training programmes in the food VET sector at soft business skills such as negotiation and digital skills. Each Asian partner HEI need to develop one new professional training course tailor made to the training needs of the regional food industry and special characteristics of their region. A total of 10 new professional training courses were created. These professional training courses are intended to run in 4 rounds in the third year of the project and is expected to attract 5 professionals from local businesses per round (i.e. a total of 20 participants per Asian HEI). The key findings and training areas identified in each country context were as follows:

Malaysia

Key Findings:

- Fundamental needs and challenges faced by food processing industries.
- Career hunting
- Lack of problem-solving and teamwork skills

Emphasis on skills:

- Digital
- Negotiation
- Innovation

Type of training needed:

- Halal Certification
- Regulatory Requirements
- Food Safety
- Licensing dietician
- Financial aspects of business
- Food Chemistry
- Food Engineering
- Food Marketing
- Food waste management/reengineering
- Skills for developing “Wholesome Nutritious Food”
- Negotiation Skills

Cambodia

Key Findings:

- Need for Quality assurance
- Need for new creative ideas
- Communication skills.
- Product development can be an input in the food processing.
- Digital Skills

Training Curricula design must include the following:

- Entrepreneurship and innovation
- Food supply chain management
- Food legislation and international trade
- Consumer preference and behaviour
- Innovative food products
- Innovation in industrial food processing
- Food safety and quality management
- Advanced food analysis
- Unit operation and food engineering
- Industrial process control
- Research methodology in food science
- Entrepreneurship and innovation

Thailand

Key Findings:

- Demand for training courses in the areas related to food innovation.

- Training courses have to focus on the development of academic, technical and soft skills. The enhancement of specific skills such as laboratory analysis, management, communication and software skills.
- Lack of laboratory skills and quality analysis management.

The numbers and types of sector-specific and soft skills courses to be developed and delivered in each country was also elaborated. The soft skills gap was identified as particularly acute across the entire region and therefore the focus on soft skills was intended to apply across the region. These soft skills included:

- Innovation
- Research
- Entrepreneurship
- Communication
- Flexibility
- Leadership
- Management

As a prelude to engaging in group activities to develop the training courses, a series of instructional slides was presented by AMC staff. In developing the VET Course outlines, participants were instructed to use the SMART approach as indicated immediately below,

Specific	The learning objective should be clear and well defined, describing the knowledge, skills and competences that a learner should be able to demonstrate following exposure to a learning activity
Measurable	Achievement of learning objectives can be measured through benchmarks or targets by specific evaluation methods during or after the session
Attainable (Action-oriented)	The objective includes an action verb that demonstrates change or acquisition of knowledge, skills or competences
Relevant	The objective reflects relevant expectations of knowledge, skills and competences acquisition/change given the conditions for instruction
Time-bound	The objective specifies a time frame in which learners are expected to achieve the learning objective(s)—usually by the end of the session

Figure 1 Design of FOODI VET courses - The SMART approach

Similar to the development of the MSc programme, critical factors were considered in the group discussions that followed issues such as the timeframe of the training course, the scope and sequence and the learner's profile and background. A template was given to groups in which to frame the VET Course outline.

This template included such information as the course title, course description, knowledge domain, target audience, basic learning objectives, course length and schedule, learner's profile, participation pre-requisites and special needs from the educational environment and assessment methods.

At the conclusion of this process on Tuesday afternoon, all VET Course outlines that had been developed were presented by each of the HEI that had developed them.

- New Product Development & Marketing (2-day training course)
- Introduction to Food Safety
- Food Science & Wellness
- Halal Food Assurance
- Innovations in Safety, Quality and Sustainability in Food Production (Asian Institute of Technology)
- Food Safety & Food Quality (Institute of Technology of Cambodia)
- Food Product Development & Innovation (Prince of Songkla University)
- Food Quality Management (Svey Riang University)
- Food Supply Chain Management (University of Battambang)

Participants worked in groups with their HEI colleagues although it was agreed that further refinement of the course outlines would likely be required after the study visit in close collaboration with AMC.

Study Visit, Days Three and Four. Wednesday-Thursday, November 13-14, 2019

The activities on the third day of the study visit focussed on a) development of the Course Descriptors and b) development of the practical aspects and operation of the FOODI Core project, a 30-credit module which is the central and distinguishing feature of the FOODI MSc programme and thus, regarded as particularly important and the unique selling point of the FOODI MSc programme. Five groups were created, although 2 sets of groups merged. Each group was tasked with laying out the practical operation of the FOODI Core project – which also, it was felt, needed a unique and 'catchy' acronym. Two of the groups outlined their vision on slides. The main qualities of the FOODI Project core were felt amongst participating HEIs to be that some flexibility was needed, some required a thesis type deliverable, a traditional 15 week internship was not really deemed as appropriate (a much shorter and more focussed internship was considered a better option, otherwise FOODI students could end up merely working for a sponsor company rather than focussing on real problems and potential innovative solutions), possibly introducing a community based element and addition of the FOODI conference, and inclusion of a reflective journal, which would also contribute to an assessment.

Course Descriptors (which had been communicated to FOODI Consortium HEI in the interim period between visits) were populated on the fourth study visit day (there had been some activity on this task by the ASEAN HEI prior to the UNISA study visit) by active engagement between EU and ASEAN partners (for reference, ASEAN and EU partners with co-responsibility for Course Descriptors had been agreed during the UCD study visit (p.127 of UCD study visit report)). The evolution of the specific courses is outlined in Appendix

II, APPENDIX II. FOODI MSc Programme consolidation, refinement, course descriptor development and post-UNISA study visit steps (Professor Frank Monahan, UCD).

The changes that had evolved between the UCD study visit and the UNISA study visit were as follows:

At the conclusion of the UCD study visit, the components of the 30 credit Project were a Creativity, Innovation and Design Thinking 6 credit component, together with an internship and a thesis or report (it was agreed that the report documenting the internship would be written in a thesis style or format). However, it was recognised that this structure and sequence was fluid and would likely change following input from all contributors. It was agreed that Entrepreneurship should be combined with the course on Creativity, Innovation and Design Thinking, but still retain the 6-credit weighting. In this case, the course formerly known as Entrepreneurship & Business Strategy would be called Business Strategy & Policy but also retain its 6-credit weighting. The FOODI Core Project was regarded as one module rather than three separate modules ((a) creativity, design thinking & innovation, (b) thesis and (c) internship). The Course Descriptors also evolved to include more granular information and these details are also indicated in Appendix II.

The final activity on Thursday, November 14, was an outline of the structure and operation of the proposed FOODI Virtual Learning Environment (VLE) by ReadLab.

- The FOODI VLE would aim to go one step beyond Moodle.
- It would have the look and feel of MOOC (Massive Online Open Courses) platforms such as Coursera
- The platform used had been created by Harvard and MIT; it is an Open Source platform, and can be reformatted according to your needs
- Designed to engage students and teachers in an interactive way; lecturer is more like a facilitator
- Open source means supported by a community
- Objective is to cherry pick plug-ins to enhance functionality, i.e. to insert a third-party functionality into the platform
- Not all code being developed is tested to ensure that it works smoothly so test environment needed; development community is strong due to developments all over the world so Read Lab can gain access to other developments, and they plan to test to ensure that when a plug-in is added it doesn't break what is already there.
- One forty-five minute lecture needs to be broken down into smaller pieces of knowledge, i.e. micro-video learning, links, references, small quizzes, group assignments. A 45-minute lecture is a learning sequence of such activities.
- Content disaggregated by time such as a lecture for week 1, week 2 etc.
- The VLE management roles would include
- Admin
- Staff (instructor)
- Moderator
- Beta tester
- Instructor interaction
- Studio – create content
- Enrolling learners
- Managing course team accounts

- Defining grading policy
- Sending bulk emails to learners
- Accessing metrics for Open Resource Assessments
- Managing discussion forums
- Schedule/deliver live sessions
- Instructor-based, more traditional, week after week content being delivered to the learner
- Entire courses can be uploaded as a zip file from one server to another

SCORM (Sharable Content Object Reference Model). The SCORM interface and service was outlined as a tool to enhance building of the FOODI VLE. Further details are available at the following link, https://scorm.com/scorm-explained/

Mentimeter

menti.com; login code: 16 38 63

A question from Rosmini Omar related to the provision of technical support and Petros Chondros said that VLE administration was not a technical issue *per se*, but more an administrative issue relating to how the platform is maintained after roll-out. Rosmini Omar wondered if a bilateral agreement would be needed in this regard. Thus, there are issues relating to administrative oversight of the FOODI VLE after roll-out. Further consideration will need to be given to these as the project progresses.

The HEI can apply fees for courses after roll-out as a source of revenue for maintenance. An Exploitation Plan is needed.

Other considerations

-Terms of Service

-Data and Privacy

-Honour Code

2 APPENDIX I. Accreditation of Engineering Courses in Italy (Professor Massimo Poletto, UNISA).

UNIVERSITÀ DEGLI STUDI DI SALERNO

Università di Salerno
Dipartimento di Ingegneria Industriale

Co-funded by the Erasmus+ Programme of the European Union

Quality for study programmes @ UNISA

Massimo Poletto
Department of Industrial Engineering
University of Salerno

FOODI Visit@UNISA,
University of Salerno - Department of Industrial Engineering
Room 118, 11 November 2019 10.00

Co-funded by the Erasmus+ Programme of the European Union

Quality control

Accreditation for the engineering courses @ UNISA

Co-funded by the Erasmus+ Programme of the European Union

- Compulsory Ministry Accreditation
  - Provided by ANVUR (https://www.anvur.it/) member of ENQA (European Association for Quality Assurance in Higher Education - https://enqa.eu/)
  - All HEI courses providing legally recognized degrees in Italy have to comply with ANVUR accreditation, else have to be closed
- Voluntary EUR-ACE Accreditation
  - Provided by QUACING the Italian agency accredited by ENAEE (European Network for Accreditation of Engineering Education - https://www.enaee.eu/)
- EUR-ACE accreditation according to QUACING includes the requisites of ANVUR but has some specific requirements

Standards and Guidelines for Accreditation of Engineering Programmes

Co-funded by the Erasmus+ Programme of the European Union

- Student Workload Requirements
  - 90 to 120 ECTS for Master
- Programme Outcomes
  - Declined for bachelor and master
  - The Programme Outcomes are described here separately for both Bachelor and Master Degree programmes with reference to the following eight learning areas:

• Knowledge and understanding;	• Knowledge and understanding
• Engineering Analysis; • Engineering Design;	• Applying knowledge and understanding
• Engineering Practice; • Making Judgements;	• Making judgements
• Communication and Team-working;	• Communication
• Investigations; • Lifelong Learning.	• Lifelong learning skills

- Programme Management

Standards and Guidelines for Accreditation of Engineering Programmes: Programme Management

Co-funded by the Erasmus+ Programme of the European Union

Engineering degree programmes, for which an HEI seeks accreditation should demonstrate to:

- achieve the programme aims;
- provide a teaching and learning process that enables students to demonstrate achievement of Programme Outcomes;
- provide adequate resources;
- monitor the rules for student admission, transfer, progression and graduation;
- comply with internal quality assurance procedures.

Standards and Guidelines for Accreditation of Engineering Programmes: Programme Management

Co-funded by the Erasmus+ Programme of the European Union

Programme aims

- The aims of accredited programmes must reflect the needs of employers and other stakeholders. The programme outcomes must be demonstrably consistent with the aims.
- The aims should take into account employment opportunities for graduates, potential developments in technology, the needs of employers, the wide range of applications of engineering, postgraduate opportunities for graduates, the mission of the university and the interests of students.

Standards and Guidelines for Accreditation of Engineering Programmes: Programme Management

Co-funded by the Erasmus+ Programme of the European Union

Teaching and Learning Process:

- enable engineering graduates to demonstrate the knowledge, understanding, skills and abilities specified in the Programme Outcomes (the programme curriculum must specify how this is to be achieved)
- be sufficiently flexible to accommodate different entry qualifications of students and different learning styles (if the programme includes time spent in industry or in another HEI, it should be assessed in the context of its contribution to the achievement of the Programme Outcomes)

Standards and Guidelines for Accreditation of Engineering Programmes: Programme Management

Co-funded by the Erasmus+ Programme of the European Union

Teaching and Learning Process:

- The curriculum should give comprehensive information on all the modules in the degree programme, including the syllabus, the module learning outcomes, the methodology of teaching and learning, credit allocation, the method of module assessment, and any pre-requisite or co-requisite modules or other programme requirements.
- The curriculum should ensure that the module learning outcomes aggregate to the programme learning outcomes, including the effect of student choice of modules.

Standards and Guidelines for Accreditation of Engineering Programmes: Programme Management

Co-funded by the Erasmus+ Programme of the European Union

Teaching and Learning Process:

- The assessment of students should evaluate achievement of the specified module learning outcomes, and be both rigorous and fair. Wherever possible there should be the second marking of student work or moderation of assessments.
- Students should have an opportunity to redeem work that is assessed as being below standard, provided this can be done without compromising output standards.
- Independent and external scrutiny of the assessment of students, and of the decisions on progress and completion, are effective in ensuring that output standards are maintained.
- The arrangements for any such scrutiny should be documented.

Standards and Guidelines for Accreditation of Engineering Programmes: Programme Management

Co-funded by the Erasmus+ Programme of the European Union

Resources:

- The resources to deliver the programme must be sufficient to enable the students to demonstrate the knowledge, understanding, skills and abilities specified in the Programme Outcomes.
- The number, qualifications and experience of the teaching staff should be adequate to teach the programme to the standard specified in the Programme Outcomes. The programme should be supported by an effective team of technical and administrative staff. There should be arrangements in place for ensuring that staff are updated to use and apply new technologies and receive training as and when required.
- The laboratory, computing and workshop facilities should have the equipment necessary to support the programme; the arrangements for safe access by students should ensure appropriate opportunities for student practical activities, particularly to support project work.
- Student support services, including but not limited to, tutoring, library and other information resources, assistance with external placements, should be readily accessible by students.
- The resources necessary to deliver the programme should be supported by an adequate budget.

Standards and Guidelines for Accreditation of Engineering Programmes: Programme Management

Co-funded by the Erasmus+ Programme of the European Union

Student admission, transfer, progression and graduation:

- The criteria for student admission, transfer, progression and graduation must be clearly specified and published, and the results monitored.
- Students should be informed of the qualifications necessary to enter the programme and of the regulations necessary to progress to completion. The criteria for students to transfer into later stages of the programme should be clearly specified.
- Records of student achievement provide essential information for the review and development of programmes. There should be arrangements for monitoring the progress of students through the programme against their entry qualifications, so as to provide essential data for reviewing entry to the programme. In particular the number of, and reasons for, non-completions should be recorded. The overall performance of students in individual modules should be noted in order to identify assessment results that are significantly different from the norm.

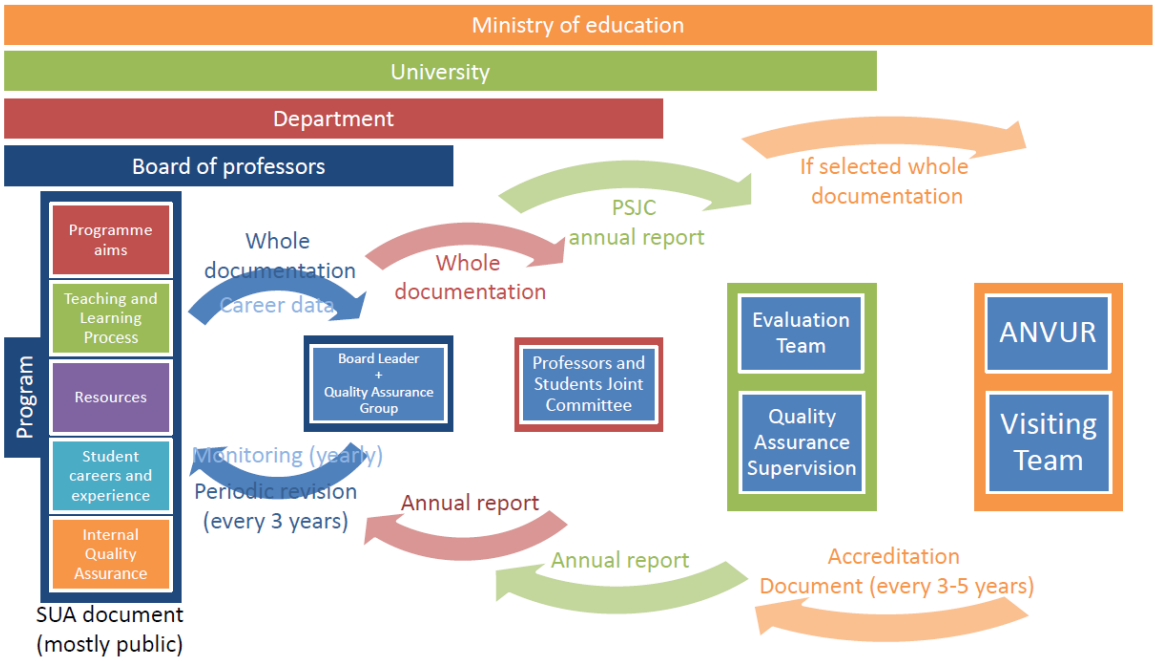
Standards and Guidelines for Accreditation of Engineering Programmes: Programme Management

Co-funded by the Erasmus+ Programme of the European Union

Internal Quality Assurance:

- Accredited engineering degree programmes must be supported by effective quality assurance policies and procedures.
- The programme should have quality assurance procedures that are consistent with the HEI quality assurance policy. It would be expected that there is a defined and documented procedure for reviewing the programme at regular intervals using all relevant data, including an evaluation of student achievement against the stated programme aims.
- Feedback should be obtained in an agreed format from the students on an accredited programme on all taught modules in the programme, to enable the effectiveness of each module to be evaluated. There should be clearly understood arrangements for the day to day management of the programme to resolve any urgent and immediate problems.

Course revision process



Student experience: supporting documents

Co-funded by the Erasmus+ Programme of the European Union

- Documentation available for the programme rules and the courses https://corsi.unisa.it/06228/en/teaching/course-units
- Timetables of lectures
- Timetable of examinations
- The quality of the teachers
- Results of the internal verification on:
  - the adequateness of examinations based on the collection of tests and questions
  - the adequateness of rooms, laboratories, computing rooms end Libraries http://corsi.unisa.it/ingegneria-alimentare/strutture
  - the adequateness of the services available for student mentoring (incoming, studying, international experience, placement)
  - https://corsi.unisa.it/06228/attivita-e-servizi/orientamento-in-ingresso
- Students opinion on courses, examinations and services (centralized University service with compulsory on line questionnaire)
  http://corsi.unisa.it/ingegneria-alimentare/didattica/valutazione-della-didattica
- Ex-Alumni opinions on programme (national service from Alma Laurea, a spin-off of the University of Bologna https://www2.almalaurea.it/cgi-php/universita/statistiche/stamp.php?annoprofilo=2019&annooccupazione=2018&codicione=065010730230 0001&corsclasse=11027&aggrega=SI&confronta=classe&stella2015=&sua=1#profilo

Student careers: supporting documents

Co-funded by the Erasmus+ Programme of the European Union

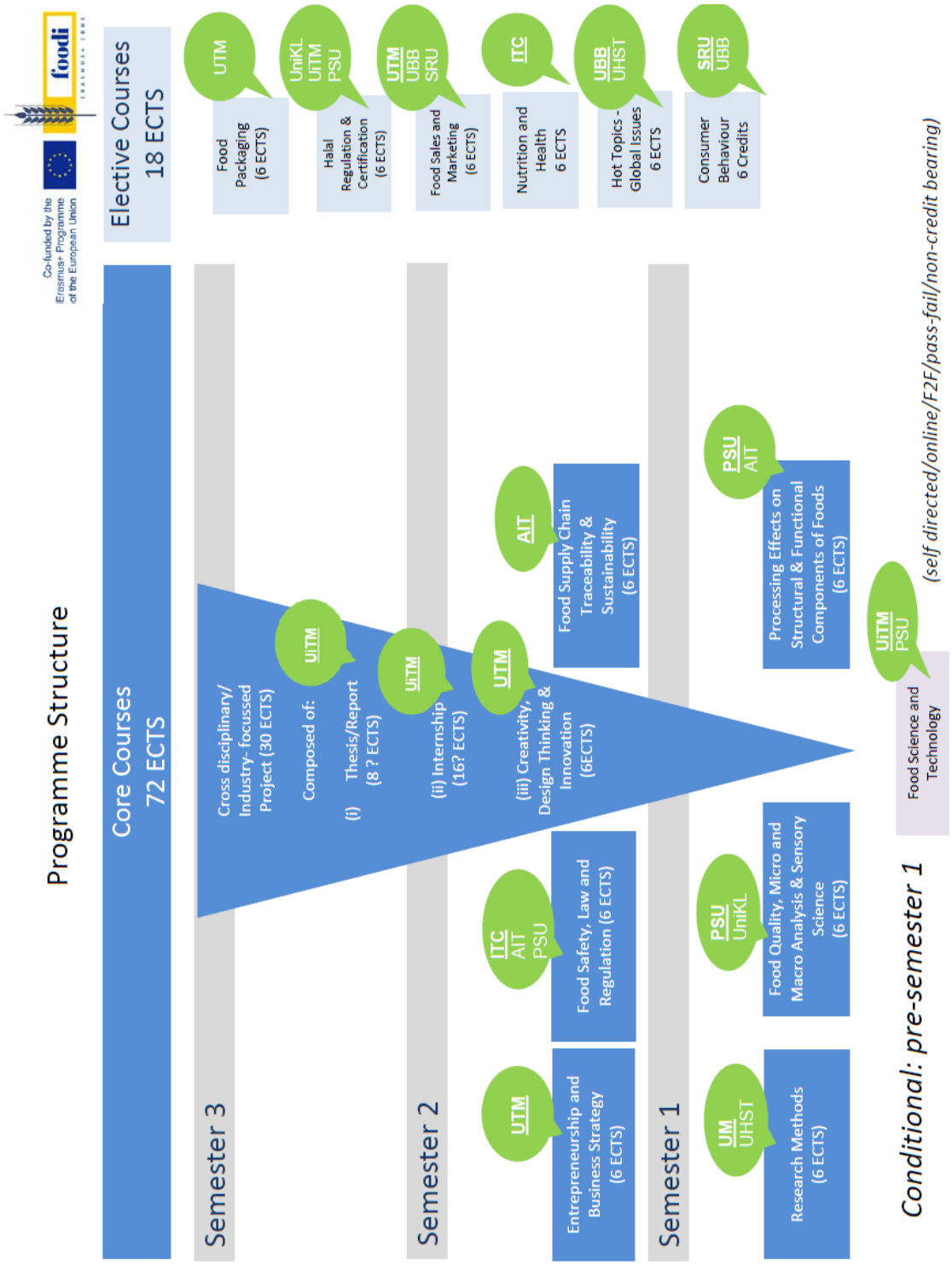
- Statistics on careers providing information on:
  - The number of credits and marks gained by the students
  - The time necessary for graduation
  - The number of students dropping off
  - …http://corsi.unisa.it/ingegneria-alimentare/statistiche
- External effectiveness: Ex-Alumni information on the ability of the acquired degree to find a job, on their remuneration, on the effectiveness of the programme to provide the right tools in their present position (national service from Alma Laurea, a spin-off of the University of Bologna).
- Opinions of employers hosting training of students or fresh graduates

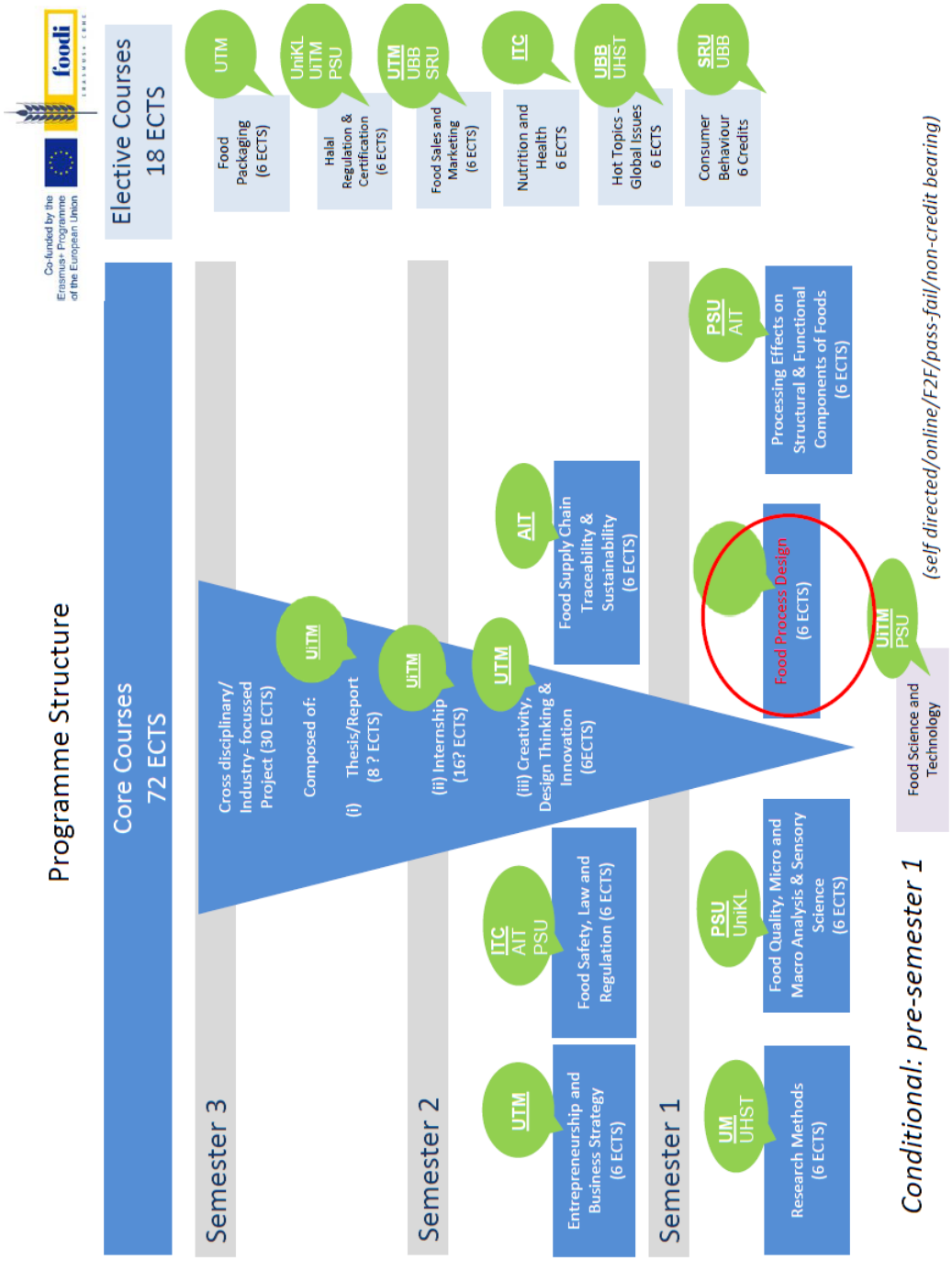
Internal quality assurance

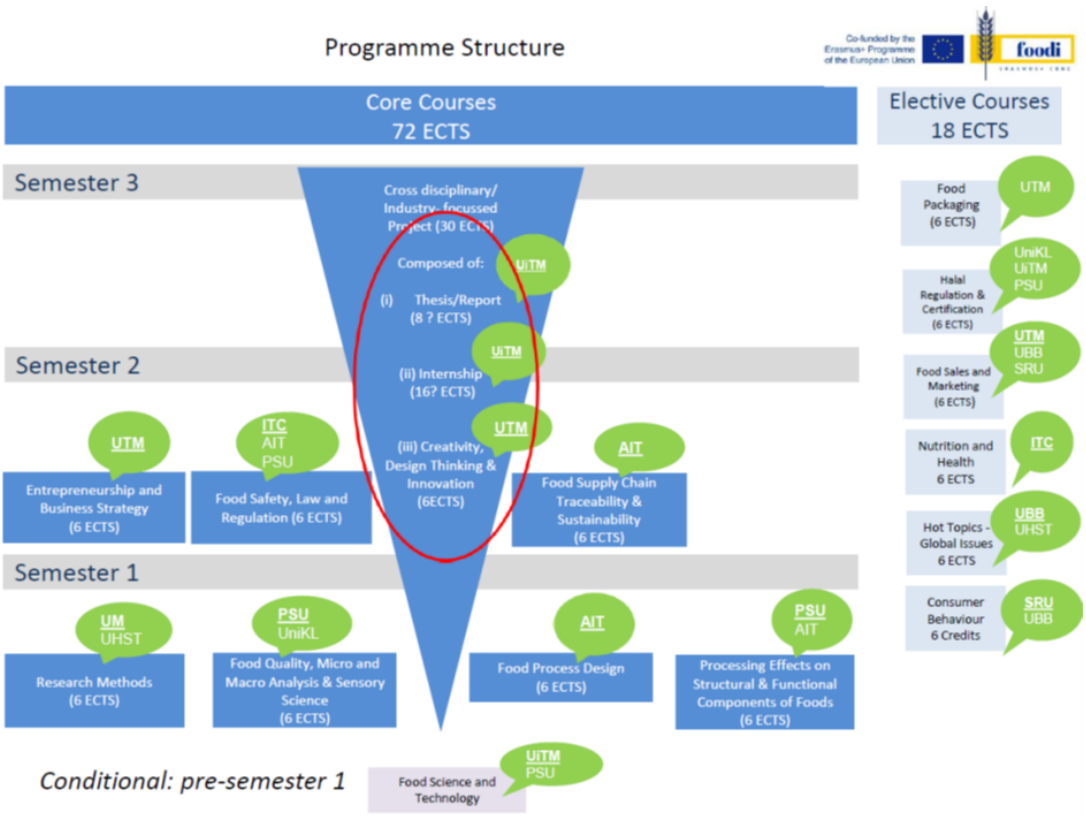
Co-funded by the Erasmus+ Programme of the European Union

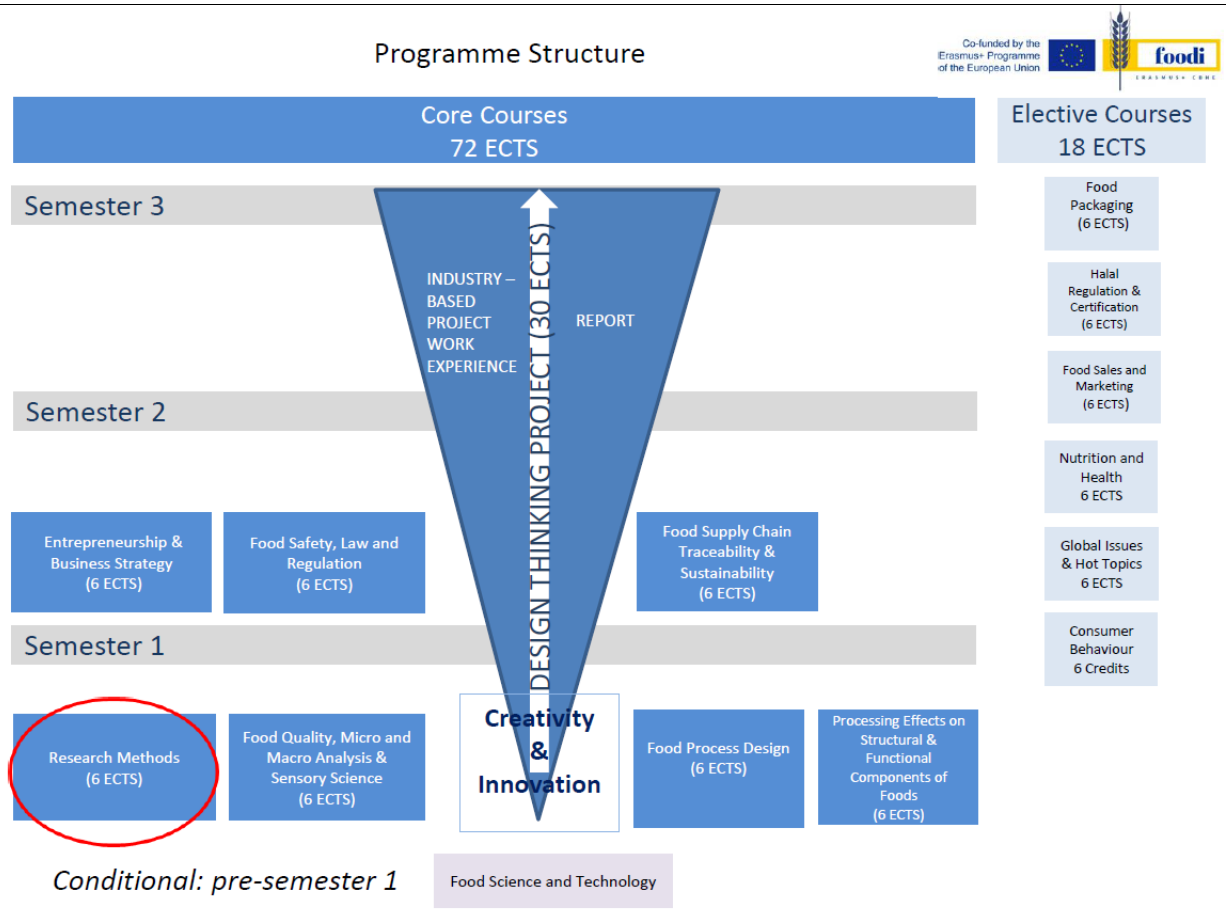
- Structure of the quality assurance organization at the University level
- Structure of the quality assurance organization at the program level. Table including:
  - Name of the role or committee
  - Duties
  - Documents produced
  - Persons involved
  - Responsible person
- Operative documents describing the most important processes related to:
  - Educational programming
  - Mentoring (incoming, ongoing)
  - Monitoring and analysis
  - Mentoring towards employment
- Documents on periodic revision and PSJC annual review

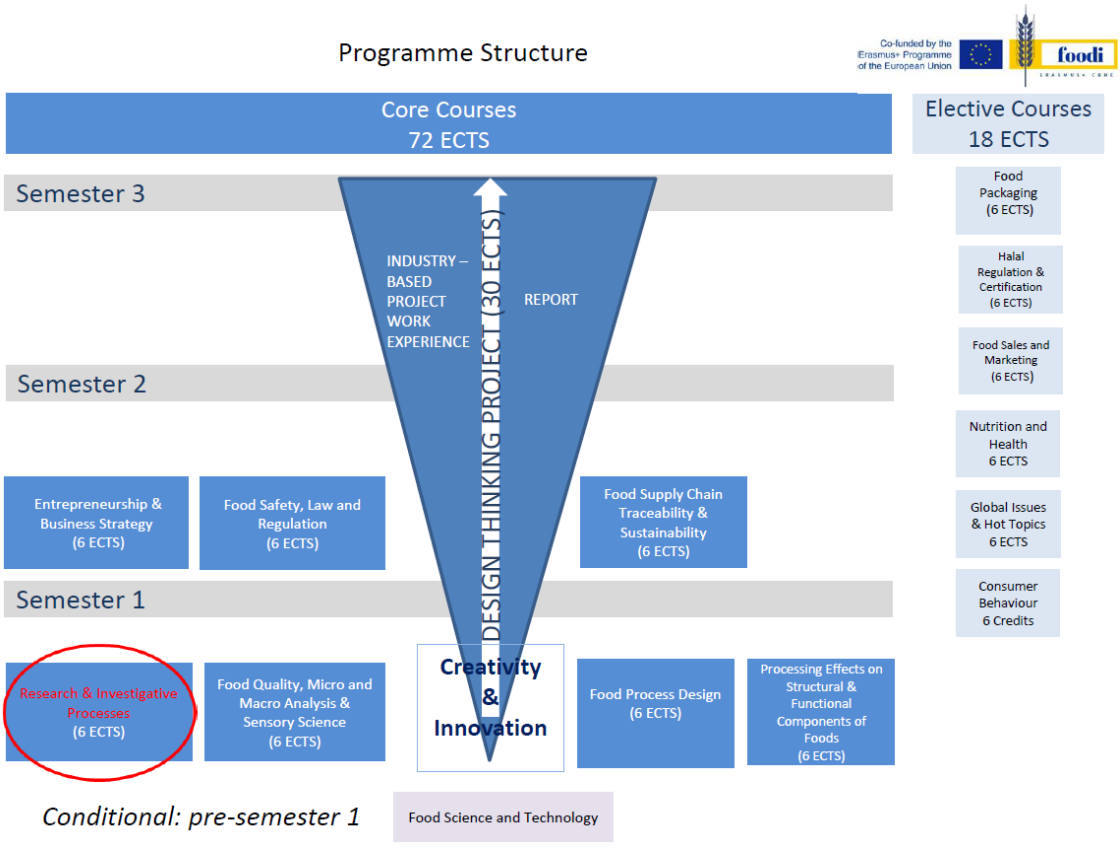
3 APPENDIX II. FOODI MSc Programme consolidation, refinement, course descriptor development and post-UNISA study visit steps (Professor Frank Monahan, UCD) (the following slides were shown to indicate the modifications to the programme structure that occurred between the Dublin and Salerno meetings)




Programme Structure
Co-funded by the Erasmus+ Programme of the European Union
Core Courses 72 ECTS
Elective Courses 18 ECTS
Semester 3
Semester 2
Semester 1
Cross disciplinary/ Industry- focussed Project (30 ECTS)
Composed of:
(i) Thesis/Report (8 ? ECTS)
(ii) Internship (16? ECTS)
(iii) Creativity, Design Thinking & Innovation (6ECTS)
Entrepreneurship and Business Strategy (6 ECTS)
Food Safety, Law and Regulation (6 ECTS)
Food Supply Chain Traceability & Sustainability (6 ECTS)
Research Methods (6 ECTS)
Food Quality, Micro and Macro Analysis & Sensory Science (6 ECTS)
Food Process Design (6 ECTS)
Processing Effects on Structural & Functional Components of Foods (6 ECTS)
Food Science and Technology
Food Packaging (6 ECTS)
Halal Regulation & Certification (6 ECTS)
Food Sales and Marketing (6 ECTS)
Nutrition and Health 6 ECTS
Hot Topics - Global Issues 6 ECTS
Consumer Behaviour 6 Credits
UTM
UniKL UiTM PSU
UTM UBB SRU
ITC
UBB UHST
SRU UBB
ITC AIT PSU
PSU UniKL
UM UHST
AIT
PSU AIT
UiTM PSU
Conditional: pre-semester 1
(self directed/online/F2F/pass-fail/non-credit bearing)


Programme Structure
Co-funded by the Erasmus+ Programme of the European Union
foodi
Core Courses
72 ECTS
Elective Courses
18 ECTS
Semester 3
Cross disciplinary/ Industry- focussed Project (30 ECTS)
Composed of:
UiTM
(i) Thesis/Report (8 ? ECTS)
Semester 2
UiTM
(ii) Internship (16? ECTS)
UTM
(iii) Creativity, Design Thinking & Innovation (6ECTS)
UTM
Entrepreneurship and Business Strategy (6 ECTS)
ITC
AIT
PSU
Food Safety, Law and Regulation (6 ECTS)
AIT
Food Supply Chain Traceability & Sustainability (6 ECTS)
Semester 1
UM
UHST
Research Methods (6 ECTS)
PSU
UniKL
Food Quality, Micro and Macro Analysis & Sensory Science (6 ECTS)
AIT
Food Process Design (6 ECTS)
PSU
AIT
Processing Effects on Structural & Functional Components of Foods (6 ECTS)
Conditional: pre-semester 1
UiTM
PSU
Food Science and Technology
Food Packaging (6 ECTS)
UTM
Halal Regulation & Certification (6 ECTS)
UniKL
UiTM
PSU
Food Sales and Marketing (6 ECTS)
UTM
UBB
SRU
Nutrition and Health 6 ECTS
ITC
Hot Topics - Global Issues 6 ECTS
UBB
UHST
Consumer Behaviour 6 Credits
SRU
UBB


Programme Structure
Co-funded by the Erasmus+ Programme of the European Union
foodi
Core Courses
72 ECTS
Elective Courses
18 ECTS
Semester 3
Semester 2
Semester 1
INDUSTRY – BASED PROJECT WORK EXPERIENCE
REPORT
DESIGN THINKING PROJECT (30 ECTS)
Entrepreneurship & Business Strategy (6 ECTS)
Food Safety, Law and Regulation (6 ECTS)
Food Supply Chain Traceability & Sustainability (6 ECTS)
Research Methods (6 ECTS)
Food Quality, Micro and Macro Analysis & Sensory Science (6 ECTS)
Creativity & Innovation
Food Process Design (6 ECTS)
Processing Effects on Structural & Functional Components of Foods (6 ECTS)
Food Packaging (6 ECTS)
Halal Regulation & Certification (6 ECTS)
Food Sales and Marketing (6 ECTS)
Nutrition and Health 6 ECTS
Global Issues & Hot Topics 6 ECTS
Consumer Behaviour 6 Credits
Conditional: pre-semester 1
Food Science and Technology


Programme Structure
Co-funded by the Erasmus+ Programme of the European Union
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Semester 1
INDUSTRY – BASED PROJECT WORK EXPERIENCE
REPORT
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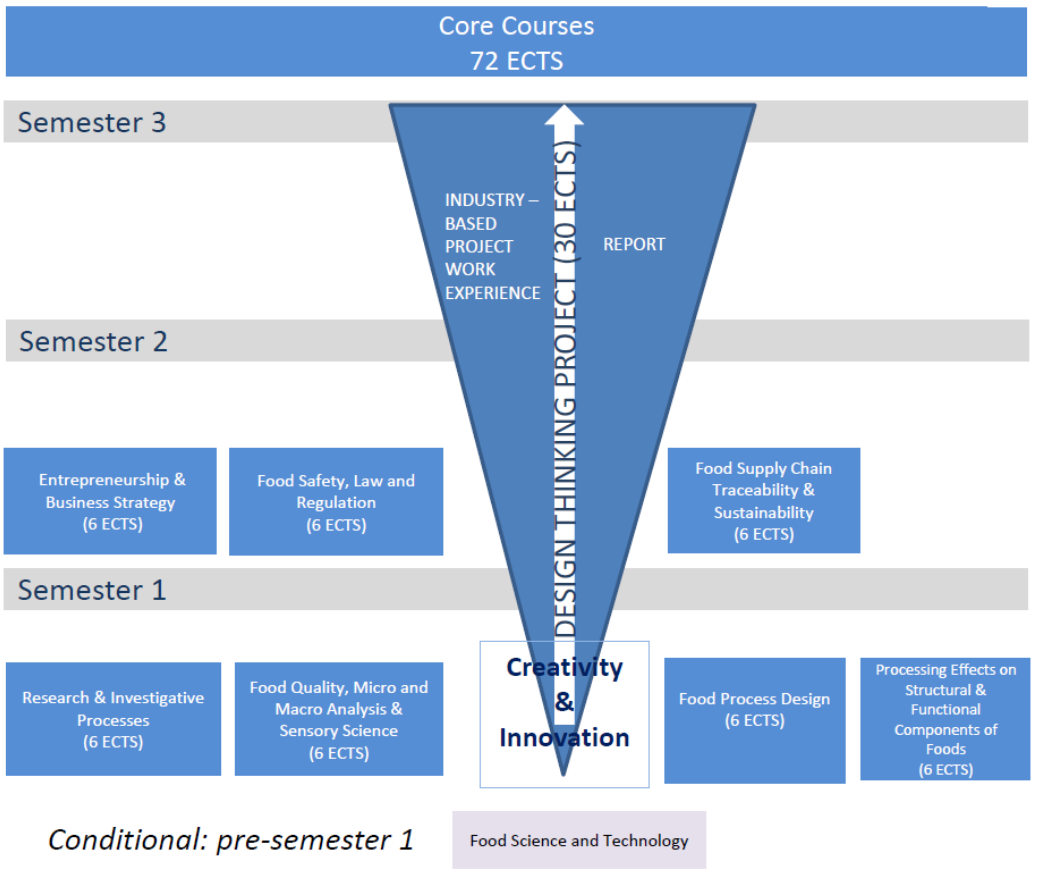
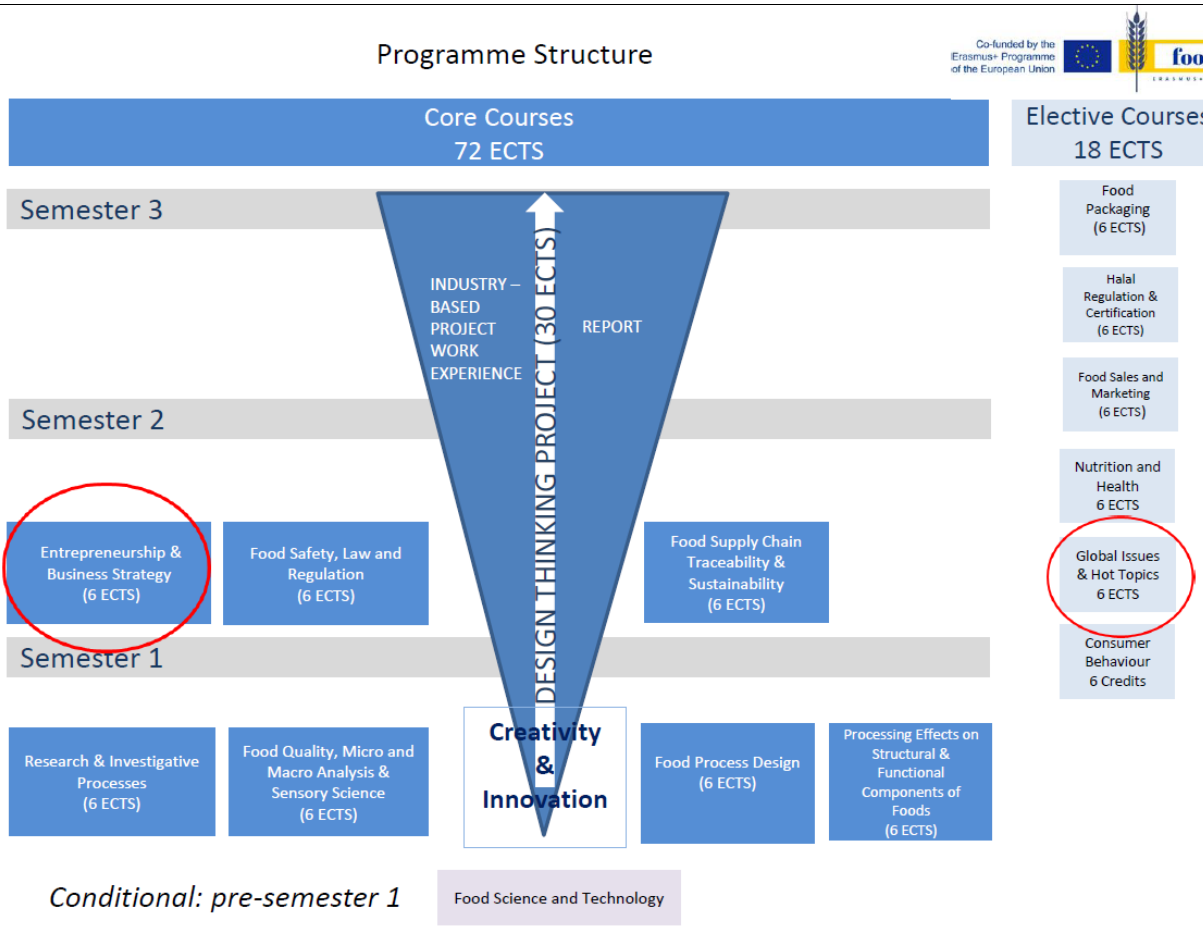
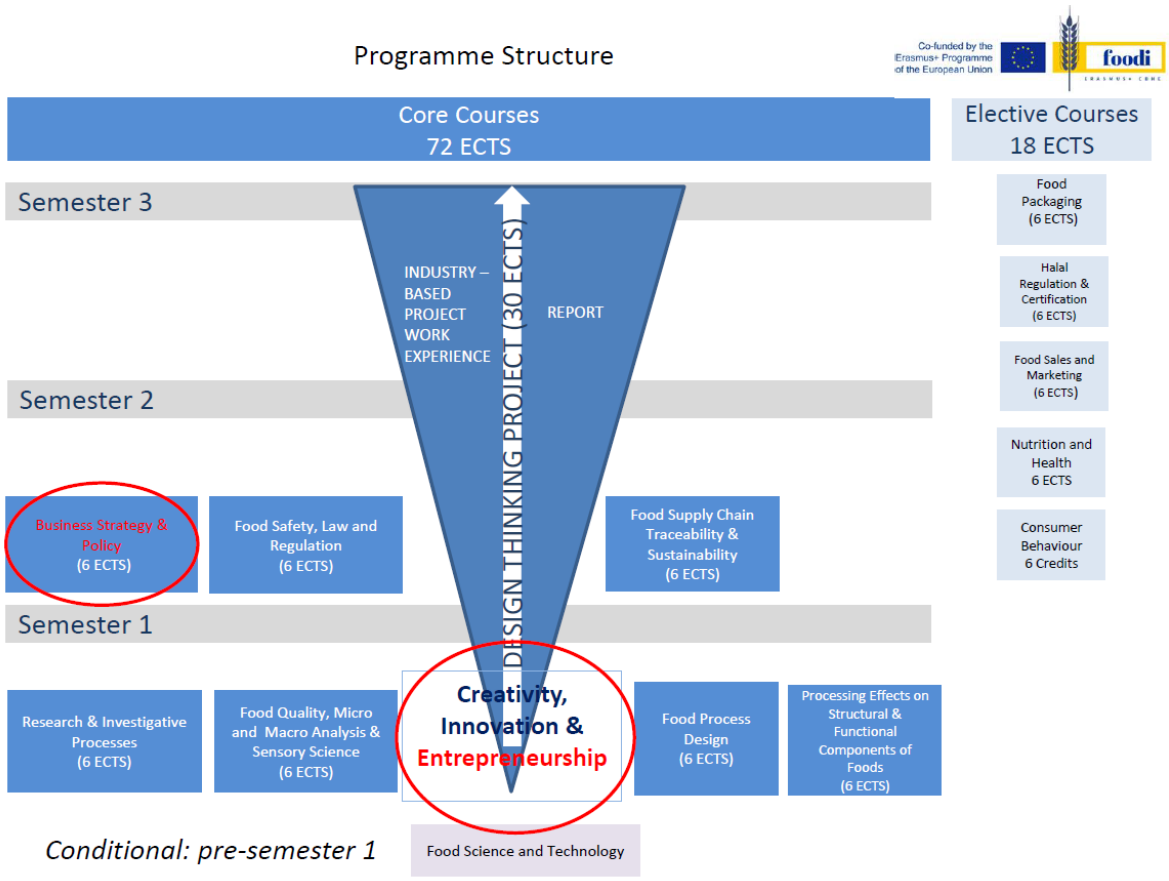
Food Quality, Micro and Macro Analysis & Sensory Science (6 ECTS)
Creativity & Innovation
Food Process Design (6 ECTS)
Processing Effects on Structural & Functional Components of Foods (6 ECTS)
Food Packaging (6 ECTS)
Halal Regulation & Certification (6 ECTS)
Food Sales and Marketing (6 ECTS)
Nutrition and Health 6 ECTS
Global Issues & Hot Topics 6 ECTS
Consumer Behaviour 6 Credits
Conditional: pre-semester 1
Food Science and Technology

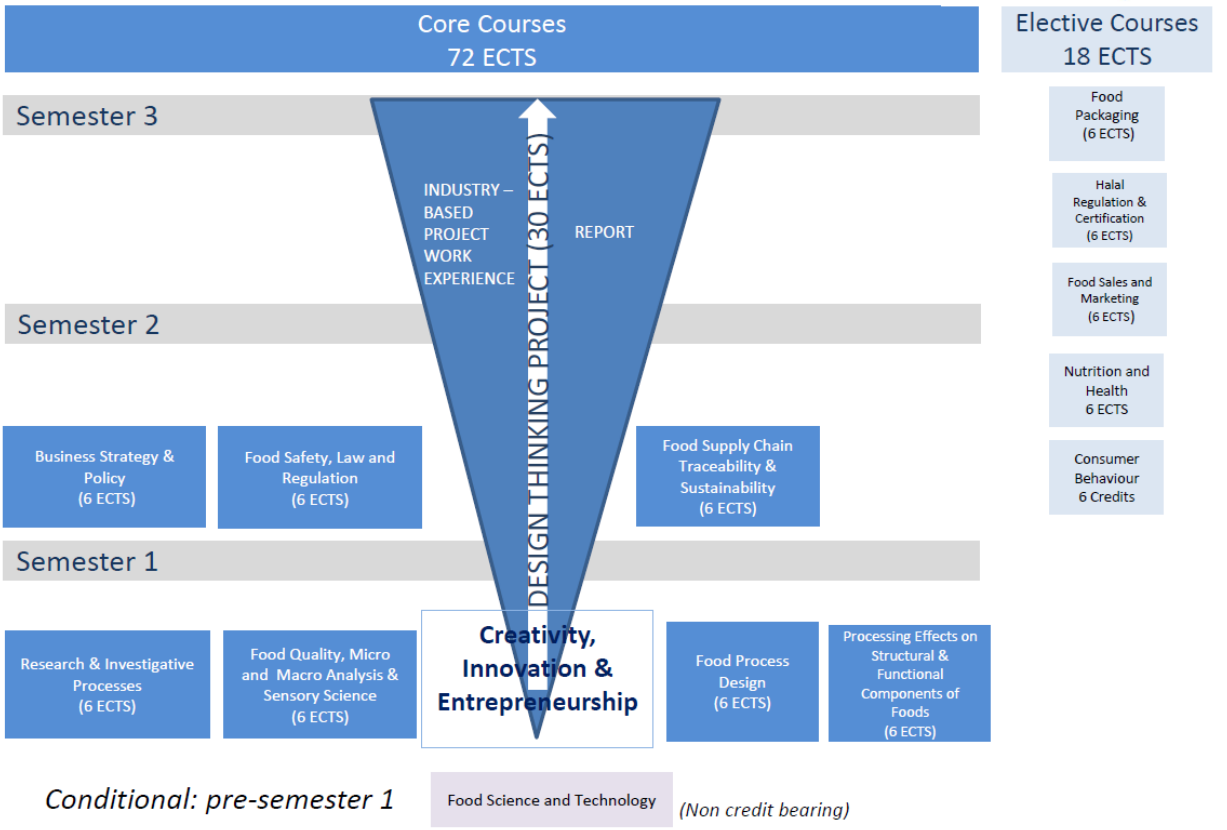
Programme Structure




Programme Structure
Co-funded by the Erasmus+ Programme of the European Union
foodi
Core Courses
72 ECTS
Elective Courses
18 ECTS
Semester 3
Semester 2
Semester 1
INDUSTRY – BASED PROJECT WORK EXPERIENCE
REPORT
DESIGN THINKING PROJECT (30 ECTS)
Entrepreneurship & Business Strategy (6 ECTS)
Food Safety, Law and Regulation (6 ECTS)
Food Supply Chain Traceability & Sustainability (6 ECTS)
Research & Investigative Processes (6 ECTS)
Food Quality, Micro and Macro Analysis & Sensory Science (6 ECTS)
Creativity & Innovation
Food Process Design (6 ECTS)
Processing Effects on Structural & Functional Components of Foods (6 ECTS)
Food Packaging (6 ECTS)
Halal Regulation & Certification (6 ECTS)
Food Sales and Marketing (6 ECTS)
Nutrition and Health 6 ECTS
Global Issues & Hot Topics 6 ECTS
Consumer Behaviour 6 Credits
Conditional: pre-semester 1
Food Science and Technology


Programme Structure
Co-funded by the Erasmus+ Programme of the European Union
foodi
Core Courses
72 ECTS
Elective Courses
18 ECTS
Semester 3
Semester 2
Semester 1
INDUSTRY – BASED PROJECT WORK EXPERIENCE
REPORT
DESIGN THINKING PROJECT (30 ECTS)
Business Strategy & Policy (6 ECTS)
Food Safety, Law and Regulation (6 ECTS)
Food Supply Chain Traceability & Sustainability (6 ECTS)
Research & Investigative Processes (6 ECTS)
Food Quality, Micro and Macro Analysis & Sensory Science (6 ECTS)
Creativity, Innovation & Entrepreneurship
Food Process Design (6 ECTS)
Processing Effects on Structural & Functional Components of Foods (6 ECTS)
Food Packaging (6 ECTS)
Halal Regulation & Certification (6 ECTS)
Food Sales and Marketing (6 ECTS)
Nutrition and Health 6 ECTS
Consumer Behaviour 6 Credits
Conditional: pre-semester 1
Food Science and Technology

Programme Structure



Conditional: pre-semester 1 Food Science and Technology *(Non credit bearing)*

For D2.6 Teachers guide

For D2.5 FOODI course outlines

Programme Title	FOODI MSc in Food Processing and Innovation
Specialization	Food Processing & Health ☐ The Business of Food Processing ☐
Module Title:	
Module Code:	
Module Type:	Core ☐ Elective ☐
Module Coordinator:	
Credits:	ECTS Level: 9 Semester:
Module Places	

Module Description
.....
Learning Outcomes. On completion the candidate will be able to: 1. ..... 2. .....

Indicative Student Workload:	Indicative hours
Class Contact: Lectures	
Class Contact: Small Group Discussions or online	
Class Contact: Practical Workshops	
Specified learning activities	
Blended learning activities	
Autonomous student learning	
Total hours	

Assessment Strategies:	
Assessment Type	Proportion of Final Marks

For D2.4 Description of methodology and tools

Alignment of Learning Outc		
Learning Outcome	Teaching & Learning Activity	Feedback & Assessment
.....	.....	.....
.....	.....	.....

Resources
Recommended Textbook Resources
.....
Supplementary Textbook Resources
.....
Recommended Academic Journals and Peer-reviewed Articles
.....
Other Literature Resources
.....
Online and web-based Resources
.....
Material and equipment Resources
.....

Additional information
.....

For D2.6 Teachers guide

For D2.5 FOODI course outlines

Programme Title	FOODI MSc in Food Processing and Innovation			
Specialization	Food Processing & Health ☐	The Business of Food Processing ☐		
Module Title:				
Module Code:				
Module Type:	Core ☐	Elective ☐		
Module Coordinator:				
Credits:	ECTS	Level:	9	Semester:
Module Places				

Module Description
.....
Learning Outcomes. On completion the candidate will be able to: 1. ..... 2. .....

Indicative Student Workload:	Indicative hours
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Class Contact: Practical Workshops	
Specified learning activities	
Blended learning activities	
Autonomous student learning	
Total hours	

Assessment Strategies:	
Assessment Type	Proportion of Final Marks

For D2.4 Description of methodology and tools

Alignment of Learning Outc		
Learning Outcome	Teaching & Learning Activity	Feedback & Assessment
.....	.....	.....
.....	.....	.....

Resources
Recommended Textbook Resources
.....
Supplementary Textbook Resources
.....
Recommended Academic Journals and Peer-reviewed Articles
.....
Other Literature Resources
.....
Online and web-based Resources
.....
Material and equipment Resources
.....

Additional information
.....

Course Descriptor

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For D2.6 Teachers guide

For D2.5 FOODI course outlines

Programme Title	FOODI MSc in Food Processing and Innovation			
Course Title:				
Course Code:				
Course Type:	Core ☐ Elective ☐			
Course Coordinator:				
Credits:	ECTS	Level:	9	Semester:
Course Places				

Module Description

Course Learning Outcomes. On completion the candidate will be able to:	
1.	
2.	
3.	
4.	
5.	

Teaching & Learning Methodologies & Tools					
Methodology or Tool	Individual or Group Basis		Delivery		
	Individual	Group	Contact	Online	Blended
☐ Assignment (AS)	☐	☐	☐	☐	☐
☐ Business Case (BC)	☐	☐	☐	☐	☐
☐ Case Study (CS)	☐	☐	☐	☐	☐
☐ Critical Analysis (CN)	☐	☐	☐	☐	☐
☐ Critical Reflection (CR)	☐	☐	☐	☐	☐
☐ Data Analysis (DA)	☐	☐	☐	☐	☐
☐ Dissertation/Report (DR)	☐	☐	☐	☐	☐
☐ Laboratory (LB)	☐	☐	☐	☐	☐
☐ Lecture (LE)	☐	☐	☐	☐	☐
☐ Literature Review (LR)	☐	☐	☐	☐	☐
☐ Seminar (SR)	☐	☐	☐	☐	☐
☐ Tutorial (TU)	☐	☐	☐	☐	☐
☐ Workshop (WK)	☐	☐	☐	☐	☐
☐ Field Trip (FT)	☐	☐	☐	☐	☐

	Assessment Strategies:

	Assessment Type	Proportion of Final Marks
☐	Final Exam (FE)	
☐	Presentation (PR)	
☐	Portfolio (PO)	
☐	Multiple Choice Exam (MCQ)	
☐	Assignment (AS)	
☐	Design Project (DP)	
☐	Debate (DB)	

For D2.4 Description of methodology and tools

Alignment of Course Learning Outcome with Teaching & Learning Methodologies & Tools, Feedback & Assessment Strategies and Programme Outcomes				
No.	Course Learning Outcome	Teaching and Learning Methodology and Tools	Feedback & Assessment	Programme Outcome (# 1 – 8) (see attached)
1.				
2.				
3.				
4.				
5.				

Indicative Student Workload:	Indicative hours
Class Contact: Lectures	
Class Contact: Small Group Discussions or online	
Class Contact: Workshops	
Specified learning activities	
Blended learning activities	
Autonomous student learning	
Group-based learning	
…	
…	
Total hours	

Indicative Content		
Topic	Content	Content Sources/Resources (e.g. texts, web resources, journal articles, equipment resources)

FOODI: Erasmus+ KA2 Capacity Building in the field of Higher Education. Project No.: 598987-EPP-1-2018-1-NY-EPPKA2-CBHE-JP

Course Descriptor

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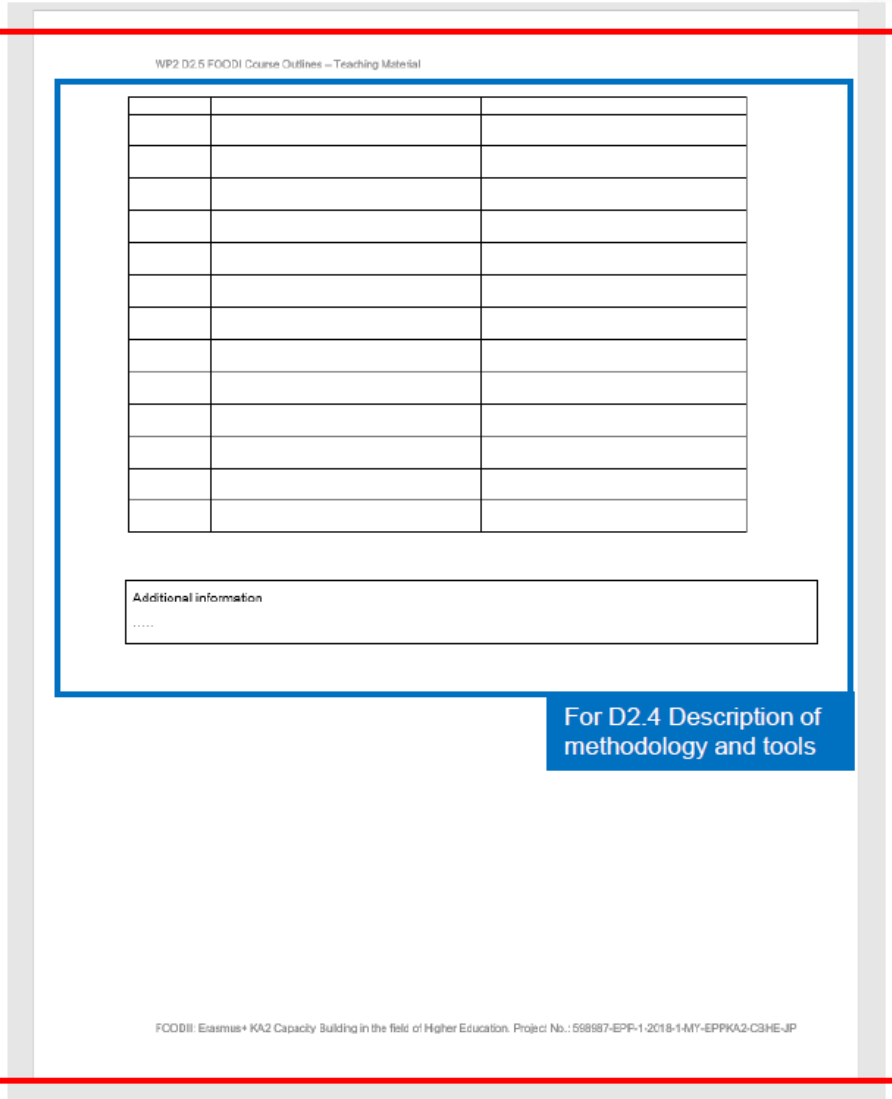
For D2.6 Teachers guide



WP2 D2.5 FOODI Course Outlines – Teaching Material

Additional information

.....

For D2.4 Description of methodology and tools

FOODIII: Erasmus+ KA2 Capacity Building in the field of Higher Education. Project No.: 598987-EPP-1-2018-1-MY-EPPKA2-CBHE-JP

Course Responsibilities

FOODI course code (tentative)	Course	# credits	Lead Asian partner	Lead Academic	Associated Asian Partners	Supporting European Partner	Received
FOODI Pre-req	Food Science & Technology	P/F	UiTM	Prof Margaret Chan Kit Yok	PSU	UCD	10/11/2019
FOODI Core 1	Research & Investigative Processes	6	UM	Prof Dr Ramesh T Subramanian	UHST	UNISA	18/10/2019
FOODI Core 2	Food Quality, Micro and Marco Analysis & Sensory Science	6	PSU	Prof Kongkarn Kijroongrojana	UniKL	UCD	07/11/2019
FOODI Core 3	Food Process Design	6	AIT	Dr Anil Kumar Anal		UNISA	07/11/2019
FOODI Core 4	Processing Effects on Structural & Functional Components of Foods	6	PSU	Prof Kongkarn Kijroongrojana	AIT	UNISA	
FOODI Core 5	Entrepreneurship & Business Strategy	6	UTM	Prof Rosmini Omar		UAegean	02/11/2019
FOODI Core 6	Food Safety, Law & Regulation	6	ITC	Dr Hasika Mith	AIT, PSU	UCD	
FOODI Core 7	Food Supply Chain, Traceability & Sustainability	6	AIT	Dr Anil Kumar Anal		UNISA	07/11/2019
FOODI Core 8-a	Thesis/Report	TBC	UiTM	Prof Margaret Chan Kit Yok		UCD/UAegean	10/11/2019
FOODI Core 8-b	Internship/Industry Based Project Work Experience	TBC	UiTM	Prof Margaret Chan Kit Yok		UCD/UAegean	10/11/2019
FOODI Core 8-c	Creativity, Design Thinking & Innovation	TBC	UTM	Prof Rosmini Omar		UCD/UAegean	02/11/2019
FOODI Elective 1	Food Packaging	6	UTM	Prof Rosmini Omar		UNISA	02/11/2019
FOODI Elective 2	Halal Regulation & Certification	6	UiniKL	Dr Noriza Ahmad	UiTM, PSU	UNISA	
FOODI Elective 3	Food Sales & Marketing	6	UTM	Prof Rosmini Omar	UBB, SRU	UAegean	02/11/2019
FOODI Elective 4	Nutrition & Health	6	ITC	Dr Hasika Mith		UCD	
FOODI Elective 5	Hot Topics /Global Issues	6	UBB	Dr Rany Sam	UHST	UAegean	09/11/2019
FOODI Elective 6	Consumer Behaviour	6	SRU	Dr Serey Mardy	UBB	UAegean	

General comments on course descriptors received…..

- Are they 6 ECTS courses: 6 ECTS = 150-180 hours
- Alignment of Learning Outcomes, Teaching & Learning activities, Feedback & Assessment, Programme outcomes [write the LOs and POS rather than using numbers (for ease of reading!)]
- No, or limited, resources (Textbooks, journal articles, websites, practical and laboratory facilities) in some course descriptions
- Make sure higher order verbs used – it is an MSc course
- List the transferable skills developed

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Aims this week re: curriculum

1. Agreement where we are so far
2. Discussion & Agreement of Project 30ECTS
3. Delivery of Entrepreneurship
4. Agreement on electives?
5. Develop course outlines collaboratively
   - Everyone to attend a session on a course (even if not assigned on the agenda)
   - Mapping tool

4 APPENDIX III. Commentary and guidance on completion of Course Descriptor template documentation.

To-day / Tomorrow

- Complete all Sections of the course descriptor
- Section G ….. this where the content development begins!
  - Detailed list of the sources of material per topic for the courses, text books, journal articles, web resources, powerpoint slide decks ……
- Develop a Course Gantt …. what will happen each week over the course of the semester

Deliverables

(i) Fully completed detailed course descriptor

(ii) Present the outcome in powerpoint in plenary - tbc

A	B	C	D	E	F	G	H
FOODI course code (tentative)	Course	# credits	Lead Asian partner	Lead Academic	Associated Asian Partners	Supporting European Partner	Received
FOODI Pre-req	Food Science & Technology	P/F	UiTM	Prof Margaret Chan Kit Yok	PSU	UCD	10/11/2019
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FOODI Core 3	Food Process Design	6	AIT	Dr Anil Kumar Anal		UNISA	07/11/2019
FOODI Core 4	Processing Effects on Structural & Functional Components of Foods	6	PSU	Prof Kongkarn Kijroongrojana	AIT	UNISA	12/11/2019
FOODI Core 5	Entrepreneurship & Business Strategy	6	UTM	Prof Rosmini Omar		UAegean	02/11/2019
FOODI Core 6	Food Safety, Law & Regulation	6	ITC	Dr Hasika Mith	AIT, PSU	UCD	11/11/2019
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FOODI Core 8-a	Thesis/Report	TBC	UiTM	Prof Margaret Chan Kit Yok		UCD/UAegean	10/11/2019
FOODI Core 8-b	Internship/Industry Based Project Work Experience	TBC	UiTM	Prof Margaret Chan Kit Yok		UCD/UAegean	10/11/2019
FOODI Core 8-c	Creativity, Design Thinking & Innovation	TBC	UTM	Prof Rosmini Omar		UCD/UAegean	02/11/2019
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FOODI Elective 4	Nutrition & Health	6	ITC	Dr Hasika Mith		UCD	11/11/2019
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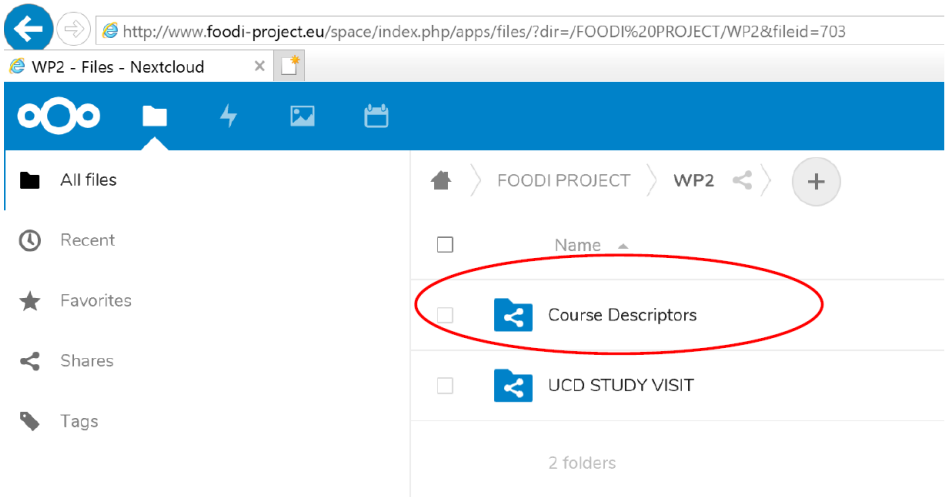
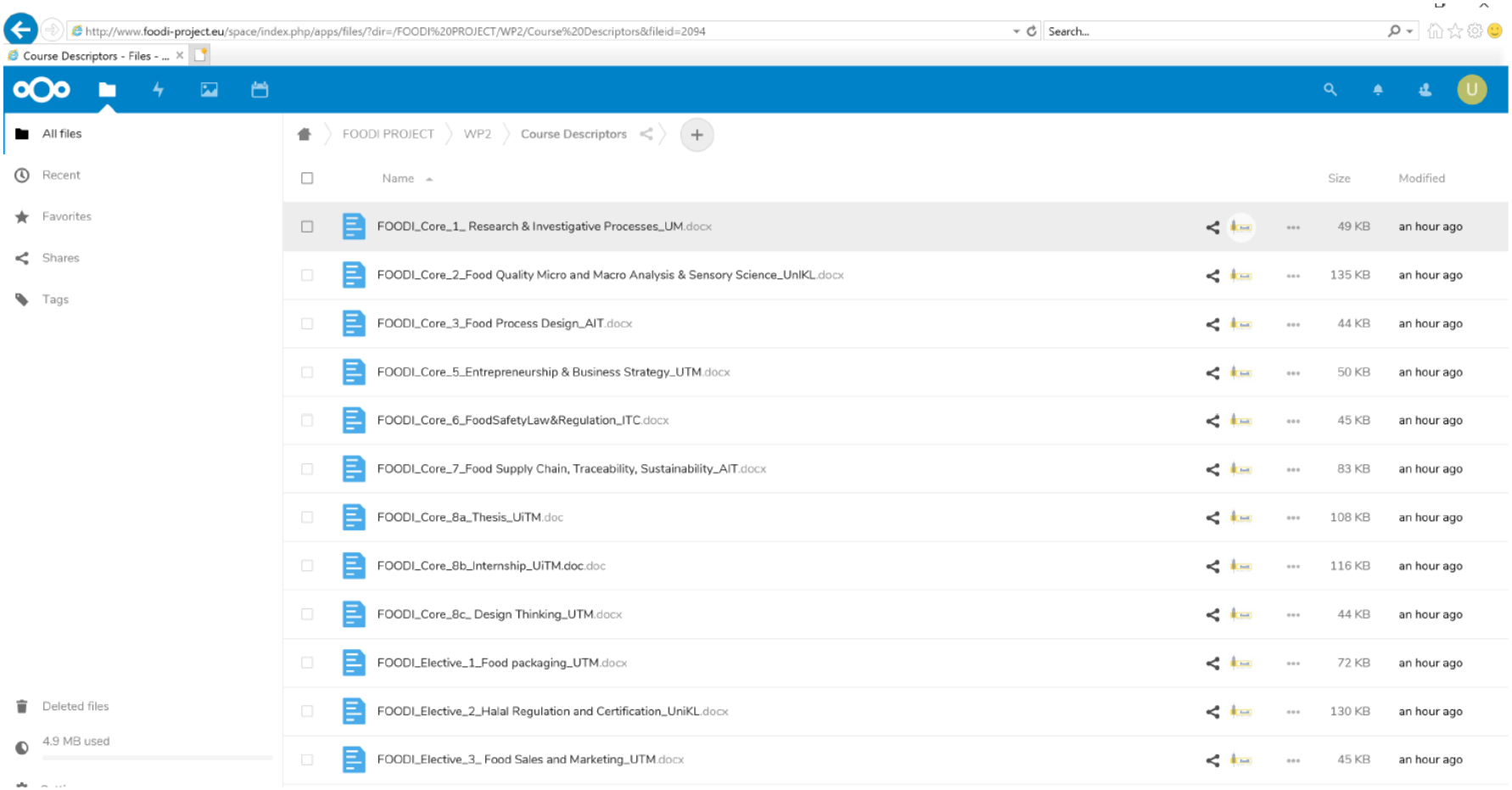



http://www.foodi-project.eu/space/index.php/apps/files/?dir=/FOODI%20PROJECT/WP2/Course%20Descriptors&fileid=2094
Search...
Course Descriptors - Files - ...
All files
Recent
Favorites
Shares
Tags
Deleted files
4.9 MB used
FOODI PROJECT
WP2
Course Descriptors
Name
Size
Modified
FOODI_Core_1_ Research & Investigative Processes_UM.docx 49 KB an hour ago
FOODI_Core_2_Food Quality Micro and Macro Analysis & Sensory Science_UniKL.docx 135 KB an hour ago
FOODI_Core_3_Food Process Design_AIT.docx 44 KB an hour ago
FOODI_Core_5_Entrepreneurship & Business Strategy_UTM.docx 50 KB an hour ago
FOODI_Core_6_FoodSafetyLaw&Regulation_ITC.docx 45 KB an hour ago
FOODI_Core_7_Food Supply Chain, Traceability, Sustainability_AIT.docx 83 KB an hour ago
FOODI_Core_8a_Thesis_UiTM.doc 108 KB an hour ago
FOODI_Core_8b_Internship_UiTM.doc.doc 116 KB an hour ago
FOODI_Core_8c_ Design Thinking_UTM.docx 44 KB an hour ago
FOODI_Elective_1_Food packaging_UTM.docx 72 KB an hour ago
FOODI_Elective_2_Halal Regulation and Certification_UniKL.docx 130 KB an hour ago
FOODI_Elective_3_ Food Sales and Marketing_UTM.docx 45 KB an hour ago

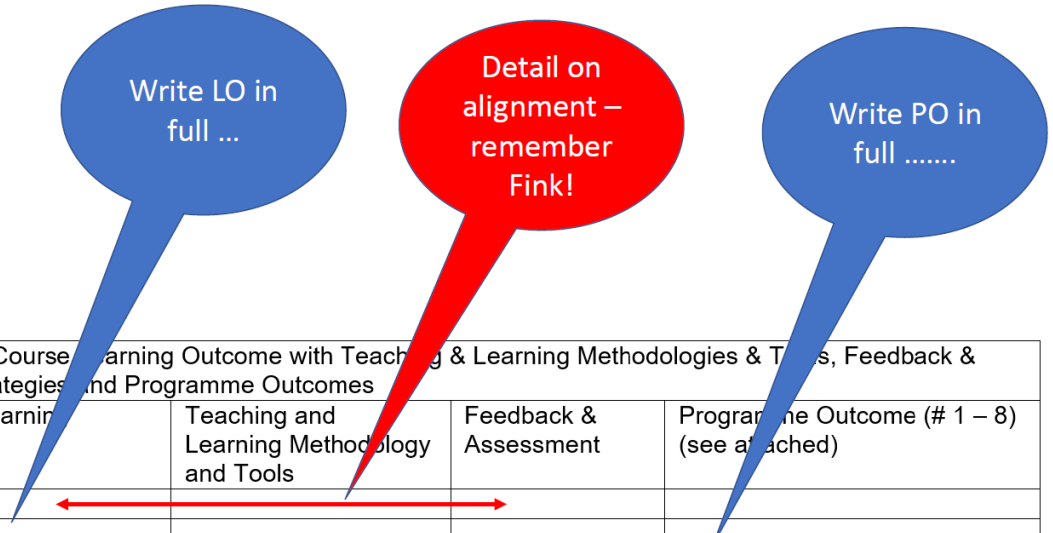
Programme Title	FOODI MSc in Food Processing and Innovation			
Course Title:				
Course Code:				
Course Type:	Core ☐ Elective ☐			
Course Coordinator:				
Credits:	ECTS	Level:	9	Semester:
Course Places				

A. Module Description

B. Course Learning Outcomes. On completion the candidate will be able to:	
1.	
2.	
3.	
4.	
5.	
Transferable Skills	

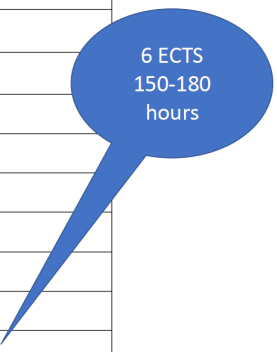
C. Teaching & Learning Methodologies & Tools					
Methodology or Tool	Individual or Group Basis		Delivery		
	Individual	Group	Contact	Online	Blended
☐ Assignment (AS)	☐	☐	☐	☐	☐
☐ Business Case (BC)	☐	☐	☐	☐	☐
☐ Case Study (CS)	☐	☐	☐	☐	☐
☐ Critical Analysis (CN)	☐	☐	☐	☐	☐
☐ Critical Reflection (CR)	☐	☐	☐	☐	☐
☐ Data Analysis (DA)	☐	☐	☐	☐	☐
☐ Dissertation/Report (DR)	☐	☐	☐	☐	☐
☐ Laboratory (LB)	☐	☐	☐	☐	☐
☐ Lecture (LE)	☐	☐	☐	☐	☐
☐ Literature Review (LR)	☐	☐	☐	☐	☐
☐ Seminar (SR)	☐	☐	☐	☐	☐
☐ Tutorial (TU)	☐	☐	☐	☐	☐
☐ Workshop (WK)	☐	☐	☐	☐	☐
☐ Field Trip (FT)	☐	☐	☐	☐	☐

D. Assessment Strategies:		
	Assessment Type	Proportion of Final Marks
☐	Final Exam (FEX)	
☐	Presentation (PRS)	
☐	Portfolio (PTO)	
☐	Multiple Choice Exam (MCQ)	
☐	Assignment (ASM)	
☐	Design Project (DPR)	
☐	Debate (DEB)	



E. Alignment of Course Learning Outcome with Teaching & Learning Methodologies & Tools, Feedback & Assessment Strategies and Programme Outcomes				
No.	Course Learning Outcome	Teaching and Learning Methodology and Tools	Feedback & Assessment	Programme Outcome (# 1 – 8) (see attached)
1.				
2.				
3.				
4.				
5.				

F. Indicative Student Workload:	Indicative hours
Class Contact: Lectures	
Class Contact: Small Group Discussions or online	
Class Contact: Workshops	
Specified learning activities	
Blended learning activities	
Autonomous student learning	
Group-based learning	
…	
…	
Total hours	



G. Indicative Content		
Topic	Content	Content Sources/Reso… web resources, jou… equipment resou…

Description

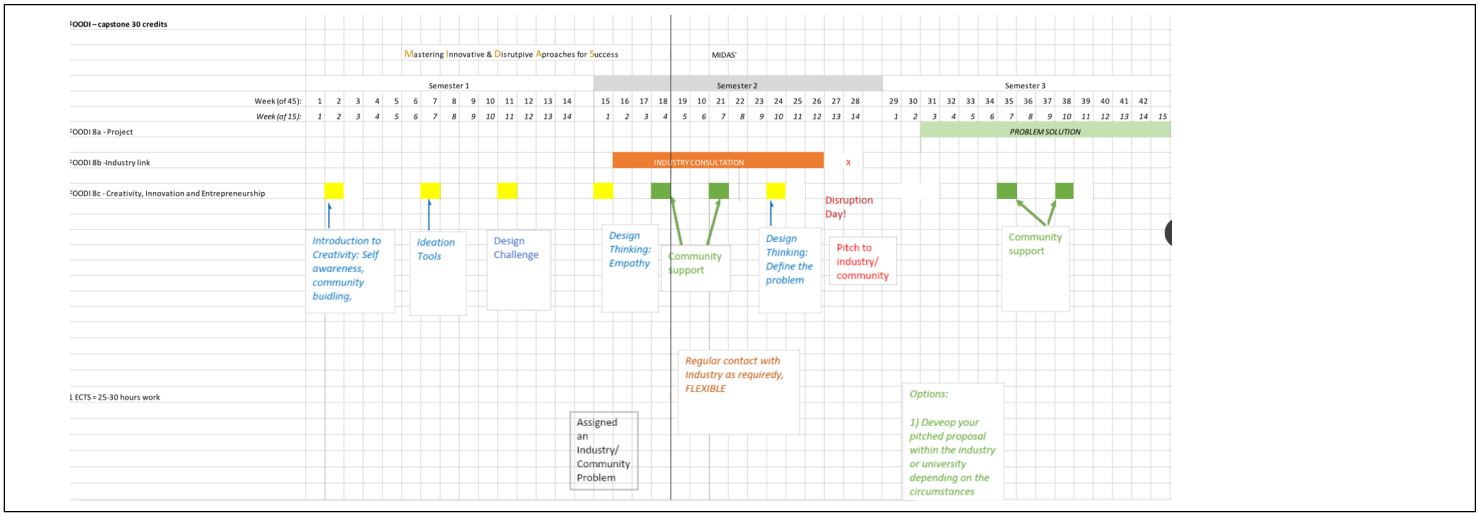
Include source material per topic

Detailed list of the sources of material per topic for the courses, text books, journal articles, web resources, powerpoint slide decks .....

Course Gantt (excel)

Week	Topic	T&L Method/Activity	Feedback & Assessment
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

The structure, scope and sequence that was drafted for the FOODI Core Project is outlined below. The title agreed upon was the acronym MIDAS -Mastering Innovative & Disruptive Approaches for Success, covering 3 semesters.



5 APPENDIX IV. Previous EU-ASEAN ERASMUS+ Collaborations - ASIFOOD and SIMPLE (Support of International Platforms Merging Labour and Education)

ASIFOOD
Universities as key partners for the new challenges regarding food safety & quality in ASEAN

Dr. Anil Kumar Anal
Head, Department of Food, Agriculture and Bioresources
School of Environment, Resources and Development
Asian Institute of Technology, Thailand
E-mail: anilkumar@ait.ac.th

Asifood Project Context

- Food security is one of the priorities in ASEAN "integration program" .
- Most of these problems are due to both qualitative and quantitative limitations in food safety management,
- Mainly due to inadequate skills of workers, and to a poor official control system.
- Lacks at the level of human resources strongly related to the higher education systems

Objective

- Improving food safety and food quality via better higher education for ASEAN & EU populations in the context of ASEAN Integration

Specific objectives

1. Enhancing the relationships between universities and professional stakeholders.
2. Bringing the “Training Engineering” (TE) methodology within partner’s universities, to ensure that new and updated curricula fit the needs of the economic sector and other stakeholders
3. Raising teachers capacity,
4. Strengthening the relationships between ASEAN universities, and between EU and ASEAN universities in the areas of food safety and food quality.

ASIFOOD Partner

P1	Montpellier Supagro	FRANCE	SUPAGRO
P2	Agreenium	FRANCE	
P3	University di Pisa	ITALY	UNIPI
P4	UNIVERSITAET FUER BODENKULTUR WIEN	AUSTRIA	BOKU
P5	UNIVERSITE DE LIEGE	BELGIUM	ULB
P6	Kasetsart University	THAILAND	KU
P7	ASIAN INSTITUTE OF TECHNOLOGY	THAILAND	AIT
P8	Prince of Songkla University	THAILAND	PSU
P9	Institut de Technologie du Cambodge	CAMBODIA	ITC
P10	Royal University of Agriculture	CAMBODIA	RUA
P11	HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY	VIETNAM	HUST
P12	Faculty of Food Science and Technology, Nong Lam University	VIETNAM	NLU
P13	Vietnam National Unviersity of Agriculture	VIETNAM	VNUA

Project structure

	Title	
WP1	(PRE) Start up & committees,	Supagro
WP2	(PRE) Diagnostics regarding relationships between universities and profesionals, recommendations and action plans	KU
WP3	(DEV) Diagnostic & recommendations regarding curricula/	VNUA
WP4	(DEV) : development of 3 training modules (5 to 15 ECTS each)	HUST
WP5	(DEV) : enhanced professionalization of universities. Various modalities,	ITC
WP6	(DISS) : project's results are capitalised and disseminated within the partner's countries and within the whole ASEAN,	AIT
WP7	(QPLN) Quality Monitoring,	BOKU
WP8	(MNGT) Pedagogy & Finance,	Supagro

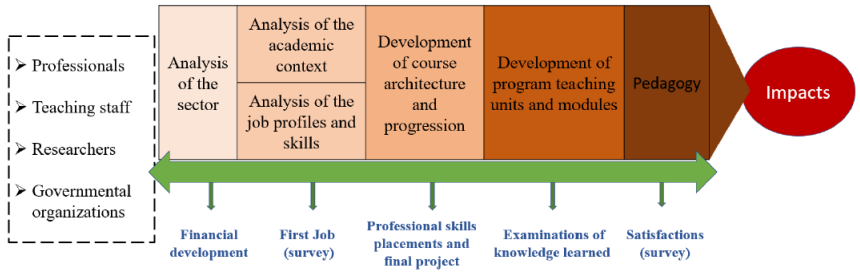


Illustration of the activities of the AsiFood Project

Innovative characters of AsiFood

Using the **methodology of "Training Engineering" to build programs** and updated programs tailored to the professionals needs

Organization a **seminar on Governance and change management** with Universities top management to built a strategic plan towards professionalization

Food Safety and Food Quality are often treated in segment. Our unique approach deals with **Food Safety and Food Quality as a global and integrated way in a multidisciplinary approach**

WP06-Activities, result and deliverable

description	Comment
Dissemination of short E-Learning modules based on videos on pedagogical tips for teachers	E-learning module has been designed and disseminated.
Design and teach of technical training courses	Each ASEAN Partner Universities propose the training modules from the developed three modules to implement.
Wide communication on the STTC and training modules	3 trips by AIT to Laos, Philippines, and one from South Asian countries
ELearning on training engineering (TE)	Design one E-learning module on "training engineering" (bilingual French & English). **First version Done**
Dissemination of the E-Learning module on TE within ASEAN and evaluation.	Each ASEAN Partner Universities will implement at least one E-learning module (As prescribed earlier) with various stakeholders
eSTTC : Design of an E-Learning module based on one STTC	Design one E-Learning module based on one of the 3 STTC, bilingual French and English. The course to be selected and the content described (from WP6.2)
eSTTC dissemination	Develop brochure, website, social media (AIT/MSA/BOKU) to be ready for SC4
Public awareness workshops on project's outcomes	Each University organize at least one seminar/ communications day for public awareness involving various stakeholders
Communicating & discussing project's outcomes and conclusions (after SC4) to media and ministries	International conference on Innovations in Food Ingredients and Food Safety (AIT and BOKU)

Indicators of progress

- ✓ Module Courses Designed (3 Modules Considering FARM to FORK Safety: Each partner established either Full Master Program in Food Safety and/or redesigned/Introduced new Curriculum for Food Safety and related courses at Postgraduate level.
- ✓ Teachers' training and Exposures
- ✓ E-Learning modules
- ✓ STTC
- ✓ eSTTC
- ✓ Public awareness workshops on project's outcomes
- ✓ Communicating & discussing project's outcomes and conclusions through conference or seminar

The short technical training courses (STTCs) taught at a partner university

Higher Education Institute	STTC aimed at professional stakeholders
The Asian Institute of Technology (AIT), Thailand	-Food quality and safety in innovative production system
Kasetsart University (KU), Thailand	-Food safety standard and GMP -Good hygienic practice in food services and the basic food safety management
The Prince of Songkala University (PSU), Thailand	-Food safety for small holders of retailers
The Cambodian Institute of Technology (ITC), Cambodia	-Training workshop on Food safety and quality for SMEs
The Royal University of Agriculture (RUA), Cambodia	-Quality and food safety management
The Vietnam National Institute of Agriculture (VNUA), Vietnam	-Innovation in food safety management
Hanoi University of Science and Technology (HUST), Vietnam	-Quality assurance and food safety
Nong Lam University (NLU), Vietnam	-Food quality management for food processing plant

Activities, result and deliverable

Preparatory Meeting of Modules of Asifood Project
17-19th April
Asian Institute of Technology (AIT)

- **Three Different Modules developed after identifying the needs (through survey to Industries and Universities)**
- Content and implementation of module was discussed.

Activities, result and deliverable

"Interactive Workshop on Safety and Quality Assurance in Food Processing Industry"

November 13, 2017

Asian Institute of Technology, Pathumthani, Thailand

Attended by postgraduate students, professionals from industries and research institutions from various nations.

- Good manufacturing practices, HACCP principles, Food Safety Management System, Risk Analysis and traceability procedure.

Activities, result and deliverable

Training on Workflow of Diagnostic Tools and Traceability Systems for the Application in Food Safety

March 19, 2018

Asian Institute of Technology, Thailand

- The NEXBIO (Thailand) Co. Ltd supported the training sessions.
- 30 participants including master's students, PhD students, research staffs of Department of Food, Agriculture and Bioresources and the professionals from Food Industries.



Activities, result and deliverable

Short Term Training on "Safety and Quality in Innovative Food Production Systems"

20-26 May 2018

Asian Institute of Technology, Thailand

- Dr. Anil Kumar Anal, Dr. Gerhard Schleining, Dr. Nicolas Korsak
- 55 participants including postgraduate students, quality assurance officers from industries, food safety and quality consultants, Government officers, and personnel from NGOs and INGOs from ten different countries
- **Topics**: Innovations in food and beverage product development, food quality and safety management systems, food safety legislation and laws, legal obligations, hygienic design and sanitation, auditing in food processing industries, laboratory quality management systems and laboratory safety and regulations



Activities, result and deliverable

'The First International Conference on Innovations in Food Ingredients and Food Safety (IFIFS 2018)"

12-13 September 2018

Bangkok, Thailand

- Participated by more than 130 participants including Academics, Scientists, Industrials, Policy Developers, Funders etc. from more than 15 countries including Austria, Belgium, France, Germany, Italy, Thailand, Indonesia, Vietnam, Myanmar, Philippines, Cambodia, Nepal, India, Bangladesh, Sri Lanka, Pakistan etc.
- The conference, jointly organized by the Asian Institute of Technology (AIT) and ISEKI Food Association in collaboration with ASIFOOD and SEA-ABT Project partners, co-funded by ERASMUS PLUS Program of European Union.



Main achievements

	Before AsiFood	With and after AsiFood
Link with professionals	Lesser professional contacts Less known about their requirements	More contacts Professional link ups for internship opportunities and their expectations
About students	Basic knowledge about food safety and quality	More clear about the importance of food safety and quality in food supply chain
About teachers	Limited knowledge on the courses and food safety regulations in Europe	Broaden their knowledge through different trainings in ASEAN and Europe
About Master program content	Master course: Safety and Standardization of Food Products	Same course but modified contents from 3 different modules
Link with other universities	Poor linkage with other Universities	Academic linkage with partner universities from ASEAN and Europe and their expertise

Results

1. **Increasing the capacity of Asian partner universities staff in the area of food safety and quality**, by sharing experiences and organising training courses.

2. Training Asian partner universities' staff in "**training engineering**" methodology,

3. **Developing 3 training modules in food safety & quality, adapted to the professional needs, to be included into master programs** and possible joint program

Results

4 - **Enhancing the links between partner universities and professionals**, in order to build a sustainable relationship between these Europe and South East Asia, essential requisitie to better training and research

5 - Finally, **the project's results were disseminated in the ASEAN countries**, notably through short technical training modules and E-Learning modules for teachers & professionals

Main Results

- 2 survey conducted, one with 160 enterprises (about their relationship with Universities) and a second one with 134 professionals (about skill needs).
- 24 teachers trained in EU on Food Safety and Food Quality May 2017 at Montpellier, Liege and Vienna and 22 on new pedagogy methods and technology at Pisa.
- 7 researchers came in EU in 2018 for training, networking and identify new topics for research projects.
- Several bilateral Memorandum of Understanding were signed to facilities Students and Teachers mobility.

Main Results

- Creation of 3 modules designed for the Masters level:
  1. Food safety and quality in primary production (12ECTS)
  2. Food safety and food quality analysis (15 ECTS)
  3. Safety and quality assurances in food processing industry (10 ECTS)
- Creation of 3 new Masters Programmes and upgrading of 5 existing Masters Programmes, all having obtained their University validations.
- Each university has purchased new lab equipment for teaching purpose.

Main Results

- 8 teachers trained to EQAS certification (European Quality Assurance System for Food Study programmes) process and standards by ISEKI Food Association. KU in EQAS certification process to be certificate before end of 2018.
- 154 students attended the courses modified or created with the support of the AsiFood project.
- Each University has developed and taught at least one Short Technical Training Course aimed at professionals.
- Creation of an e-learning method on “Training Engineering” with 6 sequences available in English and French.
- Website available in French English, Thai, Vietnamese and Khmer languages.

Impact

For students:
new/updated programm on food safety and food quality, new equipment available for practicals work

For universities:
Master offer is wider, better visibility at national level and regional level , new equipment available, capacity building for teachers and staff, better understanding of professional expectation,

For teachers:
researcher network improved at regional level and international level, capacity building of food safety and food quality and on E+ program

For professionals: new short training courses available, involvment increase in Faculties activities

Challenges

- Different level on Food Safety Training Programs in 3 Asian countries
- Project very ambitious, difficulties to fulfil perfectly all the objectives, very difficult to elaborate new modules, to teach courses within 3 years and to get an good picture of the impact.
- Some partners have difficulties to understand and apply EU procedures for financial reporting
- In some universities to have a continuous commitment---difficult

1st International Conference on
Innovations in Food Ingredients & Food Safety
IFIFS 2018

Innovations in Food Ingredients & Food Safety

PROCEEDINGS OF
THE FIRST INTERNATIONAL CONFERENCE

BOOK OF ABSTRACTS

Editors
Gerhard Schleining
Anil Kumar Anal
Foteini Chrysanthopoulou
Anita Habershuber

12-13 September 2018
Bangkok, Thailand

Editors
Anil Kumar Anal
Gerhard Schleining

12-13 September 2018

Outputs

https://www.sciencedirect.com/science/article/pii/S0956713519305002X

PROJECT REPORT

ASIFOOD

UNIVERSITIES AS KEY PARTNERS FOR THE NEW CHALLENGES REGARDING FOOD SAFETY & QUALITY IN ASEAN

Erasmus+ Project: project n° 56130-EPP-1-2015-1-FR-EPPKA2-CBHE-JP

Co-funded by the Erasmus+ Programme of the European Union

Thank you


Universities as key partners for the new challenges
regarding food safety & quality in ASEAN


ASIFOOD

Food Control
Volume 109, March 2020, 106913

AsiFood and its output and prospects: An Erasmus+ project on capacity building in food safety and quality for South-East Asia

A.K. Anal [a], Y. Waché [b, c], V. Louzier [b, d], R. Laurent [e], F. Mens [f], S. Avalllone [g], W. Mahakarnchanakul [h], P. Udompijitkul [h], C. Tantikitti [i], T.B.T. Nguyen [j], P.P. Thao [j], T.M.T. Nguyen [k], H.M.X. Nguyen [l], K. Thong [m], H. Seingheng [n], G. Schleining [o], L.F. Linder [o], M.-L. Scippo [p], A. Guidi [q]

Show more

https://doi.org/10.1016/j.foodcont.2019.106913

Abstract

The Asifood project is a capacity building project in the field of higher education involving collaboration among thirteen partners from Cambodia, Thailand, Vietnam, Austria, Belgium, Italy and France. This project aimed to support the universities in Vietnam, Thailand and Cambodia in building their capacities and their link with professionals in food safety and food quality, in the context of ASEAN integration. Further, training for trainers around a key theme, 'food safety and quality' for partner countries was set up involving students and teachers, professional stakeholders, political decision-makers and association leaders. During the first year of the project, study and diagnostic phase were carried out to properly assess the training as per each university needs. In the second year, the training paths around three axes: courses, quality and laboratory analysis were conducted. Finally, a test phase was carried out with the partners by inserting the modules created in the bachelor's and master's degree courses offered by the universities as well as short term trainings on innovations in food safety and quality.

6 APPENDIX IV (continued). SIMPLE: Support for International Platforms Merging Labour and Education.

Project SIMPLE experience
Support of International Plastform Merging Labour and Education

11-15 Nov 2019, University of Salerno, Italy

ERASMUS+ project
Capacity Building in the field of Higher Education

Ms. Koemseang NHUONG, Dr. Rany SAM, Mr. Sunday Van
Mobile Phone : +855 (0)96-38-45-331/92-58-54-33
E-mail : koemseang_vet17@yahoo.com
Alumni webpage: acc.ubb.edu.kh, **Facebook page:** https://www.facebook.com/UBB-Alumni-Career-Center-1827924017498217/
Project website: https://www.projectsimple.eu
Website :www.ubb.edu.kh
Address : National Road Number 5, Sangkat Prek Prahsdach, Battambang City, Battambang Province

Basic information

Support of International Platform Merging Labour and Education

= Link between Universities and Professional Sector in the Area of Agriculture and Life Sciences

Coordinating organization: CULS Prague, Czech Republic

Grant amount: 535 615 €

Duration: Oct. 15, 2016 till Sep. 15, 2019 = in total 36 months

Coordinators meeting: 25 and 26 January 2017 in Brussels

Partners

Project coordinator

Czech Republic
Czech University of Life Sciences Prague

Partners in Europe

Austria
University of Natural Resources and Life Sciences, Vienna

Belgium
Ghent University

Partners in Asia

Cambodia
- Royal University of Agriculture
- University of Battabang

Indonesia
- Bogor Agricultural University
- Tadulako University

Thailand
- Prince of Songkla University
- Kasetsart University

Associate Partners

Agrinatura
The European Alliance on Agricultural knowledge for Development

EMA
Erasmus Mundus Students and Alumni Association

ESAA
Erasmus+ Student and Alumni Association

FORS
Czech Forum for Development and Cooperation

SEARCA
Southeast Asian Regional Center for Graduate Study and Research in Agriculture

YPARD
Young Professionals for Agricultural Development

Aims of the project

- **Encouragement of cooperation of Academic sector (HEIs) with Professional sector in the area of agriculture and life sciences in selected Asian countries (Cambodia, Indonesia and Thailand)**

- **Enhanced employability of Asian partner universities' alumni**
  - 1) Support networking
    - o Alumni and Career Centres (ACC)
    - o Platforms for Cooperation with Professional Sector (PC-PS)
  - 2) Improvement of curriculum of study programmes
    - o Internships - practical knowledge and better skills of the alumni
  - 3) Enhancing soft skills

Target Groups

Academic sector

- Students
- Graduates
- Teaching staff
- Staff of Alumni Centres & Career Centres

Non-academic sector

- Business companies
- NGO's
- Governmental organizations
- EU-Asia companies

Main Activities

Promotion of joint cooperation of Alumni Centres and Platforms for Cooperation with Professional Sector Activities:

1) Organization of Career Days at Asian universities
2) Promoting activities of ACC and PC-PS
3) Support of exchange know-how and experiences among EU and Asian ACC and PC-PS

Main Activities

Building New Platforms and Cooperation Establishment and mutual cooperation of Alumni/ Career Centres and Platforms for Cooperation with Professional Sector

1) Establishment of the ACC at Asian project partners universities
2) Foundation of the PC-PS at all project partners' universities in Asia
3) Cooperation on international level

Main Activities

Guest lectures

Internship – supporting, evaluation, documents

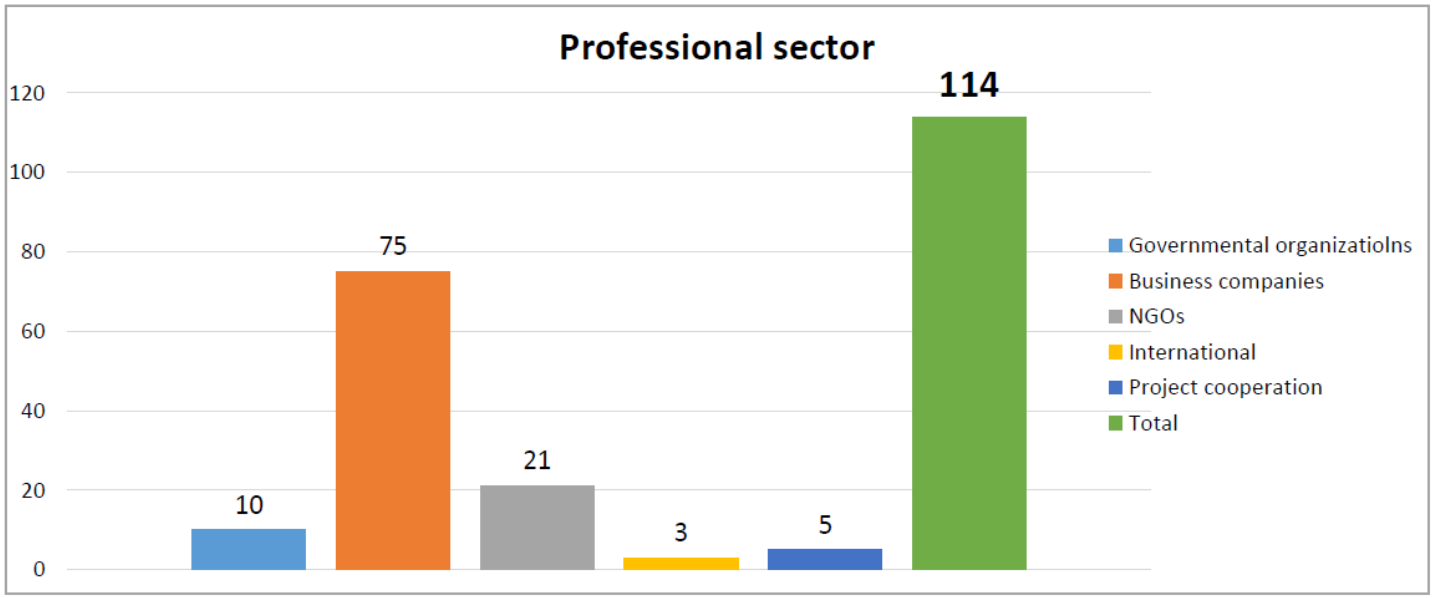
Soft skills trainings

Alumni and Career Centre (ACC) and PC-PS

- **Since** –2018
- **Overall strategy:**
  - To produce qualified graduated students for the current labor markets
- **Activities** –
  - To create networking/communication between students/ young graduates and employers for job opportunities
  - To provide soft skills training and to improve internship programm for students.
- **Means of communication** –Face to face meetings, workshops, trainings and social medias.

ACC and PC-PS in numbers

- **Students** – **3000 students** gained within SIMPLE project
- **Alumni** – approximately **50 alumni** gained within SIMPLE project



Career Days (CDs)

➢ **1 st Career Day evaluation – 6th April 2018**
(overview and evaluation)

- **High motivate** from UBB rector and private companies
- Provided **beneficial services** for students and graduates to meet potential employers
- **Gathered information** on job opportunities, internship programme, experience, knowledge and etc.
- **Provided a chance** to volunteers to involve in organizing event

➢ **2nd Career Day evaluation – 26th March 2019**

- **Were recognized by students** and **companies** for the benefit of CD
- Improved the **quality of CD**, experienced team and motivated volunteers
- Were appreciated for **paying companies** – very good for sustainability of the project

➢ **3nd Career Day evaluation – 3-4 Aug 2019**

- **Increased number of interested students** to visit booths and asking for job information
- Strengthened cooperation with professional sector
- Contributed from companies for CD preparation

➢ **Recommendation:**

- **Find possible ways** (companies, alumni, projects) **to support** the CD for sustainability of the project
- **Strong keeping in touch** and **cooperating** with professional sectors
- **Disseminate** the job opportunities as much as possible to students

Internships

- **Internships improvement of at least 2 curricula of the study programmes** – university benefit
  - **Upgraded the curricula** of Faculty of Agriculture and Food Processing (students have more opportunities to practice their skills after theory)
  - **Produced the qualified students** for employers
  - **Strengthened the partnerships/relationships** with other universities and companies worldwide
  - **Attract more students** to enroll in university


➢**Evaluation of internships** –

- The students were required to **submit a report** to faculty to evaluate and offered them to have **a short presentation** after their internship at companies

➢**Recommendation:**

- Students should have **a clear understanding** of responsibilities and scopes of their works
- University and companies should have **clear schedules** for internship programme so that students can easily prepare their study schedule based on internship schedule programme
- University should strongly support for the soft skills training

Soft skills training

➢**Soft skills trainings**

- **National** and **international trainers** were invited to train students to **improve their capacity building** and to **enhance ability** to be **qualified students** for their career after graduation

➢**Evaluation of soft skills training**

- **240 students** have been trained to enhance the **quality** and the **capacity** for applying **knowledge** into **real practice**
- Students were able to communicate, self confidence, have responsibilities, ability in problem solving and initiative idea e.g CD preparation

➢**Recommendation**

- Students **do not study** and/or **focus only** their professional skill, but they should also learn from soft skills for future career

Guest lectures and field visits

➢**Guest lectures overview**

– 5 national and 3 international guest lecturers

➢**Evaluation of Guest lectures**

– Students' Questionnaires and Short Survey

➢**Recommendation**

- Provide more **qualified national** and **international guest lectures** from university consortium and professional sectors
- Provide **more opportunities to students** to participate in the field visits

Other activities and Promotion




SIMPLE project Final Conference, 27 August 2019

Lessons learnt

- **Alumni and Career Center**
  - **To establish** and **to run** the Alumni Center
  - **To recruit the staffs**, **volunteers**, and **students** to involve in the center.
- **Platforms for Cooperation with Professional Sector (PC-PS)**
  - **To keep in touch with professional sectors** in order to participate in CDs.
- **Internships**
  - **To communicate** and **negotiate** with companies to send students for internship program
- **Soft skills trainings**
  - **To communicate** and **recruit the qualified speakers** to participate in the Soft Skill Training Program

SIMPLE project Final Conference, 27 August 2019

Lessons learnt

- **Guest lectures**
  - To **identify qualified** and **relevant speakers** to the training
- **Overall improvement**
  - To **gain best practices** and **experience** from partner university consortium in Asian and EU
  - To **improve staff's capacity building** and **competencies** in organizing the activities and events
  - To **improve the curricula** and **course syllabus** to meet the project's goal

SIMPLE project Final Conference, 27 August 2019

Main project outputs

Increased cooperation between Academic & Professional sectors

- Active Alumni Centers and Platforms for Cooperation with Prof. Sector
- Internship modules incorporated in Bc./MSc. study programmes
- Link between alumni and employers (Career days)
- Feasibility study of AC and PC-PS
- Ongoing management of active project website, Facebook and LinkedIn profile

APPENDIX V. Redesigning the lecture: Thoughts from an active learning practitioner

Università degli Studi di Padova — Department of Industrial Engineering

Redesigning the lecture:
thoughts from an active learning practitioner

Massimiliano Barolo

CAPE-Lab – Computer-Aided Process Engineering Laboratory
Department of Industrial Engineering
University of Padova

max.barolo@unipd.it

Salerno (Italy)
November 12, 2019

Introducing ourselves
A warm-up questionnaire

- **How long have you been serving as a higher-education instructor?**
- Please connect to: www.menti.com
- Enter code: **92 36 31**

2

Our role

- What does "the society" expect from **us** as academicians?

- What is the **distinguished feature** of a University professor?
- We are expected to be **professional educators**

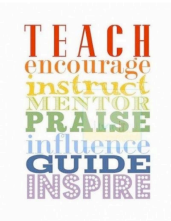
Are we indeed?

3

Back to your experience as a learner
A reflection exercise

- Think back to **your personal** experience as a **learner** in a class
  - at whatever school level
    - primary, secondary, high, college

- You can probably remember 1-2 **teacher(s)** you have learnt a lot from
- Why have they been so **meaningfu**



4

Higher education in the XXI century

Prisoners of tradition?

- « (…) higher education still operates on a model of academic disciplines, **lecture-driven teaching** and ubiquitous **testing** that was put in place in the 19th century. »

- « Society, economy, technology and careers have all changed dramatically.
  But though academics pride themselves on their intellectual creativity, **universities have changed less than business, the military or the practice of religion** (…) »

- « (…) the **core model** for undergraduate education is pretty much the same. »

Dr. Craig Calhoun
President of the Berggruen Institute and former director of the London School of Economics
The New York Times, 23/08/2017

The traditional lecture

Cussler (2015). The future of the lecture. *AIChE J.*, **61**, 1472-1477.

Henry of Germany delivering a lecture to university students in Bologna

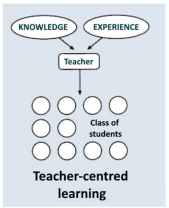
Laurentius de Voltolina (~1350). *Liber ethicorum des Henricus de Alemannia*

A pedagogic assumption we rely on

- **Teaching** and **learning** are two disjoint activities

• Teaching is **delivering contents** – it is the **instructor**'s responsibility – it is done **inside** the classroom	• Learning is a matter of **brain** – it is the **student's** responsibility – it is done **outside** the classroom

Teaching by telling



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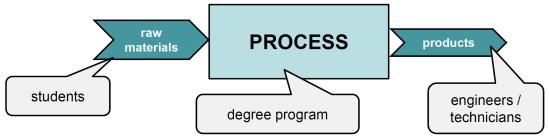
Higher education is a transformation process

High value-added product



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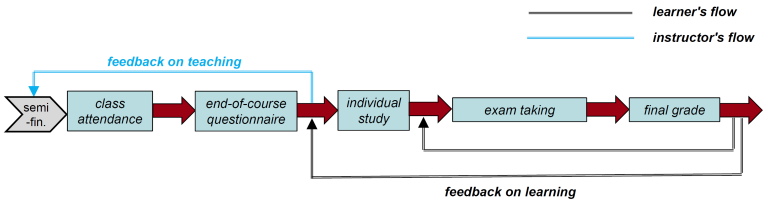
Each course is a process

A teaching model consolidated by tradition



Teaching by testing (the learning process)

- Student side: a mostly **open-loop** process
- Instructor side: **run-to-run** control (optimistically)

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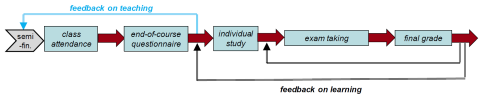
A consequence of this teaching model

Content first

- The instructor only cares about **what** he/she is required to teach
  - **how** and **when** the students learn is unimportant



- The lecture is conceived to just make the students **take notes**
  - learning is achieved elsewhere **outside** the classroom

- Even the vocabulary has adapted
  - one **"attends" a class**, but does not "**participate**" in a class

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Back to the traditional lecture

Transfer of contents from the knowledge holder to the receivers

- What was the **added value of the lecture** at the time of Henry of Germany?

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Class is no longer what it used to be

Teaching or letting people learn?

- Teaching is not **delivering contents**
  - today the contents can be transferred also by other means, asynchronously
    - web / digital textbooks / videolectures / YouTube

- A more ambitious goal for the lecture: **making the students learn**
  - if they don't, it is also **our** problem

- **Activating learning <u>in each class</u> is the added value of the lecture**
  - it is no longer possible to delegate the students to learn **<u>at home only</u>**
  - **<u>daily feedback on learning</u>** should be provided

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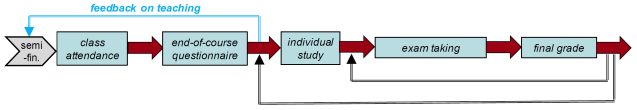
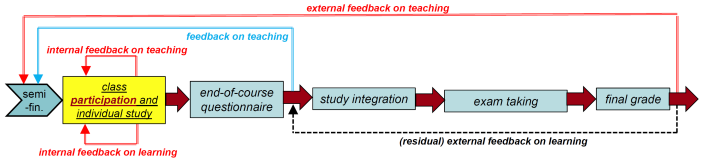
Increasing feedback

A more effective teaching process





Teaching by controlling *(the learning process)*

- Learning should be assessed both sides **during each class**

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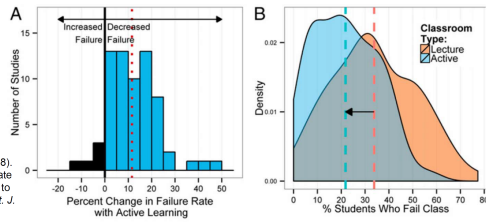
Active learning

<u>How</u> to learn vs. <u>What</u> to learn

- **Student engagement** is central to the learning mechanisms
  - we can no longer ignore **<u>how</u>** learning occurs
  - content vs. context

- Learning **improves** with **active involvement**



Tharayil et al. (2018). Strategies to mitigate student resistance to active learning. *Int. J. STEM Ed.*, **5**, 7-21

Freeman et al. (2014). Active learning increases student performance in science, engineering, and mathematics. *PNAS* June 10, **111**(23), 8410-8415

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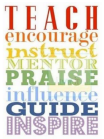
Designing classes for active learning

- How would you like **students to react** when they attend your class?
  - Take notes?
  - Ask questions?
  - Discuss with you?
  - Interact with their peers?
  - Do an activity?
  - Get motivated to study?
  - Get fascinated by a particular topic?
  - Understand the importance of a concept for their future profession?
  - ……



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Some active learning practices

- Start of the new mood from **the very first class**
  - introduce youself
    - *Who am I? What has my career been so far? What is my expertise? Any hobbies?*
  - listen to the students
    - *What are their expectations from the course?*
- **Think-pair-share**
  - make the students work in the classroom on "small" tasks
  - in crowded classrooms: use *Kahoot* or *Mentimeter* to share the answers
  - assign short time (eg., 3–6 minutes), so as to keep them very active
  - variants
    - pair-think-share
    - mini flipped class: let them discuss in advance in groups a concept that will be taught immediately after

- **Flipped class**
  - students study at home, and the class is used to discuss/practice the content
  - record your lecture (*Kaltura*; *Camtasia*) and make it available to the students in advance
    - provide several learning assessment questions, and possibly some problems to solve

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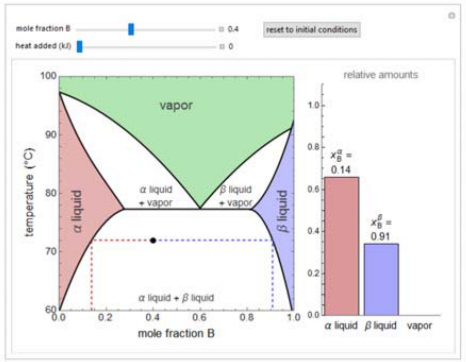
Some active learning practices /cont'd

- **«Write down the two most important concepts you have learnt so far»**
  - then collect, mix, re-distribute, share
  - or use *Padlet*

- **Peer review**
  - «Grade your peer's homework» (e.g., one week available; use *Moodle*'s "Workshop" feature)
    - if the grade is too different from the instructor's one, meet the student and ask him/her to motivate
  - «Review your peers' exercise» (also in crowded classrooms)
    - numbered blank sheets are handed over during a class; each student must remember his/her number
    - students are asked to solve an exercise (~20 minutes)
    - solutions are collected and re-distributed at the end of the class
    - each student reviews the solution of a peer and hands over his/her review during the following class
    - the review is returned to the original student

- **«Find the error»**

- **Use animated teaching resources** to capture attention



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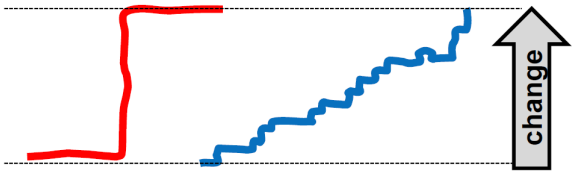
Some active learning practices /cont'd

- Have the students **integrate concepts** learned in different courses
  - assign tough projects, to be carried out in teams
    - across an entire course, or during one single entire day (e.g., Overnight project)

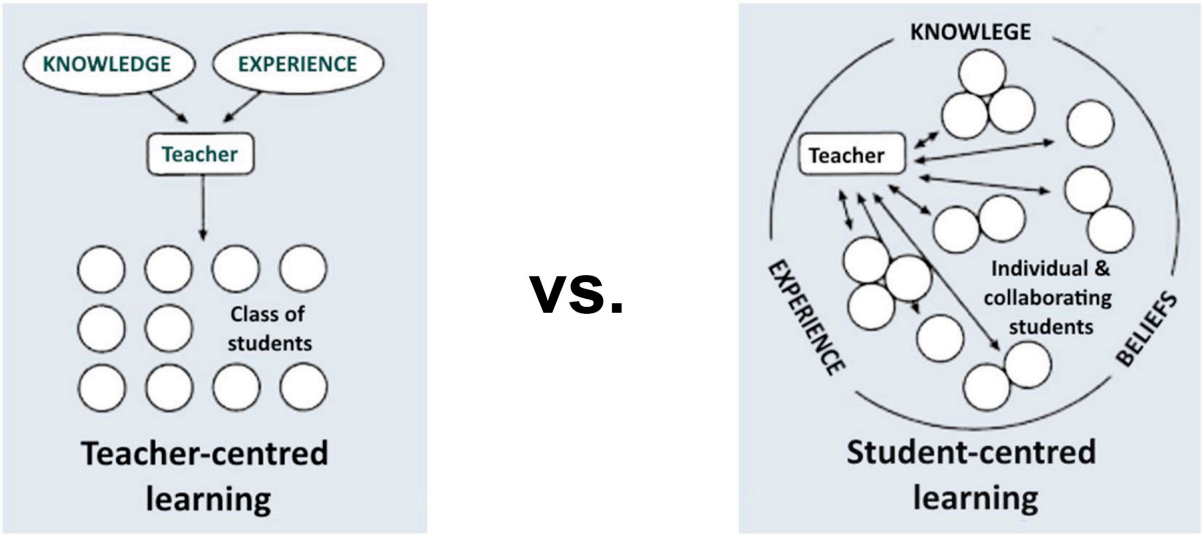
- Continuously **provide feedback on individual learning**
  - ask questions to promote reflection; ask; ask…
    - engage debate on the students' answers
  - assign (and grade) homework regularly
  - assign (and grade) weekly "quizzes" on Moodle

- Do **not** necessarily look for **revolutions**
  - **incremental** changes in your lectures are enough
  - be prepared to (temporarily) fail



A change of paradigm

From teacher-centered to student-centered education



- The change should involve both the instructor as an **individual**, and the **Institution** as a whole

- Long-lasting improvement can be achieved only if the **Institution as a whole** promotes and supports change in the educational paradigm

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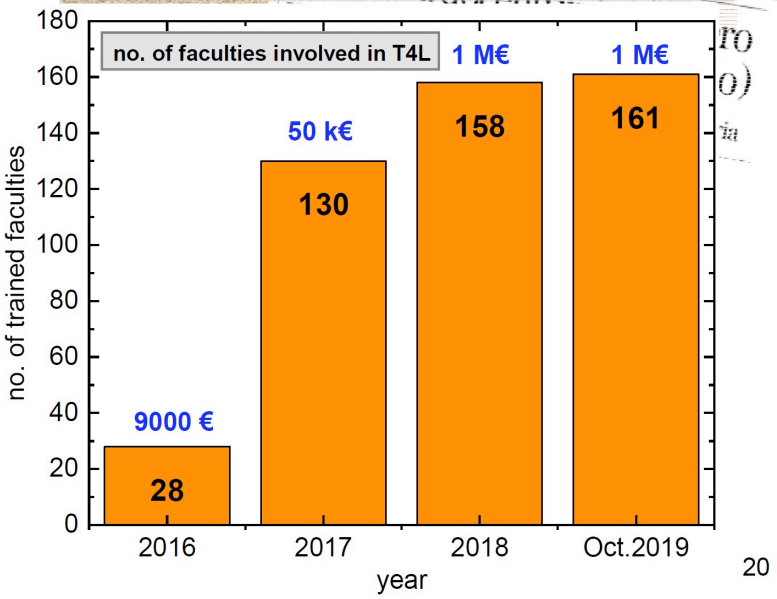
The T4L project at Padova University

Teaching for Learning

TEACHING 4 LEARNING @UNIPD

- **Faculty training**
  - teaching how to teach
  - residential workshops
  - experts from overseas
- **Change agents**
  - trained faculty "experts" promote changes at the Departmental level
- **Peer observation**
  - instructors (in triads) observe each other while delivering a class
  - feedback on teaching



Peer observation

A way to provide and receive feedback on teaching

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- Promotes **continuous improvement** of the individual teaching practice
  - by de-privatization of the lecture

- **Instructors in small groups** (typically 3) observe each other while lecturing

  - then, they exchange views on possible actions and practices to improve teaching
  - this offers a different perspective on teaching from that of the students
  - the triad does not necessarily include instructors from the same discipline

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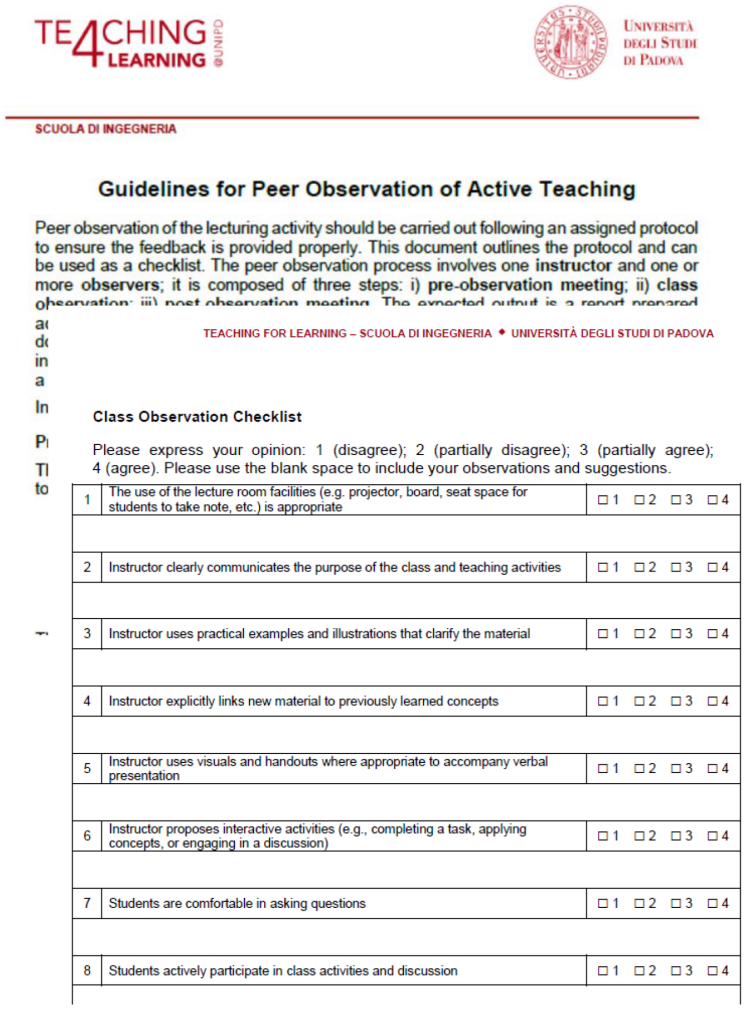
Peer observation

How it is done

- **A 3-step process**
  1. pre-observation meeting
  2. class observation
  3. post-observation meeting

- **Actors**
  - 1 instructor
  - 2 observers

- **Documentation**
  - Guidelines
  - Checklist



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SCUOLA DI INGEGNERIA

Guidelines for Peer Observation of Active Teaching

Peer observation of the lecturing activity should be carried out following an assigned protocol to ensure the feedback is provided properly. This document outlines the protocol and can be used as a checklist. The peer observation process involves one **instructor** and one or more **observers**; it is composed of three steps: i) **pre-observation meeting**; ii) **class observation**; iii) **post-observation meeting**. The expected output is a report prepared

TEACHING FOR LEARNING – SCUOLA DI INGEGNERIA ◆ UNIVERSITÀ DEGLI STUDI DI PADOVA

Class Observation Checklist

Please express your opinion: 1 (disagree); 2 (partially disagree); 3 (partially agree); 4 (agree). Please use the blank space to include your observations and suggestions.

1	The use of the lecture room facilities (e.g. projector, board, seat space for students to take note, etc.) is appropriate	☐1 ☐2 ☐3 ☐4
2	Instructor clearly communicates the purpose of the class and teaching activities	☐1 ☐2 ☐3 ☐4
3	Instructor uses practical examples and illustrations that clarify the material	☐1 ☐2 ☐3 ☐4
4	Instructor explicitly links new material to previously learned concepts	☐1 ☐2 ☐3 ☐4
5	Instructor uses visuals and handouts where appropriate to accompany verbal presentation	☐1 ☐2 ☐3 ☐4
6	Instructor proposes interactive activities (e.g., completing a task, applying concepts, or engaging in a discussion)	☐1 ☐2 ☐3 ☐4
7	Students are comfortable in asking questions	☐1 ☐2 ☐3 ☐4
8	Students actively participate in class activities and discussion	☐1 ☐2 ☐3 ☐4

Making our way to the end

A short individual activity

- Share **2 thoughts** that today's discussion has led you to do
  - something you were not (entirely) aware of before participating in this seminar
  - or something that could impact on your teaching practice

https://unipd.padlet.org/max_barolo1/g7ths655bzsf

password: **FOODI**

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