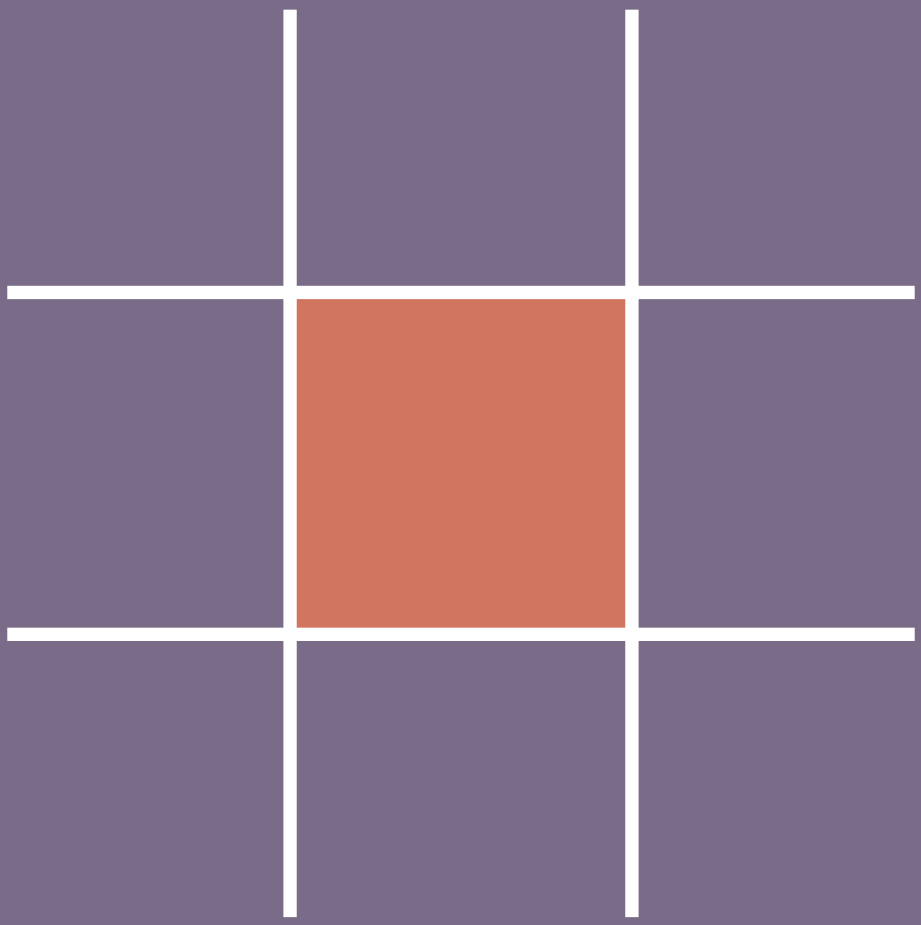
ASSESSMENT GRID

Multidisciplinary Projects in an International Context



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1. Information for Identification of the Project.

MUPIC (Multidisciplinary Projects in an International Context):	**Solving a real problem in a multicultural and multidisciplinary context.** **Project number: 2018-1-CZ01-KA203-048151** **This project has been funded with support from the European Commission.**
Disciplines involved:	**Mechanical Engineering; Business Administration; Industrial Design; Business Administration & Marketing**
Period:	**Piloted: September 2019 – May 2020 and September 2020 – May 2021**
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Language	**English**

2. What is the MUPIC Project?

Multidisciplinary **P**rojects in an **I**nternational **C**ontext (MUPIC) consists of the realization of a project in a real context, which integrates, in an applied way, the professional competences acquired in the graduate and postgraduate courses. All these competences will be worked during a year, to give a professional response to a real problem raised by associate partners (during the second year Vesuvius and Desimone). Participant students will have to find or create a final product / solution, working together in virtual and multicultural environments. Each team will apply appropriate project management methods as well as share and create knowledge through a collaborative strategy. The project is focused on the support of international students in the acquisition and/or improvement of technical and personal competences, using innovative online methods in multidisciplinary teams.

Through MUPIC, participants will work on professional skills in a broad sense as well as soft / transversal competences; MUPIC project aims to create and test a learning model in which international and multidisciplinary teams acquire those generic skills needed in today's labour markets. Among the competences that have been proposed to develop and improve within the framework of the MUPIC we can find:

i) Intercultural communication in English.
ii) Online communication in virtual teams.
iii) Time management.
iv) Self-motivation.
v) Flexibility and adaptability.

vi) Teamwork.

vii) Commitment and ethical responsibility.

viii) Leadership.

ix) Management and resolution of conflicts & negotiation.

x) Personal initiative, innovation, and creativity.

xi) Project management.

xii) Lifelong learning.

xiii) Trust building.

MUPIC project is carried out in groups of students that work as a team and is evaluated in a unified way; the final score obtained in the project will be individual and will be related to the summing up of teamwork and individual aspects. The course aims to test a multidisciplinary and multicultural learning model, where representative students from several European universities work in groups using a problem-based learning method.

3. MUPIC CURRICULUM.

This multimodal course is focused on the support of international students´ cooperation in the field of technical and other universities using innovative online methods in a multidisciplinary project management team.

The course aims to create and test a multidisciplinary students' team learning model where representative students from several European universities will be involved. Students will be given an assignment from an external company and they will have to find or create a final product / solution working together online.

Teams will be formed by participants coming from different fields: engineering, industrial design, project management and business and marketing. Participants will be involved in online modules in several fields, including intercultural awareness, language and social skills, and project management in virtual teams. Each team will use online communication and apply diverse innovative methods, which are currently applied all over the world, sharing and creating knowledge.

The aim of learning / teaching activities is to give students, teachers, and companies' representatives an opportunity to meet, set and clarify teamwork assignments. During the project, participants will be introduced into project management concepts and will be divided into teams, acquiring different roles. Participants will also meet some companies' representatives who will introduce the problems to be solved during the project. During MUPIC project participants will also receive support from lecturers, coaches and experts from different universities and partner companies.

This multimodal course will contain 6 modules.

- **M1 Intercultural and Virtual Communication**
- **M2 Language**
- **M3 Project Management.**

- **M4 Engineering Design**
- **M5 Business & Strategy**
- **M6 Industrial Design**

These modules will be focused on some core skills students should achieve:

- **Improve their language skills to communicate effectively** in the working environment.
- **Improve / gain intercultural competences** that are very important for working in international teams.
- **Learn how to communicate online properly** using formal language in synchronous as well as asynchronous learning/working environments.
- **Learn how to work in virtual teams effectively**, among others.

The online course will also provide students with guidelines and methods on how they should work together from the project management point of view and give them some guidelines / steps they should follow on engineering design.

English B2 level is required from the students.

MUPIC GENERAL OBJECTIVE.

The general objective of MUPIC is to solve a problem / real need of an industrial company, applying the professional / technical competences acquired in the graduate and postgraduate courses, acquiring and / or developing, at the same time, some relevant soft competences like conflict resolution (negotiation and effective decision making) and lifelong learning.

GENERAL COMPETENCES TO BE DEVELOPED.

G1. Intercultural communication.

G2. Online communication and work development in virtual teams.

G3. Written and oral communication: presentation of planning, reports, and a final presentation of the solution.

G4. Teamwork: team building and collaborative work.

G5. Conflict resolution: solution of situations related to decision making.

G6. Initiative, innovation, and creativity: each team will resolve in a different way the problem posed by each company.

G7. Leadership: each person will assume responsibilities in the process and coordination of tasks to be developed.

G8. Lifelong learning: identify evidence of what has been learned so far, to project his / her professional itinerary.

G9. Use of digital communication technologies.

COMPETENCES (PEDAGOGICAL OBJECTIVES) - LEARNING OUTCOMES.

LO1. M1 Intercultural and Virtual Communication

The student can

- recognize the need and importance of learning and exploring intercultural communication in the context of the MUPIC project (international teams, dynamics within teams, dealing with companies, orientation week abroad)
- become aware of their own cultural identities and build an appreciation for others (personal, social and cultural identities)
- understand and formulate ways how culture affects communications (Edward T. Hall's High-Low Context dimension, perceptions of space, approaches to time)
- identify specifics of online intercultural communication
- understand the meaning and applications of the Individualism vs. Collectivism concept as the most widely-used terms in comparing cultures; recognize the constraints of the concept
- build an overall comprehension of the major cultural values underlying different behaviors and understand leading values dimensions (Hofstede's Values Orientation Model, brief overview of other models); using the acquired knowledge, formulate their experience from working in the international group
- come up with tips for effective cross-cultural communications: how to become adaptable in intercultural interactions (include experience from the course and suggest practical solutions) ·
- share data, information and digital content with others through appropriate digital communication technologies.
- understand the differences between face-to-face and virtual communication and apply appropriate code of conduct
- adapt behavioral norms and netiquette of the employer while using digital technologies and interacting in digital environments.
- understand how to build and lead an effective virtual team

LO2. M2 Language

The student can

- recognise the difference between various levels of formality in language, and be able to use
- recognise different levels of formality in the English language and use the proper means of communication in various working environments
- write a report
- recognise the commonly made mistakes in reports

LO4. M4 Project Management.

Students can:

- Understand general project management concepts especially from product development viewpoint: Have a good overall view of development project life cycle and project phases.

- Understand the importance of project communication and stakeholder management.
- Understand special characteristics of requirements management in the product development context.
- Have an overall comprehension of the basics of development project planning. Be able to describe how the WBS (Work Breakdown Structures) are used as a basis for the planning.
- Use project risk management tools and understand the risk management principles.
- Understand importance of quality management in development projects.
- Write out and compile a basic development project management documentation.

LO3. M3 Engineering Design.

Students can:

- have an overall comprehension of a product life cycle and the engineering design process (and its interaction with overall project management for product development, with economic, marketing, communication issues)
- write a list of requirements with quantitative technical specifications
- develop their creativity and innovation and apply related implementation techniques
- recognize the constraints linked to standards, patents, utility models

The engineering students of MUPIC will be able to:

- understand and synthetize the functional principles of a mechanical system;
- justify the selection of machine elements;
- produce an overall drawing under the formal conventions of technical drawing;
- evaluate quantitatively the performance of the designed mechanical system and locate the proposition with respect to the state-of-the-art
- write a synthetic report with computation and design notes;
- respect the standards and safety constraints;
- develop his/her criticism with regard his/her own design process;
- be aware of socio-economical, environmental and ethical constraints.

LO5. M5 Business & Strategy.

Participants can:

- Participants with a business background were able to:
- Review the analysis and existing tools within the discipline of Strategic Management.
- Carry out the strategic diagnosis of an organization and its summarized presentation in the SWOT matrix.
- Suggest strategies to correct weaknesses, face threats, maintain strengths and exploit opportunities (CAME Matrix).

- Review the CANVAS model and the bases for generating a new business.
- Develop a marketing strategy.
- Understand the importance of incorporating social objectives into the business model.

LO6. M6 Industrial design.

Students can:

- understand the iterative nature of an engineering design process of a technical system subject to economical, technological, societal and environmental constraints
- establish product requirements specifications
- refer to standards, regulations, etc.
- establish a state-of-the art including patents search
- predict the performance, quality and competitiveness of an engineering design proposal with objective property indicators
- perform a multidisciplinary engineering project in a structured framework, with innovation-driven contribution

4. Pedagogical Approach & Implementation.

Problem based, self-directed learning in teams and innovative.

Working life oriented. In 2020-2021, Desimone and Vesuvius will be collaborating with MUPIC. During the project, companies' representatives, team coaches and experts will support participants on a technical and professional basis.

Availability of many evaluation tools: a learning diary, three intermediate reports, a final report, a presentation, and a defence of the solution proposed, a self-evaluation of each participant, a cross evaluation among team members.

Blended approach: students will meet the rest of participants face-to-face at a meeting in Mons (February 2021) and, again, at the end of the project (May 2021).

5. How will we develop MUPIC Project?

The project methodology is active and participatory. Participants will learn to work in teams and solve a real problem, developing the specific and soft competences defined in the project.

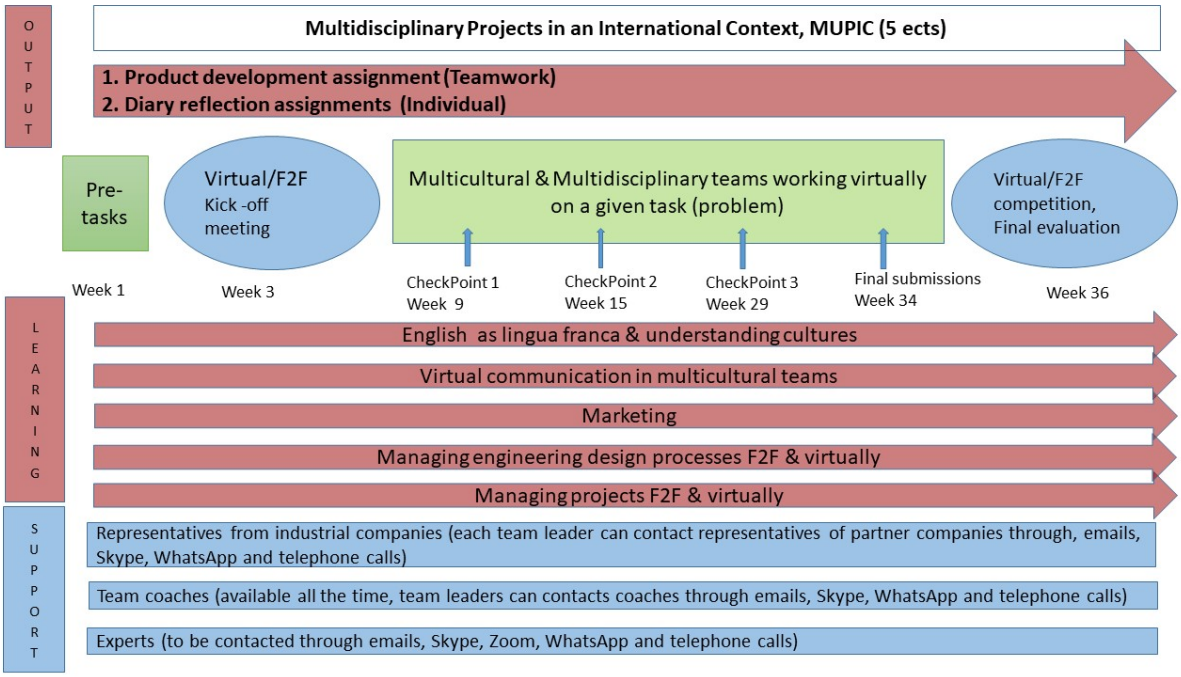
Transversal Competences - MUPIC Model.

- Teamwork.
- Oral and written communication (+ English).
- Use of ICTs.
- Conflict resolution / negotiation.

- Initiative, innovation, and creativity.
- Project management.
- Leadership.
- Ethical commitment and responsibility.

6. MUPIC Pedagogical Approach & Implementation.

For the development of MUPIC Project, different learning and support activities have been programmed, including the successful completion of specific assignments designed to assess the acquisition of competences.



7. Role of students in the MUPIC project: Commitments & Responsibilities.

To carry out MUPIC project successfully, it is fundamental that teams work effectively, which requires the commitment of all their members to achieve objectives and internalize responsibilities. To achieve that goal, participants should:

- Participate in online courses and face-to-face and virtual scheduled meetings and seminars (with other participants, coaches, experts, and partner companies' representatives).
- Perform those tasks assigned in a timely manner.
- Interact with the coaches and mentors assigned in the project.
- Team-up and actively participate to achieve the project objectives.
- Communicate effectively.

- Respect the confidentiality of information about partner companies; honour partner companies' NDA.
- Behave in a respectful manner with the rest of the team members and help solve any conflict that may arise (through communication, negotiation, and conflict resolution).
- Co-evaluate the project results.

8. How MUPIC Project will be evaluated?

7.1. Documentation.

Each MUPIC Project team must prepare and deliver:

- A reflective learning diary to be written individually during the life of PILOT II.
- One reports for each of the activities to be assigned under Checkpoint 1 (November – week 9), Checkpoint 2 (December – week 15) and Checkpoint 3 (March – week 29).
- A final report at the end of May – week 34 (description of the work carried out and solution to be given to each of the partners companies).
- A public defence of each solution prepared by each team (May). Each team will be free to choose the format of the presentation that fit better to the solution proposed.

7.2. Presentation and defence of MUPIC Project.

- Each team will be free to choose the format of the presentation that fit better to the solution proposed. All competences acquired during MUPIC Project must be used to do the presentation of results and the defence of them.
- The attendance of all team members to the defence session is mandatory; any unjustified absence would have a negative effect on the student's final score.
- Representative of partner companies and coaches will participate in the evaluation of each team final report and the defence, choosing the best solutions for each company.
- During groups' presentations, questions may be formulated to clarify the proposed solution or to assess the evolution of each group learning process.

7.3. Evaluation.

MUPIC project final scores are unique for each student. Scores reflect the level of acquisition of the specific and transversal competences associated with the project and consists of the sum of the scores obtained as a team and on individual basis. Scores will

be calculated at the end of the project to get the ***5 ECTS*** involved and will be obtained by adding the following items.

- **A: Assignments: 20%.** Evaluation to be carried out by team coaches of the project and experts based on the Rubric of Written Work.
- **FR: Final Report: 35%.** Evaluation carried out by team coaches, experts and representatives of partner companies based on the Rubric of Written Work.
- **PP: Project Presentation: 15%.** Evaluation made by team coaches and representatives of partner companies based on Rubric of Presentation and Oral Communication.
- **ILPE: Individual Learning Process Evaluation: 20%.** Evaluation based on all the evidence gathered in the project development process (attendance to training, meeting minutes, attendance and participation in virtual classes, attendance and participation of sessions in Mons and interaction with partner companies) and the self-reflective learning diaries.
- **CE: Cross Evaluation among students: 10%.** Evaluation carried out by the members of each team based on the Cross-Evaluation Rubric.

MUPIC PROJECT SCORES
(A*0,20 + FR*0,35 + PP*0,15) + (ILPE* 0,20 + CE * 0,10)

In some cases, where team coaches consider it appropriate, a correction factor may be applied to the team score to compensate differences in the performance of its members.

9. Consultations and attention to students.

During the development of MUPIC Project, participants will receive support from team coaches (from all university partners, one for each team), university experts (from all university partners, in mechanical engineering, project management, language and communication, marketing and health care) and experts from partner companies. Coaches will support participants on a regular basis using different tools, while university experts' support will be provided through answering questions in open forums. Experts from partner companies will also be available for specific support in technical aspects.

10. Assessment tools

Assessment tools:

- Cross-Evaluation Rubric - acessible from www.mupic.eu
- Educational Model Competencies Rubrics - acessible from www.mupic.eu
- Finsl Project Evalation - acessible from www.mupic.eu

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