foRMAtion Teachers' Guide

Guidelines and lesson plans for the instruction of the international curriculum for research managers and administrators

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INTELLECTUAL OUTPUT 3

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Executive Summary

Intellectual Output 3 (IO3) of the foRMAtion project aimed to develop a Teachers' Guide including student activities and education methodology support for the international curriculum for future Research Managers and Administrators (RMAs). It includes various innovative tools, to develop students' professional and transversal skills. In line with the main findings of the literature on the main theories of learning, student motivation and effective teaching in higher education, the curriculum and the teaching material follow the principles of outcomes-based teaching and learning, and the learner-centred approach of the constructivist pedagogy.

The Teachers' Guide provides tools and methods for instructors to develop students' most important soft skills such as cooperation, (written and oral) communication, problem-solving, flexibility, time management, networking, negotiation etc. The development of these skills and competences is enhanced not only by the application of innovative teaching methods but also by shaping teachers' attitudes and views on their role in the learning process and on the goals of the learning process. Several activities aim to enhance students' digital skills and their familiarity with working with different applications and online interfaces. The ability to exploit these tools is becoming increasingly important, as they enable more flexible and more efficient work, and they provide the conditions for a smooth collaboration for teams in an online environment. The application of digital tools makes the teaching–learning process more playful for students and this – in addition, to easing student engagement – increases learning effectiveness. As collaboration skills are also essential soft skills, each lesson includes activities requiring student cooperation.

Though the primary target group of this guide are teachers and lecturers, the overall aim of the guide is to support the competence development of students in higher education, the ultimate beneficiaries of this output. Apart from them, we believe that experts involved in higher education course design will also benefit from the Teachers' Guide. Since we developed the current guide, its methodology has been adapted to the specific needs of non-formal adult education as well, thus adults and adult learning providers are also considered as indirect target groups. RMAs already working on the labour market and coordinating teams can also benefit from IO3 when they provide further training for their staff members.

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1. Introduction and methodology

1.1. Principles guiding the development of the curriculum and the learning activities

Intellectual Output 3 (IO3) aims to develop a teaching material for the international curriculum for future Research Managers and Administrators (RMAs), providing a guide for the teachers with classroom activities, assignments, teaching methods, short guides and worksheets. This Teachers' Guide was elaborated parallel with the IO2 international curriculum, following its modular structure.

The specificity of the curriculum and the teachers' guide of the foRMAtion project is that they were developed for the teaching of students pursuing their bachelor-level studies, i. e. for young people, the majority of whom are aged 18-21 and have recently started tertiary education. They usually do not have much work experience, and most do not have a clear vision of their future career. In the experience of higher education practitioners, this cohort of students still needs a considerable amount of support in motivation and self-regulated learning. These factors have led us to pay particular attention to the purposeful design of the course's objectives, tasks, content, process, strategy, methods, organisation, and tools - to help instructors to create the best conditions for learning.

Pedagogical constructivism

The constructivist theory of learning (Glasenfeld, 1998) posits that knowledge only exists within the human mind, therefore human learning is constructed by the learners. This draws attention to some important facts: (1) Learning is a highly unique and individual process: As students' subjective interpretations differ, the same teaching-learning activity may result in different learning by each of them which increases the need for personalization and **differentiation**. (2) Learners do not arrive at education as empty vessels to be filled with knowledge, but with **prior knowledge** that is already structured in theories and consolidated. One of the greatest challenges in education, which in some cases is necessary, is to restructure and modify existing knowledge. (3) The learners construct meaning only through **active engagement** with the world (such as experiments or real-world problem-solving). (4) The process of learning is most frequently a process of **deduction**: students already have predictions concerning the phenomena; these schemes may come true and become

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more complex and sophisticated (or can be modified) during the learning process. (5) Learners can only learn something deeply and stably for the long term if they see its **adaptivity** (Nahalka, 2021).

Outcomes-based teaching and learning

The constructive pedagogical approach is paralleled by **outcomes-based education** (OBE) as "constructive alignment is itself one form of OBE" (Biggs & Tseng, 2002). According to a clear and practical definition, outcomes-based education is "a convenient and practical way of maintaining standards and of improving teaching. Standards are stated up front and teaching is tuned to best meet them, assessment being the means of checking how well they have been met (Biggs & Tseng, 2002, pp. 5)". The guidelines developed by the Tuning project supporting this change, recommend the following steps for the design or improvement of new degree programmes:

1. Definition of the main goals and the profile, based on the needs and the potential determined.
2. Formulation of the learning outcomes.
3. Development of the course structure.
4. Defining teaching-learning activities.
5. Defining the assessment system to enable teachers to verify that the outcomes have in fact been achieved.

One of the most prominent frameworks for classifying educational objectives and supporting the formulation of learning outcomes is **Bloom's** revised **taxonomy** (Krathwohl, 2002). It sets out a hierarchical categorisation of cognitive learning, moving from **basic** (remembering and understanding) to increasingly **complex levels of skills** (application, analysis, evaluation and creation of concepts, processes, procedures, and principles).

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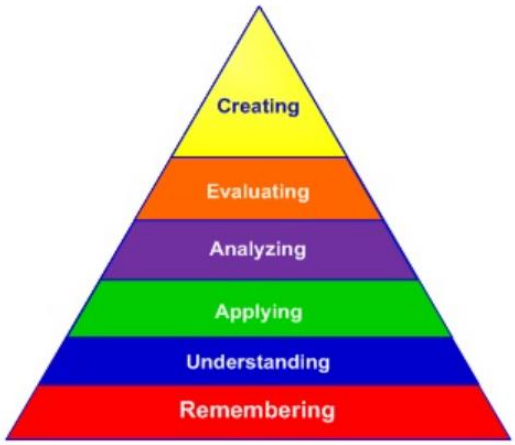

Figure 1: The revised taxonomy of Bloom (Anderson and Krathwohl, 2001)
Source: https://thepeakperformancecenter.com/educational-learning/thinking/blooms-taxonomy/blooms-taxonomy-revised/

In the past three decades, the adaptability of the above-described principles theories led to the development of frameworks and procedures defining the main directions of transnational educational developments and tools. The desk research included the review of the following frameworks:

- the Tuning project developing principles for the European Higher Education Area,
- Cedefop's handbooks on Defining, writing and applying learning outcomes,
- the European Credit Transfer and Accumulation System (ECTS) Guide,
- the European Qualification Framework for Lifelong Learning,
- The Digital Competence Framework for Citizens (DigComp),
- The CanMEDS framework, the most widely accepted and applied physician competency framework in the world (competence framework, learning outcomes with milestones)
- The BESTPRAC on RMAs tasks and competences.

Creating a motivating learning environment

Following these steps, teachers have two main tasks left: "to **set up a learning environment** that encourages the student to perform learning activities, and then **assess** the outcomes to see that they match those intended" (Biggs & Tang, 2011).

In the last two decades, student motivation and engagement became a central subject for research, policy and pedagogical practices. The influence of certain emotions on learning engagement and effectiveness became one of the areas of educational theory and psychology that gained interest and enquiry (Pekrun, 2006; Titsworth et al, 2013). While some of them seem to promote student

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engagement (such as enjoyment/happiness, hope, pride, relief and interest) others hinder it (these are primarily boredom anger, shame, anxiety, hopelessness, and feeling of isolation).

Though teachers play a key role in students' motivation and performance, it is important to emphasize that teachers' ultimate task is to help students to take responsibility for their own learning and to create circumstances that **promote students' self-directed learning**. Some findings of the motivation research provide useful principles that can provide effective help when creating this learning environment.

Relatedness, competence, and autonomy

Components of teacher communication that meet students' psychological needs and their influence on student motivation are clearly supported by several studies. According to the **self-determination theory**, basic psychological needs are **relatedness**, **competence** and **autonomy** (Ryan & Deci, 2000; Jang et al., 2010). Students' efforts and engagement are determined both by the **learning climate** and **teaching behaviour**. Learning climate is a group-level phenomenon that influences engagement with activities and academic achievement. Components of this climate are perceived support from the teacher and the peers, competence, and satisfaction. Teacher attitude promoting engagement is characterized by high student autonomy support (interested, empathetic, trusting, open, patient) and timely guidance and structure (leadership, organization, assignment, situation management, low uncertainty) (Jang et al. 2010; Rowe et al. 2010).

Student-centeredness and active learning

The increasing expression of students' needs for a learning environment that promotes active learning launched a shift in education from a teacher-centred approach to student-centred teaching (McCombs and Whisler, 1997). The **learner-centred approach** can be manifested in different aspects of the learning design such as

- the involvement of students in the decision-making on the exact course content,
- self-directed, active learning including constructive interactions, critical thinking and problem-solving,
- a different approach to the role of instructors who, instead of knowledge transfer, aim to facilitate and guide students learning,
- the increased responsibility and control for learning and development by the students,
- the evaluation aims to assess the level of progress and the achievement of learning goals instead of grades (Weimer, 2002).

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Adaptivity

As it is mentioned above, **adaptivity** is a key goal within the constructivist approach to the learning process. Learners can only learn something deeply and stably in the long term if they see its adaptivity (Nahalka, 2021). As it is always the learner who determines whether an element is adaptable for him or her (i. e. is considered **useful, applicable** and fits well into their existing knowledge system). Several factors can increase the adaptivity of a piece of knowledge: things, topics, or activities that students find **attractive, interesting, nice, useful** or that are linked to their deep **values**.

Bolkan and Griffin (2018) came to similar conclusions: they identified two kinds of teacher behaviour promoting student interest: the *catch* and *hold* types of actions. Tools for catching students' interest include teacher immediacy, humour and intellectual stimulation. These behaviours are indispensable when students' attention should be captured but result only in short-term interest and engagement. Student interest can be *held* and transformed into a deep and long-term engagement – which is very similar to the concept of adaptivity – by showing them the significance and relevance of the content in the context of their studies and beyond that, about real-life challenges. This helps them to connect course goals with their personal values and motivation.

1.2. Application of these principles in the Teachers' Guide

Creating a motivating climate

Instructors can effectively support students' perceived **relatedness** by engaging them as partners, pursuing empowering communication based on mutual respect and trust – instead of the traditional hierarchy-based relationship. The first and most important remark related to the current guide is that without such an attitude, the methods described in the current teaching aid will not result in effective and self-directed learning. Increasing students' perceived **autonomy** in selecting from different learning activities, and topics or involving them in the development of course policies (see Module 2, Lesson 1) help them to take responsibility for their own learning. Instructors can maintain a positive learning climate by reminding students of the polite and encouraging way of communication during group work, peer evaluation or conflicts (the lesson plans include special reminders and advice for instructors regarding such situations).

Student motivation is enhanced by gamified activities such as role play functioning as workplace simulation, creative project assignments (such as the creation of a promo video on a real project) and the adaptivity of the activities (see below).

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Bloom's revised taxonomy of educational objectives

The current guide was developed to develop each level of educational objectives (Krathwohl, 2002), thus ensuring that students become able not only to remember and understand but also to **apply**, **analyse** and **create** new knowledge. They are also encouraged to critically **evaluate** the current practice of research management, considering that they are the decision-makers of the future. The learning outcomes were formulated using the verbs recommended by these taxonomies.

Outcomes-based teaching and learning

The course development started with the definition of the main **goals** of the course, which was followed by the formulation of the **learning outcomes** as knowledge areas, skills and attitudes. The next phase aimed to agree on the course **structure**, and only then, simultaneously and in close cooperation with each other, did the **curriculum** and the learning **activities** (Teachers' Guide) start to be developed. This ensured that during the course development, we were able to keep learning outcomes in mind and consider whether a particular content or activity was helping to achieve them.

As described in the foRMAtion international curriculum (Oliveira et al., 2022), one of the preparatory tasks for the development of the foRMAtion curriculum was the identification of different areas of expertise, knowledge, skills and attitudes that are needed for the successful practice of RMA profession, including the ones needed by students with different backgrounds (with no or reduced experience). The result of intensive consultation with an international team of practising RMAs, researchers, HE instructors and professionals providing training programs for RMAs (that can be considered as a low sample qualitative survey) was a set of competencies (defined as knowledge, skills, attitudes and responsibilities).

The above survey revealed that a considerable part of the skills required from RMAs (such as time management, reliability, teamwork and assertiveness) belongs to the set of so-called "**soft**" or "**transferable" skills**. The labour market needs reports (e. g. ManpowerGroup, 2022) highlight the increasing weight of soft skills such as reliability, resilience and problem-solving. These skills cannot be developed simply by increasing knowledge about them - applying active learning methods like problem-based learning, cooperative teamwork or simulation of workplace situations can do much more for their improvement by creating situations where students can use these skills and then reflect on their own behaviours and feelings.

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The principles of the constructivist theory of learning

Differentiation in the case of the current Teachers' Guide is enhanced by the various types of learning activities: teachers can select from them upon the needs of the actual student group. The activities described by the greyed-out parts of the text include optional activities: these can be implemented both instead of, or in addition to the recommended parts (in black). These additional activities, as well as the optional homework for extra points – can be used as tools for differentiation, e. g. can be assigned to students with higher levels of competence.

Students' **prior knowledge** is assessed at the beginning of each semester, as well as their actual level of understanding of a given content: teachers can get a clear picture of student competencies with the help of the homework and by the short questions at the beginning of the lessons. This enables instructors to adapt the activities and the learning pace of the course to the needs of the group.

The **deductive** direction of learning appears i. e. in the modular structure of the topics: each module is introduced by a lesson that presents the topic and the goals of the actual module, including an overview and/or an interview with an expert who refers to the topics to be discussed during the following lessons.

The goal of the Teachers' Guide is to increase students' **active learning** while decreasing the proportion of teacher presentations during the lessons: teacher presentations, therefore, are the shortest possible and are replaced with various types of student activities including teamwork or individual activities, student presentations, classroom level discussions or activities. The teacher's responsibility is to set the scene for effective learning, facilitate student work, wrap up the most important information at the end of a certain activity and assess student activities.

The **adaptivity** and the perceived meaningfulness of the content learned are ensured by the explanations introducing student activities: they usually include a short rationale indicating the benefits of the activity and the workplace situations where such experiences can be useful. The use of real project documents, interviews with invited experts and the production of outputs similar to the real ones also serve the same goal. As for the exercises to develop soft skills, their broad usefulness is evident for learners and, based on the experiences of the pilot training, it is indeed motivating for them. Activities introducing students' new digital applications promoting effective project (or self) management also increase the adaptability of the course content.

Problem-based learning (PBL) has gained a significant role in the activities and project assignments as it also increases adaptivity: during PBL activities, students have to interpret or find important information in real project or policy documents, or to compile different text types that are usually required from RMAs in a workplace, such as meeting agendas, project summary, social media posts or risk analysis. The real case effect of PBL activities is further enhanced by the **storyline-type role**

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play in the lesson activities. This facilitates the artificial creation of situations where students have to confront each other, negotiate, collaborate or make decisions as leaders.

The application of this student-centred approach "empowers learners to conduct research, integrate theory and practice, and apply knowledge and skills to develop a viable solution to a defined problem".

Further resources used for the development of learning activities

Savery's handbook (2006) provides further insights into the benefits of the PBL approach. The Wiley Handbook of Problem-Based Learning offers a detailed overview of the different aspects of PBL: (i) the origin of the concept and its baseline, (ii) case studies, (iii) proposal of strategies to design PBL and provides some examples of its application (Moallem et al., 2019).[1]

The handbooks of Biggs and Tang (2007) and Fry, Ketteridge and Marshall (2008) provide valuable and useful guidelines regarding the methodology of HE instruction. Practical cooperative learning techniques (such as expert jigsaw) are described in Spencer Kagan's handbook on cooperative learning, and some possible applications are mentioned in the methodological booklets compiled at Corvinus University of Budapest (Daruka & Pfister, 2015). In addition to the aforementioned resources, several websites make available up-to-date, innovative and practical information on HE teaching methodology, such as www.teachthought.com and The Chronicle of Higher Education. The websites of the educational centres of the most prestigious universities like the Teaching and Learning Lab of the Massachusetts Institute of Technology, Vice Provost for Teaching and Learning at Stanford University, Derek Bok Center for Teaching and Learning at Harvard University offer insight into some valuable innovative teaching practice of these institutions.

Hungarian sources compiled on the base of the above-mentioned studies also stimulated productive thinking in connection with the Teachers' Guide, for example, the handbook edited by Lukács&Derényi (2017), Éva Tót's study (2017) on writing learning outcomes or the manual of Éva Farkas (2017). These sources provided useful information regarding the process of formulating learning outcomes starting with the identification of learning goals, competences, and the way of phrasing relevant learning outcomes (giving hints on active verbs).

[1] Examples for other sources on PBL: Gijbels, D., Dochy, F., Van den Bossche, P., & Segers, M: Effects of Problem-Based Learning: A Meta-Analysis From the Angle of Assessment. Review of Educational Research, 75(1), 2005; Baviera-Puig, A., Buitrago-Vera, J., Escribá-Pérez, C., Pons-Valverde, JV.: An Example of Problem-Based Learning (PBL) from a Collaborative and Multidisciplinary Approach. Conference: International Conference on Education and New Learning Technologies, June 2016; Journal of Problem-Based Learning.

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1.3. Principles and practical tips for students' assessment

This teaching has been developed in line with the main principles of the constructivist pedagogical approach focusing on students' individual learning needs, adaptivity of the knowledge and the enhancement of student responsibility and intrinsic motivation for learning. As it is always the learner who determines whether an element is adaptable for him or her, assessment should measure up whether they can apply the knowledge learnt. This requires the involvement of the students themselves in the evaluation and the role of peer evaluation: learners can best measure the adaptability of their individual knowledge in cooperation with their peers (Nahalka, 2021).

The gamified model of students' assessment provides an effective and new approach to individualized and motivating ways to give students feedback on their competences.

Traditional model	Gamified model
Teacher teach students	Self learning
Marks to evaluate students	Points to evaluate students
Text (books and board)	Design (more attractive)
Topics to define course contents	Levels (more competition)
Increased complexity	Stages (more complexity)
Test	Master level
Grade	Rank

Figure 2: The traditional and the gamified models of student assessment
Source: Elshiekh & Butgerit, 2017

Scoring system

Instead of the assessment of 1-2 longer assignments or exams awarded by 1-2 grades, the current teaching guide recommends the use of a scoring system where students (similarly to the systems applied by digital games) can collect points throughout the whole semester, with different (optional and compulsory) activities. These activities can be shorter but more frequent and can include both classroom and home activities, and oral and written tasks. Involving students in the assessment increases their responsibility and self-directed learning.

Differentiating in the assessment of group tasks

As team members are not always equally active in project teamwork, evaluation of teamwork can create delicate situations. In these cases, we can introduce a system that differentiates according to the level of student contribution as follows: in the first few lessons of the semester points can be

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equally shared among team members but later teams distribute points among members according to the contributions of the team members. This method requires from the instructor (a) clear and timely information about the expected way of assessment and (b) monitoring the smoothness of the evaluation process.

Evaluation criteria

Clarity of teacher expectations can be enhanced by defining clear evaluation criteria (as such criteria are set in the case of proposal evaluations as well). The Guide includes several templates for such criteria that can be adapted to the teachers' actual goals. Defining such criteria is especially important in the case of longer assignments (e. g. Module 2, Lesson 4). We recommend that instead of using these criteria tables without changes, **adapt them** to the actual needs and requirements of the course/programme, and define the evaluation requirements according to student needs: Ask them: "When being evaluated, in what areas would it help you to get feedback?

1.4. Useful hints for the implementation of an international lesson

During the FoRMAtion Project, the three universities organised an international online lesson with the participation of all three student groups and lecturers from the institutions. The international lesson received positive feedback from the students and the teachers as well. The students had the chance to meet each other online and get acquainted with each other during the teamwork session. The teachers could also build closer ties with each other and share their good practices. In the following session, some hints and experiences are assembled in connection with the international lesson.

Preparation for the international online lesson

In case an international online lesson is planned with the participation of universities from different countries, its organisation should start early in the semester. Finding a proper date for each participant group can be challenging, considering the different schedules of the higher education institutions (and the different time zones if applicable). The topic of the lesson, its structure of it, sharing the necessary online worksheets, readings, and the assignment of the different roles to the participating teachers form part of the preparation phase as well.

Implementation of the international lesson

Detailed planning of the lesson (with a lesson plan with tasks and timing) is helpful to keep the time-frame of the class. The formation of international teams can also take place before the lesson with the help of the teachers; thus, time can be saved. When focusing on teamwork, the detailed oral and written description of the tasks is important, and it is also useful to divide the task of joining the

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breakout rooms for a short time among the participating teachers. Reading a short article and answering a given set of questions, the students had to distribute among themselves to keep the time limits. Discussing the results is an important part of the exercise, where questions can be asked directly from the individual students
An interview with an expert on the given field (either pre-recorded or real-time) enhances the connection with real working situations. The students also formulated questions regarding the topic. The international online lesson can be a good platform for the simulation of an online multiplier event.

Other experiences:

- in the case of online lessons, teamwork needs more time than in class
- a camera-on policy can enhance participation
- taking a picture/screenshot of the participants for documenting the event

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2. Lesson plans for the international curriculum for Research Managers and Administrators

Module 1 - Research Methodology and Design

M1 - Lesson 1 – Introduction to science — what distinguishes scientific knowledge from other types of knowledge

Learning outcomes to be developed:

- The student can distinguish and describe the different approaches in scientific theories and epistemological trends, and their scientific history-background (hermeneutical vs scientific, inductive vs. deductive, qualitative vs. quantitative approach, mixed-methods)
- The student is open to perceiving and accepting the diversity of cultural and social contexts of research systems and practice
- The student is open to different research methods and is committed to finding consensus in an interdisciplinary research setting

Legend for the use of lesson plans: Grey texts describe useful but optional activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**
a) Games helping students to be connected: getting acquainted with each other *15 minutes* • Share a personal fact about yourself and then find something in another student's report to which you can connect in some way. E. g. ○ the teacher starts the game by sharing "I like listening to classical music",		15 mins

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○ the first student says, "I have 2 younger brothers and one of them plays the piano" and "My hobby is travelling" - etc. • "Show and tell" see here • OR: "Snowball fight"- see here • OR: Haiku writing with instructions (Instructions for the poem: first line: the title of the poem (the topic itself, according to the expectations of the students, for example, the RMA profession/research projects; second line: describe the topic with two adjectives; third line: three verbs (expressing action) in connection with the topic; the fourth line: a short sentence that expresses feeling about the topic; the fifth line: one-word synonym of the first line that reflects the essence of the topic. • OR see further ideas here • A brief introduction, summary of the modules		10 min
b) Evaluation of prior knowledge and competences - *10 minutes* Exploring the initial competencies, and knowledge of students: Answers to basic questions by Kahoot test (after registering, at Kahoot homepage, you can create games helping assessment here (https://create.kahoot.it/creator). Students shall visit kahoot.it page, where they can type in the game pin and then their name. **Possible questions** True or false? 1. Elevator pitch ○ Is a 20-minute-long presentation (F) ○ Is a 1-2-minute-long presentation (T) 2. The branch of philosophy concerned with the nature of what exists is ○ Ontology (T) ○ Epistemology (F) 3. The concept of "paradigm" was introduced to the philosophy of science by ○ Thomas Kuhn (T) ○ Benedict de Spinoza (F)	*(Results (scores) should **not** be counted into the end-of-semester grade)* *The 3 best answerers can be awarded extra points*	35 min

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<table>
<tr>
<td>
4. When we make a general statement or set a theory on the base of a concrete and specific observation, we are using the approach of

induction
deduction

This session is closed with the teacher’s feedback and summary.

d) Classroom discussion on „research” and “science”?

Brainstorming by Mentimeter, word cloud: What comes to your mind when you hear this word: research? (Link to Mentimeter)
One of the most frequently expected answers / Keywords: “knowing “
Research is about knowing but research is a special way of HOW we know what we want to know
Example: Let’s say some facts that we know that we are sure of: "Why are we sure of them, what are the sources of our conviction/beliefs? E. g. How do we know that…

the number of hours of sunshine in winter is lower than in autumn - my own experience
the earth is round - from school
Mercury's surface temperature can reach 840 degrees because it is the closest planet to the Sun - Scientific resources/forums; National Geographic, radio, etc., OR it is Accepted by others

In most cases, what is more typical: your own experiences OR beliefs based on information received from others?
What are the differences between our everyday research and scientific research? (Example: we read in a magazine that plants are growing faster in case we speak to them.)

<table>
<tr><th>Everyday methods of research</th><th>Scientific methods:</th></tr>
<tr><td>testing on our own plants
asking our friends about their experiences or hearings</td><td>conducting a systematic review of already implemented studies, etc.
implementing an experiment with more plants, in different environments</td></tr>
</table>
</td>
<td>Optionally can be included in the extra points awarded for a class activity.</td>
<td>5 min for individual reading

10 min for group discussion and outline,

10 min for presentations (2,5 minutes/presentation)

20 minutes</td>
</tr>
</table>

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			5 mins

no visible change experienced/heard → the hypothesis is not valid	a) plants breathe in oxygen and while we talk to them, the level of oxygen slightly increases b) those talking to their plants, are more likely to notice the water needs or illness of the plant → the hypothesis is valid

- Share the definition from IO2 on slide: "the intellectual and practical activity encompassing the systematic *study of the structure and behaviour of the physical and natural world through observation and experiment'* (Oxford, 2000)"

Definitions of science and research

- The word science comes from the Latin word *"scientia"*, meaning knowledge. Scientists do research.
- Research is the attempt to discover new knowledge.

What are the specific features of scientific research that

- distinguish it from everyday research and
- make it particularly effective, and specially organized?

Answer can be demonstrated via Coggle. Example: https://coggle.it/diagram/YCOvki31dzsfuK4c/t/scientific-research

d) Activities helping the understanding of theoretical foundations - *35 minutes*

For the content and exercises, see Annex 1.1. A and 1. 1. B and the literature below this table

- **Jigsaw method** (See a guide for the teacher on the application of the jigsaw in Annex 1.1. C)**:** Possible topics and resources the chapter parts can be used (scanned/copied) as readings for the exercise:
  - IO2: foRMAtion international curriculum for future Research Managers and Administrators (Oliveira et al., 2022)
  - Babbie, E. R. (2016). The practice of social research.
  - Lewis-Beck, M. S., Bryman, A., & Futing Liao, T. (2004). The SAGE encyclopedia of social science research methods

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(Vols. 1-0). https://methods.sagepub.com/Reference/the-sage-encyclopedia-of-social-science-research-methods ○ Sage Project Planner tool https://methods.sagepub.com/project-planner. It also includes an interactive "**Methods map**" with the definition of key terms and an illustration of their relations with each other with the help of a dynamic mind map. ○ YouTube videos on research terminology: https://www.youtube.com/watch?v=8xvpxBVCo0c Suggested terms/topics: • induction & deduction ○ ontology, epistemology, theory ○ scientific theories, ○ epistemological trends and their scientific history background ○ qualitative and quantitative research • Depending on the number of students, (in the case of a 16 students-class) 4 readings (each of them can be 3-5 pages long) discussing the main theoretical units/part-topics (e. g. scientific theories, epistemological trends, and their scientific history background), these are distributed to the 4 teams who read, discuss and present them. OR YouTube videos like https://www.youtube.com/watch?v=8xvpxBVCo0c • The assignment of the groups: they discuss and summarize the main conclusions of their readings in the form of a commonly edited outline in an online document, shared with the teacher (e. g. Google Document) • Students go back to their original groups (see Annex 1.1. C) and present the content discussed in the expert groups for their own group. The group members can give the presenter 1-10 points, considering the clarity and attractiveness of their presentation. • The class creates an online, e. g. Coggle (https://coggle.it/) mindmap with the direction of the teacher, based on the outlines created by the groups with the facilitation of the teacher. See an example in Annex 1. 1. B.	max. 5 points/per person for the outlines *the teacher divides the total score given by*	

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d) Activity providing insight into the RMA and researcher professions - *(20 minutes)*
• Introduction to the RMA carrier by inviting an RMA *(10 minutes of self-introduction + 10 minutes of Q&A)*
• *Questions of the teacher previously sent to the RMA as a guide for the presentation, for example*
  ○ *Your education background. What kind of education is useful in the case of an RMA?*
  ○ *How did you choose this profession?*
  ○ *What are your duties?*
  ○ *What are the most exciting or challenging parts of the profession? What do you love in your job?*
  ○ *What are the trajectories of further development/career opportunities?*
  ○ *What are the most important / useful skills for this profession?*
• optionally, this conversation can be done via the Internet as well
 	
e) Quick end-of-lesson feedback for the teacher
Quiz questions by Socrative or Wordwall game with quiz questions related to the content of the lesson.
	the classmates to each presenter by 10
	
	Optionally can be included in the extra points awarded for a class activity.	

References for this lesson:

- Babbie, E. R. (2016). The practice of social research. Available in our Files/Readings folder of the General channel of our Teams group.
- Lewis-Beck, M. S., Bryman, A., & Futing Liao, T. (2004). The SAGE encyclopedia of social science research methods (Vols. 1-0). https://methods.sagepub.com/Reference/the-sage-encyclopedia-of-social-science-research-methods
- Sage Project Planner tool https://methods.sagepub.com/project-planner
- Szokolszky, Á. (2004) Kutatómunka a pszichológiában. Metodológia, módszerek, gyakorlat. Budapest: Osiris

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Annex 1. 1. A – Summary table of concepts and methods

Source: http://salmapatel.co.uk/academia/the-research-paradigm-methodology-epistemology-and-ontology-explained-in-simple-language/

Paradigm	Ontology *What is reality?*	Epistemology *How can I know reality?*	Theoretical Perspective *Which approach do you use to know something?*	Methodology *How do you go about finding out?*	Method *What techniques do you use to find out?*
Positivism	There is a single reality or truth (more realist).	Reality can be measured and hence the focus is on reliable and valid tools to obtain that.	Positivism Post-positivism	Experimental research Survey research	Usually quantitative, could include: Sampling Measurement and scaling Statistical analysis Questionnaire Focus group Interview
Constructivist / Interpretive	There is no single reality or truth. Reality is created by individuals in groups (less realist).	Therefore, reality needs to be interpreted. It is used to discover the underlying meaning of events and activities.	Interpretivism (reality needs to be interpreted) • Phenomenology • Symbolic interactionism • Hermeneutics Critical Inquiry Feminism	Ethnography Grounded Theory Phenomenological research Heuristic inquiry Action Research Discourse Analysis Femenist Standpoint research etc	Usually qualitative, could include: Qualitative interview Observation Participant Non participant Case study Life history Narrative Theme identification etc
Pragmatism	Reality is constantly renegotiated, debated, interpreted in light of its usefulness in new unpredictable situations.	The best method is one that solves problems. Finding out is the means, change is the underlying aim.	Deweyan pragmatism *Research through design*	Mixed methods Design-based research Action research	Combination of any of the above and more, such as data mining expert review, usability testing, physical prototype
Subjectivism	Reality is what we perceive to be real	All knowledge is purely a matter of perspective.	Postmodernism Structuralism Post-structralism	Discourse theory Archaeology Genealogy Deconstruction etc.	Autoethnography Semiotics Literary analysis Pastiche Intertextuality etc.
Critical	Realities are socially constructed entities that are under constant internal influence.	Reality and knowledge is both socially constructed and influenced by power relations from within society	Marxism Queer theory feminism	critical discourse analysis, critical ethnography action research ideology critique	Ideological review Civil actions open-ended interviews, focus groups, open-ended questionnaires, open-ended observations, and journals.

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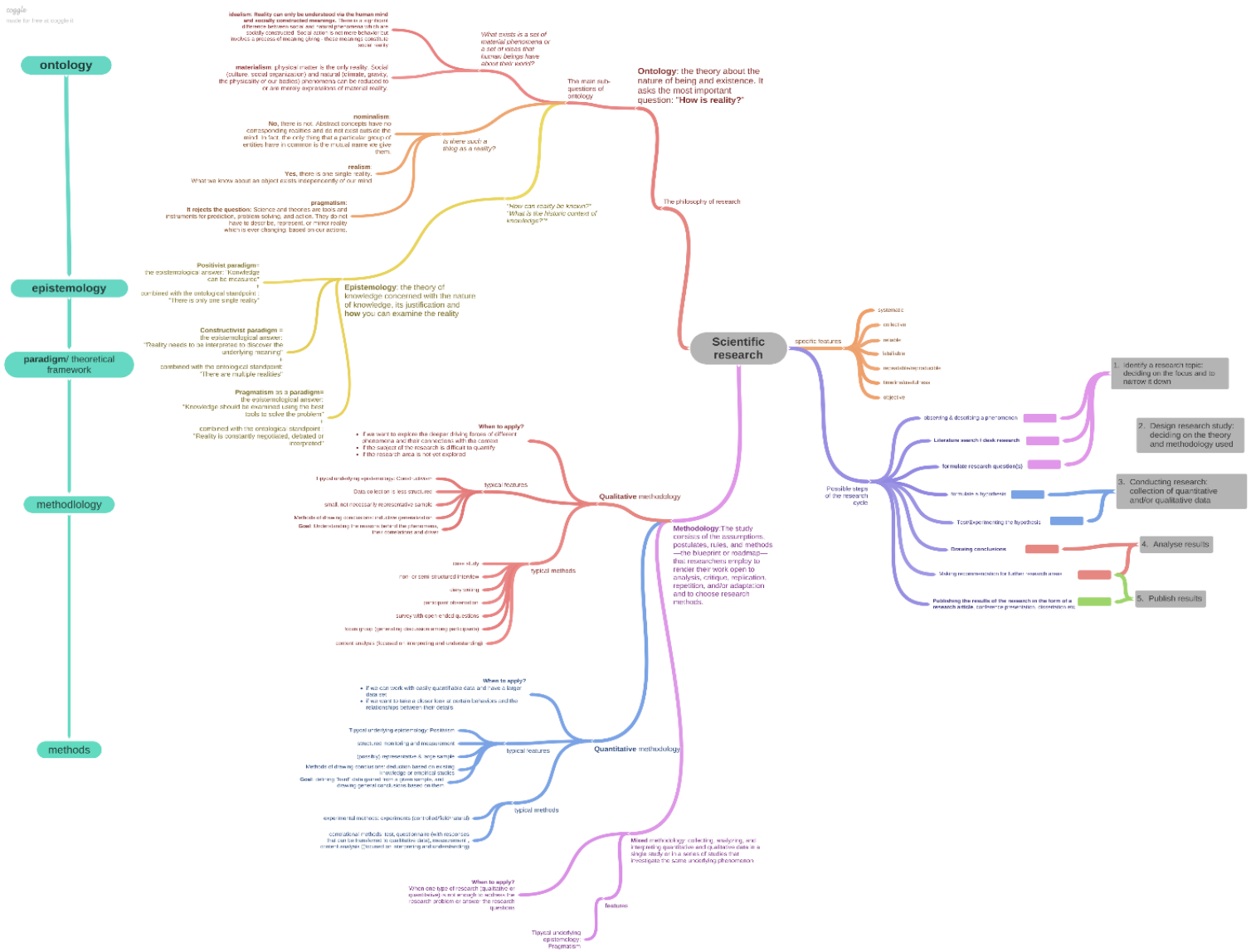
Annex 1. 1. B – A summary of main research-related terms

the Coogle mind map is available online at https://coggle.it/diagram/YCOvki31dzsfuK4c/t/scientific-research/ff072fa65164da7d1e87cee64918a1bb9a207483de86c69da060a0f4936faeee , it can be copied and further edited by users the png format file is available here: https://www.dropbox.com/s/yvi0uat8n4af9hp/Annex_1.1.B_Scientific_research.png?dl=0

Available online: https://coggle.it/diagram/YCOvki31dzsfuK4c/t/scientific-research

foRMAtion


ontology
epistemology
paradigm/ theoretical framework
methodology
methods
Ontology: the theory about the nature of being and existence. It asks the most important question: "How is reality?"
The main sub-questions of ontology
What exists is a set of material phenomena or a set of ideas that human beings have about their world?
idealism: Reality can only be understood via the human mind and socially constructed meanings.
materialism: physical matter is the only reality.
Is there such a thing as a reality?
nominalism:
No, there is not. Abstract concepts have no corresponding realities and do not exist outside the mind. In fact, the only thing that a particular group of entities have in common is the mutual name we give them.
realism:
Yes, there is one single reality.
What we know about an object exists independently of our mind
pragmatism:
It rejects the question: Science and theories are tools and instruments for prediction, problem solving, and action. They do not have to describe, represent, or mirror reality which is ever changing, based on our actions.
"How can reality be known?" "What is the historic context of knowledge?"
The philosophy of research
Epistemology: the theory of knowledge concerned with the nature of knowledge, its justification and how you can examine the reality
Positivist paradigm= the epistemological answer: 'Knowledge can be measured' + combined with the ontological standpoint: "There is only one single reality"
Constructivist paradigm = the epistemological answer: "Reality needs to be interpreted to discover the underlying 'meaning' + combined with the ontological standpoint: "There are multiple realities"
Pragmatism as a paradigm= the epistemological answer: "Knowledge should be examined using the best tools to solve the problem" + combined with the ontological standpoint: "Reality is constantly negotiated, debated or interpreted"
Scientific research
specific features
systematic
collective
reliable
falsifiable
reproducible/reproducible
transferable/full text
objective
Possible steps of the research cycle
describing & classifying a phenomenon
Literature search / desk research
formulate research question(s)
formulate a hypothesis
Test/Experimenting the hypothesis
Drawing conclusions
Making recommendation for further research areas
Publishing the results of the research in the form of a research article, conference presentation, dissertation etc.
1. identify a research topic: deciding on the focus and to narrow it down
2. Design research study: deciding on the theory and methodology used
3. Conducting research: collection of quantitative and/or qualitative data
4. Analyse results
5. Publish results
Qualitative methodology
When to apply?
If we want to explore the deeper driving forces of different phenomena and their connections with the context
If the subject of the research is difficult to quantify
If the research area is not yet explored
typical features
Typical underlying epistemology: Constructivism
Data collection is less structured
small, not necessarily representative sample
Methods of drawing conclusions: inductive generalization
Goal: Understanding the reasons behind the phenomena, their correlations and drivers
typical methods
case study
non- or semi structured interview
diary writing
participant observation
survey with open ended questions
focus group (generating discussions among participants)
content analysis (focused on interpreting and understanding)
Methodology: The study consists of the assumptions, postulates, rules, and methods —the blueprint or roadmap— that researchers employ to render their work open to analysis, critique, replication, repetition, and/or adaptation and to choose research methods.
Quantitative methodology
When to apply?
If we can work with easily quantifiable data and have a large data set
If we want to take a closer look at certain behaviors and the relationships between their details
Typical underlying epistemology: Positivism
structured, monitoring and measurement
(possibly) representative & large sample
Methods of drawing conclusions: deduction based on existing knowledge or empirical studies
Goal: deriving 'hard' data gained from a given sample, and drawing general conclusions based on them
typical features
typical methods
experimental methods: experiments (controlled/field/ natural)
correlational methods: tests, questionnaires (with responses that can be translated to quantitative data), measurement, content analysis (focused on interpreting and understanding)
Mixed methodology: collecting, analyzing, and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon
When to apply?
When one type of research (qualitative or quantitative) is not enough to address the research problem or answer the research questions
features
Typical underlying epistemology: Pragmatism

M1 - Lesson 2 – Introduction to research design, research methods and research life cycle

Learning outcomes to be developed:

- The student can distinguish and describe the types and specificities (aims, advantages, limits, appropriateness to certain disciplines) of main research methods that can be applied by different scientific areas (e.g. observation, survey, interview, focus group, experiments, etc).
- The student should understand the research project lifecycle.
- The student can identify the differences between a research design/plan and a research proposal.
- The student can apply the stages of the research project lifecycle to a research plan, identifying the key questions to answer at each stage.
- The student can recognise and integrate the motivations, expectations and role of a researcher.
- The student is able to construct logical arguments to present a research idea.
- The student is committed to find a balance between assertiveness and cooperation in the course of teamwork in research as a leader and as a team member.
- The student is open to perceive and accept the diversity of cultural and social contexts of research systems and practices.
- The student is open to different research methods and is committed to finding consensus in an interdisciplinary research setting.

Legend for the use of lesson plans: Grey texts describe useful but optional activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**
a) Playful activity enhancing recalling prior knowledge: **Wordcloud** (https://www.mentimeter.com/)**:** "Answer the following question by typing single words at this link, indicating the following code: ...."		5 mins

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The content of the questions will be related to the curriculum, e. g. What are the goals/main features/of science? What are the distinctive features of natural science/human and social research etc.? *They can refer to the following terms and concepts: science, inductive and deductive inference, experiments, observation* **b) 10 minutes long frontal presentation by the teacher:** • goal: Provide a short summary of the first lesson, laying the foundations for research methods, a brief explanation of the theoretical framework, and the main terms such as 1. research question 2. hypothesis 3. literature review 4. qualitative data 5. quantitative data 6. Survey Research 7. Discourse analysis 8. Mixed-methods 9. experimental method		10 mins
c) Activities helping the understanding of theoretical knowledge ○ Online option with Padlet (advantage: the result can be downloaded and saved as a graph). See a guide for the use of Padlet in Annex 4. 4., but now please select the "Canvas" template ○ The name of each concept is distributed among pairs of students ○ they have to work together on Padlet (https://padlet.com/) ○ A sample Padlet board is already elaborated for this task, see this link: https://padlet.com/vinczelidia/xrwpcamo84926xwz ○ Teachers are asked to not use this one but sign in and then choose the "Remake" option thus using the copy in their lesson. ○ Pairs of students have to find	Peer grading (giving points to each other) as the group members work together. Providing the correct specificities of the research methods. Suggestion for grading: 10 points maximum for the infographic (the group members	35 mins

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- the (green) card showing examples of the different concepts/terms
- and the yellow cards presenting the definition of the given term.

- They have to drag and drop their term, its definition and the example close to each other.
- Offline option: printing the texts and giving them to the pairs of students who stick them on the relevant cell drawn on the whiteboard as follows:

term	definition	example

- Teacher's questions:
  - What can be the risks and advantages of the survey method?
  - Tell me examples of disciplines which may rely strongly on discourse analysis.
  - Which is the science the typical method of which is experimenting?
  - How would you start a literature review?
- Teachers' short presentation on literature search indicating the most important databases that are free and available for the students of the given university (Web of Science, EBSCO Academic Search Complete, Sage Journals - Social Sciences & Humanities, Scopus, ScienceDirect etc.)
- The teacher continues the compilation of the common mind map on the discussed topics (by using Coggle (http://coggle.it/): the mind map summarizing the content of the 1st Lesson and compiled by the teacher in Lesson 1 will be further elaborated in the course of the whole Module.

receive the same number of points)

---

5 mins

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d) **Watching a video about the required features of an adequate research question** https://www.youtube.com/watch?v=71-GucBaM8U&feature=emb_logo (Alternatively, the text is available as well at this link https://www.scribbr.com/research-process/research-questions/ but in this case, students may find the answers to the questions below. Group work: Which of the research questions is more adequate and what can be the problem with the wrong one? The pairs of students answer the questions by filling in a table together and submitting them through the shared online interface. The worksheet is available in Annex 1. 2. B Source and answers for the questions: https://www.scribbr.com/research-process/research-question-examples/	0-5 points/ student, based on the right answers. Extra 1-5 points can be given in the case of active and correct answers regarding the errors in the questions	10 mins

e) First steps of PBL encompassing Lessons #2-4: discussing the main and the sub-topic of a research idea. Groups of 2 students can work together - a possible project can be that they are given one main problem, and 4 aspects (political, economic, legal and psychological), they report to the group and the entire picture can be achieved by that → mindmap on the whole topic
Ideas for pre-defined real problems:
• the impact of the Covid-19 pandemic
  ○ economic challenges
  ○ impact on education
  ○ impact on the health care system
  ○ impact on the labour market, jobs
  ○ impact on consumption (webshops)
  ○ impact on international trade relations
  ○ impact on inter-state relations
  ○ impact on EU (possible solutions, future of EU, budget)
  ○ impact on the global powers (geopolitics)
  ○ legal aspects (restrictive measures, governance)
• climate change
		20 min

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○ economic challenges ○ energy market, energy policy ○ social impact ○ impact on health care ○ EU - policies, priorities, initiatives ○ agriculture ○ innovation ○ green deal - political sphere ○ migration policy ○ automobile industry • ageing society ○ impact on the economy ○ health care / social security system ○ society (generations) ○ labour market • migration ○ health care / social security system ○ labour market ○ EU level: policies, politics, member states - political parties ○ education • artificial intelligence ○ labour market ○ ethical issues ○ legal questions ○ economy ○ innovation		
• From pre-defined real problems (for example ageing research community, one of the consequences of which is that the emphasis in (financial) management is shifted; generational tensions; coronavirus and the digital revolution - new solutions in the workplace, social relations, entertainment, the rearrangement of the education); the class can choose one main topic	0-5 points	

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○ within which teams of 2 will define research narrower sub-topics (such as financial, environmental, psychological etc. consequences) ○ students make notes on the online interface shared with each other and the teacher. f) Introduction of the Template for Research Plan Outline (See Annex 1. 2. A) by the teacher on the base of which they will develop their plans		5 mins
g) **Quick wrap-up by the teacher and end-of-lesson feedback from the students** f. **Exit ticket:** Each student gives a brief answer to the questions (preferably by an online form): • What did you like in this lesson and why? • What was difficult for you and why? g. Homework: Teachers send notifications about the compositions of the groups and send the description of the group homework. A possible example for the homework description: *"Your task until the next class is to compile a bibliography of min. 10 scientific journal articles (per group) that seem interesting and relevant to you within your topics. While browsing the databases for studies, you may find problems, questions and phenomena that seem interesting and/or popular to you. Now, you can include each of them in your bibliography, and you will further narrow down your questions in the next class. The more references you collect, the easier the choice will be.* *Please work on a document edited jointly with your group members. As mentioned in the class, these topics need to be narrowed down (according to your interest) until you find 1 or 2 research questions. Please collaborate within your working group during these days and think about the following questions:* • *What problems, questions and phenomena are you most interested in personally?* • *And/or: What are the most discussed hot topics in scientific and policy discourse?"*	10 points/student	*5 minutes*

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If anyone has a suggestion for a research topic/question, it's worth sharing it with the group members so you can discuss it."		

Additional resources for the teacher:

Research question:

- https://methods.sagepub.com/book/social-research-methods
- https://methods.sagepub.com/base/download/BookChapter/social-research-methods/n6.xml

Research theories

https://methods.sagepub.com/base/download/BookChapter/social-research-methods/n2.xml

Research proposals

https://www.yorksj.ac.uk/study/postgraduate/research/apply/examples-of-research-proposals/

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Annex 1. 2. A – Template for Outlining a Research Plan

Template for Outlining a Research Plan

1. Name: _____
2. Grade: _____
3. The working title of the research:

4. Area of research

What science does your research belong to? Within it, is there any special sub-field where it can be categorized?

5. Literature review[2]:

A possible way to your start your literature review is by using the databases of the Library (EBSCO, Web of Science, etc). First, make a list of the main 3-4 expressions related to your topic, then search for each of them in the following way

- Type the given expression in the "Basic Search" field of the main page of the site
- In the Timespan menu, set the period so that you get results from the last 15 years (by choosing the "Custom year range" option)
- Sort the results by "Times cited" (you can set it in the top menu of the results page) so that the most cited ones will be on the top of the list of records
- Choose 4-5 relevant articles, and on the base of their introduction, you will get the necessary information for the questions below.

On the base of the introduction of at least 3 relevant studies, summarize the following: What have others said about this topic? What previous research exists? What are their main conclusions?

[2] Besides the necessary bibliographical data, the short summary of the chosen piece of literature is needed, with a reference to its relevance to the research topic.

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6. Research question(s) and its/their relevance

Within it, what exactly do you want to study? Why is this area worth studying?

7. Hypotheses/expected results

8. Methods to apply:

What/who are the subjects for your study? Whom or what will you study to collect data? How and what kind of data/information will you collect?

9. Schedule

What will be the main stages of your research and when are they planned to be implemented?
Total duration: ….. months/weeks?

Phase #1: Main goals: …… Duration:
……
Phase #2: Main goals: …… Duration:
……

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Phase #3: Main goals: ..... Duration: .....

Phase #4: Main goals: ..... Duration: .....

Phase #5: Main goals: ..... Duration: .....

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Annex 1. 2. B – Research question examples

Source and answers for the questions: https://www.scribbr.com/research-process/research-question-examples/

Task: Underline the adequate research questions in the list below. What can be the problem with the one which is not good?

Research questions
1. What effect does social media have on people's minds? 2. What effect does daily use of Twitter have on the attention span of under-16s? 3. Why is there a housing crisis in the Netherlands? 4. What impact have university internationalisation policies had on the availability and affordability of housing in the Netherlands? 5. Does the US or the UK have a better healthcare system? 6. How do the US and the UK compare in health outcomes and patient satisfaction among low-income people with chronic illnesses? 7. What should political parties do about low voter turnout in region X? 8. What are the most effective communication strategies for increasing voter turnout among under-30s in region X? 9. Has there been an increase in homelessness in San Francisco in the past ten years? 10. How have economic, political and social factors affected patterns of homelessness in San Francisco over the past ten years? 11. What factors led to women gaining the right to vote in the UK in 1918? 12. How did Irish women perceive and relate to the British women's suffrage movement?

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13. How can sexual health services and LGBT support services in district X be improved?
14. How can sexual health clinics in district X develop their services and communications to be more LGBT-inclusive?
15. Where do the majority of immigrants to Germany come from?
16. What are the similarities and differences in the experiences of recent Turkish, Polish and Syrian immigrants in Berlin?
17. How is race represented in Shakespeare's Othello?
18. How have modern adaptations of Shakespeare's Othello dealt with the theme of racism through casting, staging and allusion to contemporary events?
19. How can drunk driving be prevented?
20. What effect do different legal approaches have on the number of people who drive after drinking in European countries?

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Annex 1. 2. C – Literature search handout

available at this link as well:

https://www.dropbox.com/s/jpahi5ws1ts8suj/Literature%20search%20handout.pdf?dl=0

	Steps	Example
1.	**Define your research question(s)**: First, brainstorm and collect more questions that seem to be relevant, concrete and feasible for you (in the case of a real research study, it has to be gap-filling, adding something new to the already published research results). This may be changed during your research!	How did Irish women perceive and relate to the British women's suffrage movement?
2.	Identifying your **keywords** of the question (this should be expanded continuously): ○ synonyms in the articles, titles, bibliography of the article ○ keywords indicated in relevant studies you found ○ thesauri (e. g. https://www.thesaurus.com/) ○ EBSCO Subject terms	**main key term:** women's suffrage **synonyms, connected/broader terms:** feminism, Britain, women's rights, voting, rights of women, right to vote, right of representation, womanism, suffragism
3.	**(optional: compiling a conceptual network** for your concept – illustrating the relation of the concept with each other)	see an example here
4.	Search in the databases available is usually free of charge in the university area and network. Start at the university library's homepage where you find a list of databases; many of them are discipline-specific ones. ○ Google Scholar ○ EBSCO Academic Search Complete ○ Sage Journals - Social Sciences & Humanities ○ Web of Science ○ Scopus	see the short video in the group folder on how to do it

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Search techniques

1. **The Boolean search (in most databases and Google)**

Always use quotation marks ("…") when you search for an expression including more than one word

women AND suffrage AND Britain	**Using AND will narrow the search by ensuring material retrieved covers both phrases.**
"women's suffrage" NOT "United States"	Using **NOT** will narrow a search on transferable skills alone by excluding any information that discusses US Women's suffrage movements.
suffrage OR "voting right"	Using **OR** will broaden a search on suffrage by including matches on the synonym ability.

Further info and test: Boolean search tutorial

2. **Truncation**

It is useful when searching for terms that can be reduced to a common stem and used with different endings. E. g. feminis* (to find feminist, feminism, feministic)

3. **wildcard**

It makes it possible to replace none, one or more letters within a word by using a question mark (?), e. g. using *wom?n* ensures that you find articles including both „woman" and „women".

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Annex 1. 2. D – Differences between qualitative and quantitative research methodology

Work in a shared online document or virtual whiteboard. Assign each student a colour, and ask them to find the position in the table of the statements written in the given colour

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Statements (formattable)

	Qualitative approach	Quantitative approach
Underlying epistemological system of approach	Relativism (constructivism)	Positivism paradigm
Goal	Understanding the reasons behind the phenomena, their correlations and drivers	defining the data gained from a given sample, and drawing general conclusions based on them
Starting point / first steps of the research activities	- open-ended questions, possibly broad, less specific hypotheses; - the questions and categories that arise during the research are especially valuable	- a confirmation of some specific hypothesis - pre-recorded, well-defined variables and categories
Sample	small, not necessarily representative sample	for generalizability (possibly, but not exclusively) a representative, large sample
Data collection applied methods	- not structured - typical methods: case study, in-depth interview, participant observation, diary writing, text analysis, ethnography, focus group discussion	- structured monitoring and measurement; - defines the variables in a measurable form - the methods used can be divided into 2 types: a) experimental methods b) correlation methods (tests, questionnaires, measurement scales, structured observation, structured interview)
Data analysis	mainly qualitative analysis of variables, although the possibility of any analysis of quantitative data is not excluded from the research	statistical analyses
Methods of drawing conclusions	inductive generalization	deduction based on existing knowledge or empirical studies

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	Qualitative approach	Quantitative approach
Results	- understanding the initial problem; - the tone of the publication is more personal; - conclusions typically appear in the form of narrative descriptions and interpretations	- formulation of proposals for further research; - the results of the research are often shared in the form of publications with a bound formal and content structure
When to apply?	- if we want to explore the deeper driving forces of different phenomena and their connections with the context - if the subject of the research is difficult to quantify - if the research area is not yet explored	- if we can work with easily quantifiable data and have a larger data set - if we want to take a closer look at certain behaviours and the relationships between their details

Further readings for teachers

Aveyard, H. (2014). *Doing a literature review in health and social care: A practical guide*. Open University Press.

Gough, D., Oliver, S. & Thomas, J. (2017). Introducing systematic reviews. In *An introduction to systematic reviews* (3rd ed). Sage Publications Ltd.

An article describing further search techniques: https://www.open.ac.uk/library/help-and-support/advanced-search-techniques

EBSCO simple search https://www.youtube.com/watch?v=N_jdAA4uRiY

EBSCO advanced search https://www.youtube.com/watch?v=n7-HO19Xxb0

Video made for the current course is available here

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M1 - Lesson 3 – Research integrity and ethical conduct

Learning outcomes to be developed:

- The student should understand the research project lifecycle and the role of RMAs within it.
- The students can discuss, formulate arguments and critically examine their beliefs in the context of real cases of scientific integrity, responsible research, and ethical dilemmas that can emerge in the course of a research work project.
- The student is open to perceive and accept the diversity of cultural and social contexts of research systems and practices.

Legend for the use of lesson plans: Grey texts describe useful but optional activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**
a) Short feedback on the homework and a short revision of the main points, and key terms of the previous lesson • Summary of findings, challenges, and good practices. • Kahoot test (after registering, at Kahoot (https://create.kahoot.it/auth/login) homepage, you can create easily games helping assessment here (https://create.kahoot.it/auth/login?next=%2Fcreator)) multiple-choice or true-or-false questions *The content of the questions will be related to the curriculum, e. g. What are the characteristics of a given research method? etc.*	*As this is a playful type of test but is a test anyway,* ***students have to be informed about it (points, topics, time frame) in advance****.* *Results (scores) should be counted into the end-of-semester grade.*	**5 mins** **5 mins** **25 mins**

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c) Presentation of a real and famous research ethics dilemma (5 mins) & some basic rules of the dispute (Milgram, Philip Zimbardo, Laud Humphrey: description of the cases: Babbie, E (2010). *The practice of social research*. Wadsworth Cengage Learning. pp. 3-10. ISBN-13: 978-0-495-59841-1 http://ccftp.scu.edu.cn/Download/e6e50387-38f2-4309-af84-f4ceeefa5baa.pdf) • group formation on the base of individual opinions, and collecting arguments (5 mins) • group level **debate** when the group is represented by one of the members, in rotation (10 mins) Methodological guide for the teacher on how to manage a debate in the class: https://www.teachhub.com/classroom-activities/2016/03/classroom-activities-how-to-hold-a-classroom-debate/ • the real solution to the problem is summarized by the teacher (5 mins)	*Optionally can be awarded extra points.*	**20 mins**
d) Presentation by the teacher: Research Ethics (20 mins)	*Optionally can be awarded extra points.*	**25 mins**
e) A new round of debate with a new problem, where students have to apply the arguments, approach and methods included in the teacher's presentation (the structure is the same as in the first case) (25 mins) Source: z • Everyday type of case studies for students in the university environment, with short descriptions and solutions - special field: physics https://www.aps.org/programs/education/ethics/upload/Ethics-Case-Studies-Teacher-Edition.pdf • Case studies for researchers in the academic environment, with short descriptions and solutions - special field: social sciences https://methods.sagepub.com/book/case-studies-ethics-in-academic-research-in-social-sciences Suggested topics among the examples included in the publication: plagiarism, conflict of interest or acquisition of data	*0-10 points/student*	**15 mins**
f) PBL tasks		

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Research plan (15 mins): • the groups give a short report on their research focus in class • they present their list of literature • they formulate a broader list of possible research questions (6-8) • Formulating hypotheses **Homework**: • continuing literature review, • selection and/or fine-tuning of one research question, formulating arguments supporting the selection		

Readings for the teacher providing examples for the exercises

- Everyday type of case studies for students in the university environment, with short descriptions and solutions - special field: physics https://www.aps.org/programs/education/ethics/upload/Ethics-Case-Studies-Teacher-Edition.pdf
- Everyday type of case studies for researchers in the academic environment, with short descriptions and solutions - special field: social sciences https://methods.sagepub.com/book/case-studies-ethics-in-academic-research-in-social-sciences
- Case study exercises

  https://www.unodc.org/e4j/en/integrity-ethics/module-14/exercises/a-case-studies.html

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M1 - Lesson 4 – RMAs as professionals at the interface of science

Learning outcomes to be developed:

- The student should understand the research project lifecycle and the role of RMAs within the research cycle.
- The student can recognise and integrate the motivations, expectations and role of a researcher, and other professions linked to the research activity.
- The student can predict the needs for research interface activities along the research project lifecycle and identify key RMA roles (e.g. Funding Advisory, Project Manager, Science Communicator).
- The student is committed to finding a balance between assertiveness and cooperation in the course of teamwork in research as a leader and as a team member.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**
a) Conversion enhancing recalling the experiences of the first lesson • What do we know about the RMA profession? • Listening to the interview, what were your impressions, and what are the things that the expert enjoys in his work? • What were his challenges? **b) Teacher's presentation** (See Annex 1. 4. A Teacher's presentation) on the development of the RMA profession**,** on the base of Lesson 4 and the study of Kerridge and Scott (2018), using questions activating students' prior knowledge and ideas: • What can be the factors in the last two decades that increase the need for their involvement in research? • What kind of challenges does RMAs might face?		5 mins 10 min

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• What can be the levels of the RMA profession? • What do you think, which are the countries where the profession has been known and accepted? What can be the reasons? c) **Class activity - the roles and tasks of RMAs** Introductory questions related to the project cycles: - Which of the steps are inevitable/indispensable? - Which are essential? Which are connected to specific areas/paradigms? - Which is the platform for publishing/presenting the newest research results for the scientific community? - An example: https://journals.sagepub.com/home/jom **Classroom assignment:** Students find the place of the different roles and tasks of RMAs in the different project lifecycle stages. • Every student gets a piece of paper with one of the roles/tasks listed in Annex 1. 4. B (in the case of online learning: students receive the roles in a table where they find a term describing a role besides their name and they fill in the table in the form of a Padlet exercise. Annex 1. 2. A – How to use Padlet as an online classroom whiteboard?) • The teacher draws a half-empty table on the board (using the BESTPRAC RSS Framework (http://www.bestprac-wiki.eu/Tasks#Before_the_Proposal_.28A.29) and see Annex 1. 4. B below) • Students stick their pieces of paper in the relevant cell of the table • The class discusses the results • Wrap-up and feedback from the teacher (Alternatively, it can be accomplished by using a virtual whiteboard app, or a drag-and-drop exercise can be created in Moodle applying HSP activity.) d) **Introducing the genre of "elevator pitch"** Collecting answers		10 mins 5 mins

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- what makes a presentation effective, and enjoyable? Good practices and pitfalls (the visual appearance of the ppt, presentation mode (body language, tone, eye contact), the structure of the content, etc.) - Oral and written completion and summary by the teacher: general guidelines for presentations e) **Watching 3-4 elevator pitches (videos) -** see the link to 6 videos in Annex 1. 4. C • What can be the purpose of such speeches? • What can be the situations where they are applied? • What are the differences between an elevator pitch and a presentation? • Alternative element: The teacher invites a (science) communication expert who completes the conclusions and gives general and practical advice about the genre - emphasizing the function and the importance of the elevator pitch • Or: Presentation and wrap-up by the teacher: completion of the answers, general guidelines for presentations – presentation is available in Annex 1. 4. D • A tip for a wrap-up: summary of the main features of the elevator pitch in the form of an elevator pitch of 60 seconds, with the following key message: "We have to be ready to make people excited about our important messages." Sources, templates or and infographics for the elevator pitch are in the Annexes below and the references indicated in this lesson. **f) PBL situational game** Work in pairs - practising elevator pitches. Students can use the sources used in Lesson 4 and the information gained in the classroom work **Situation**: The student is an RMA (or researcher) who recognizes that their institution should open an RMA position and he has to convince the management of his university about the necessity and the importance of this investment. Students are working in pairs.	*Optionally can be awarded extra points.* Evaluating pitches: - the teacher can give them a rating on a 1-10-point scale - if an external observer is invited, (s)he can give them points on a 1-10-point scale - students give their peers points using a 1-5-points scale	5 min 15 min 20 mins: • instructions: 5 min • Individual work: 5 min • Work in pairs/breakout rooms: 7 min (1 pitch+ oral evaluation) • Coming back & upload: 2-3 min

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1. Individual work: compile an outline for an elevator pitch, keeping in mind the criteria included in the evaluation form (Annex 1. 4. C) - individual work 2. Pair work: students perform it to each other and record each other's speech on the camera of their cellphone 3. They upload videos to Moodle or send them to the teacher by email. 4. Classroom activity: 2 volunteering students show their video to the class; They are discussed and evaluated publicly by the teacher and the students (and the expert if he is invited). (In the case of these videos, the teacher may need written consent from students for the use of the material within the class work so please follow the institution's regulation regarding this question.) 5. Short feedback and evaluation by the teacher 6. The teacher (and the invited observer) evaluates the rest of the pitches for the next week 7. Homework: students evaluate their peer's pitch at home, using the evaluation form (Annex 1. 4. C)	0-10 points/per person 0-25 points	20 mins
g) PBL task: the groups prepare the first draft of their research plan: • conclusions of the literature review, • selecting research questions • selecting research methods • setting goals and a timetable **Homework**: • Preparation for the elevator pitches presenting the research plans. The team members have to cooperate regarding the contents. The recommended way of sharing the work among the pairs of students is the following 1. in each pair, student "A" reports on the ▪ background, ▪ public benefits ▪ the conclusions of the literature published so far regarding the planned research activity ▪ research question	0-10 points 0-10 points	

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2. student "B" reports on the ▪ hypothesis ▪ methods to apply with explanation and supporting arguments ▪ planned dissemination activities The optional task for extra points: the pairs prepare infographics/ppt for their projects **Optional/Alternative homework** Let's imagine that each group of students is a team within an institution, who recognize that their institution should open an RMA position. The task of the group is to compile a job announcement. Background material to be used for the task: ARMA's Professional Development Framework for Research Managers and Administrators, p. 4-8 ○ For this, they have to assemble the competences/tasks of an RMA (educational background, competences, skills, knowledge). ○ Students read and use the text of Lesson 4 for this task ○ After the groups upload the result of their work, the teacher projects them, and the groups evaluate/compare each other's announcements ○ the teacher summarizes and completes them by referring to the results of the previous research.		

Sources for the teacher that can be optionally used in the classwork as well

Guides & examples on the method of an elevator pitch:

- https://felician.edu/wp-content/uploads/2019/10/tough-interview-questions.pdf
- https://www.atlassian.com/team-playbook/plays/elevator-pitch
- https://www.cmu.edu/career/documents/quick-tips/elevator-pitch.pdf
- https://onlinebusiness.northeastern.edu/master-of-business-administration-mba/knowledge/elevator-pitch-guide/pitch-examples/

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Annex 1. 4. A – Presentation for the lesson

see the ppt file at this link: https://drive.google.com/file/d/1u-r3jgzXKAYs1rNTOqRI24FW6rnGPXQg/view?usp=share_link

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foRMAtion

Different roles that an RMA can play?

- Communicator + Facilitator - reseachers - academia - industry
- Solve a problem: rules / elegibility / project management
- grant reviewing: scope Vs. tasks
- Look for funding opportunities
- Gather/ organize / Provide information
- Ethics consultant

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foRMAtion

Based on Association of RMA (ARMA) Professional Development Framework

Developing proposals

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foRMAtion

Based on Association of RMA (ARMA) Professional Development Framework

Project Lifetime

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foRMAtion

Based on Association of RMA (ARMA) Professional Development Framework

Translation

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foRMAtion

Based on Association of RMA (ARMA) Professional Development Framework

Postgraduate researchers

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foRMAtion

Based on Association of RMA (ARMA) Professional Development Framework

Policy and Governance

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foRMAtion

Based on Association of RMA (ARMA) Professional Development Framework

Management information and related functions

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foRMAtion

Based on Association of RMA (ARMA) Professional Development Framework

Service organisation and delivery

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foRMAtion

RMA: a career in progress

Is the need for RMA professionals new?

Increasing need for RMA in the R&I ecosystem in the past few decades

Is the RMA a recognized profession all over Europe?

Professionalization in different rhythms and speeds

What are the boundaries of this profession?

Research support activities - Professionals at the Interface of Science

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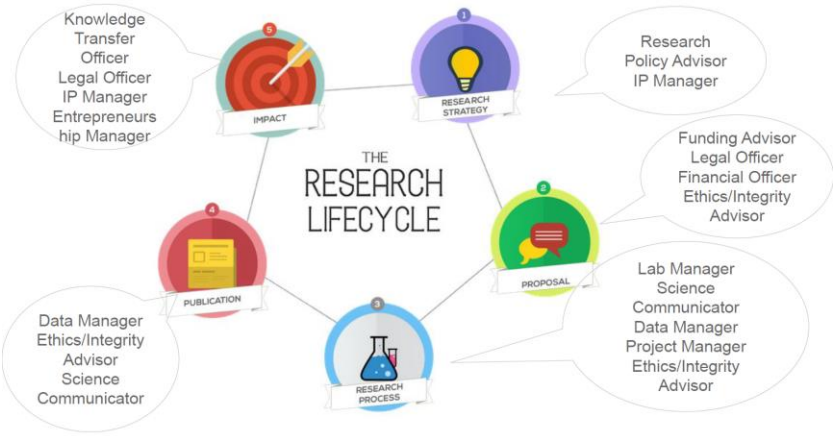

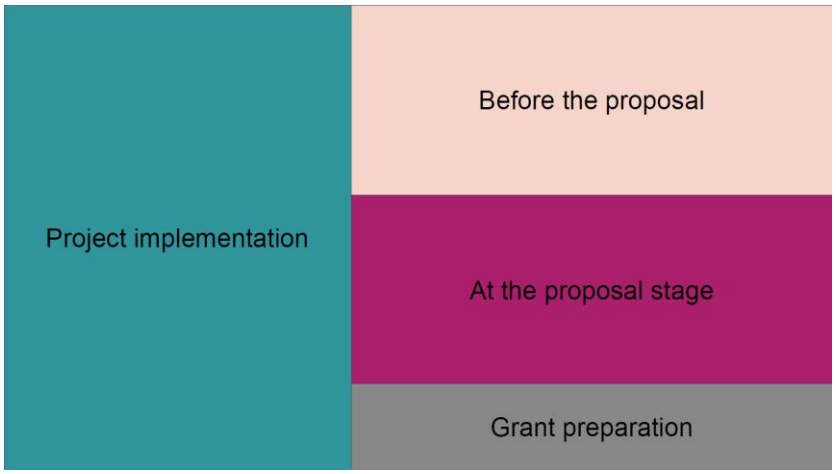

foRMAtion

Let's work!

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[Teacher's presentation on the development of the RMA profession]

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Annex 1. 4. B – The roles and tasks of RMAs

Source: BESTPRAC RSS Framework (http://www.bestprac-wiki.eu/Tasks#Before_the_Proposal_.28A.29)

List of tasks to be distributed for students:
- Identifying funding opportunities (finding)
- Disseminating funding
- Advising
- Training
- Gathering non-public information
- Quantitative and qualitative analysis of EU funding and organisational participation
- Providing general information and support regarding proposal submission
- Facilitating and setting up internal approval and signature process
- Providing budget notes and explaining + enforcing internal budget rules
- Advise on the execution of the writing process and consortium formation and management
- Advise on the content to be written (vs writing process)
- General advising on legal aspects and providing organisational legal documents
- Linking to information or advising on IP, ethics, open access and open data
- Statistics and analysis
- Facilitating the signature of the grant agreement
- Facilitating the internal setup of the project
- Internal and external communication strategies
- Reviewing and discussing the GA and the grant preparation with the PI
- Facilitating the consortium agreement and handling related issues
- Communicating project success (internal and external)- Supporting financial and technical reporting
- Consortium management
- Communicating internal procedures
- Functioning as a helpdesk and providing administrative support
- Contracts management and archiving
- Support for amendments to the Grant Agreement and Consortium Agreement

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Half-empty table to draw on the board:

Research lifecycle stage	**RMA tasks and roles**
Before the proposal	
Proposal	
Grant preparation	

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Project	

Solution:

Research lifecycle stage	Before the proposal	Proposal	Grant preparation	Project
RMA tasks and roles	1. Identifying funding opportunities (finding) 2. Disseminating funding 3. Advising 4. Training 5. Gathering non-public information 6. Quantitative and qualitative analysis of EU funding and organisational participation	1. Providing general information and support regarding proposal submission 2. Facilitating and setting up of internal approval and signature process 3. Providing budget notes and explaining + enforcing internal budget rules 4. Advise on the execution of the writing process and consortium formation and management 5. Advise on the content to be written (vs writing process) 6. General advising on legal aspects and providing organisational legal documents 7. Linking to information or advising on IP, ethics, open access and open data 8. Statistics and analysis	1. Facilitating the signature of the grant agreement 2. Facilitating the internal setup of the project 3. Internal and external communication strategies 4. Reviewing and discussing the GA and the grant preparation with the PI 5. Facilitating the consortium agreement and handling related issues 6. Communicating project success (internal and external)-	1. Supporting financial and technical reporting 2. Consortium management 3. Communicating internal procedures 4. Functioning as a helpdesk and providing administrative support 5. Contracts management and archiving 6. Support for amendments of the Grant Agreement and Consortium Agreement

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Annex 1. 4. C – Examples of the elevator pitch and evaluation table

Examples of elevator pitch videos:

1. Connecting two problems to find a common solution: Youth unemployment and mass termination of SMEs https://www.youtube.com/watch?v=gXwewPgLmkE
2. Women users' needs in technology https://www.youtube.com/watch?v=dqIEE-g_-Uc
3. CEO of Podio, a platform for work connections (First 1 minute): https://www.youtube.com/watch?v=UBNJh2rOOlI
4. Leader and founder of Pitch Academy (first 20 seconds): https://pitch-professionals-academy.teachable.com/p/pitch-to-win-investment-and-resources/?product_id=909872&coupon_code=XSO60
5. Mamma, I want to write - ghost writers https://www.youtube.com/watch?v=U0_NYHT9f50
6. Mission and values behind a Coffee Shop https://www.youtube.com/watch?v=4CgkXZmqINE

Background resources about elevator pitches:

- https://www.indeed.com/career-advice/career-development/perfect-elevator-pitch
- https://elevatorpitchgenerator.com/
- https://hbr.org/2014/12/your-elevator-pitch-needs-an-elevator-pitch
- https://www.valuer.ai/blog/why-your-elevator-pitch-sucks
- https://www.atlassian.com/team-playbook/plays/elevator-pitch
- https://www.cmu.edu/career/documents/quick-tips/elevator-pitch.pdf
- https://onlinebusiness.northeastern.edu/master-of-business-administration-mba/knowledge/elevator-pitch-guide/pitch-examples/

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Evaluation table [3]

Evaluation table for the elevator pitch				
		Number of points given by		
		peer student 0-5	observer 0-10	teacher 0-10
1.	Style and performance: Is the style in line with the interest and the language of the audience? Will they find it catchy/attractive?			
2.	Language: Is the text coherent, linguistically correct, and easy to follow?			
3.	Arguments: How convincing and effective are the selected arguments and the overall pitch?			
4.	Content: Does it contain relevant, necessary and sufficiently detailed information (not too much, not too little)?			
5.	Duration: Did the presenter keep the time limit?			
	Sub-total			
	Total			

[3] We recommend that instead of using these criteria tables without changes, **adapt them** to the actual needs and requirements of the course/programme, and define the evaluation requirements according to student needs: Ask them: "*When being evaluated, in what areas would it help you to get feedback*?"

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Annex 1. 4. D – Presentation slides – the elevator pitch

Available at this link:

https://www.dropbox.com/s/5l4kon4jb3dbuy9/Pitch_presentation.pptx?dl=0

1

2

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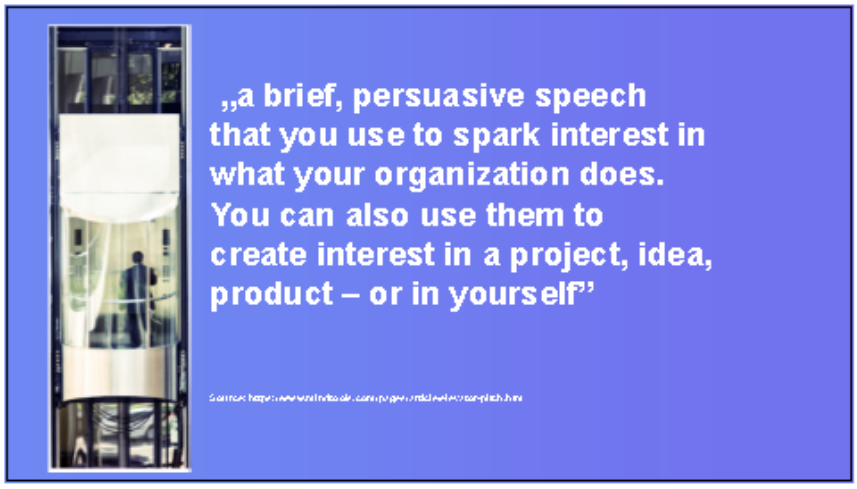

3

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Examples

1. https://www.youtube.com/watch?v=gXwewPgLmkE from 0:10
2. https://www.youtube.com/watch?v=dqIEE-g_-Uc
3. A product: https://www.youtube.com/watch?v=UBNJh2rOOII
4. (first 20 seconds): https://pitch-professionals-academy.teachable.com/p/pitch-to-win-investment-and-resources/?product_id=909872&coupon_code=XSO60
5. Action research in Bangladesh https://www.youtube.com/watch?v=OtePt5nBeYk
6. https://www.youtube.com/watch?v=UO_NYHT9f50
7. Research pitch https://www.youtube.com/watch?v=Z_qvFjAT5vY
8. Brokerage event pitch https://vimeo.com/463406650 from 2:06:02

5

HOW IS IT?

30-90 seconds
convincing
emotional
unique: striking / catchy

6

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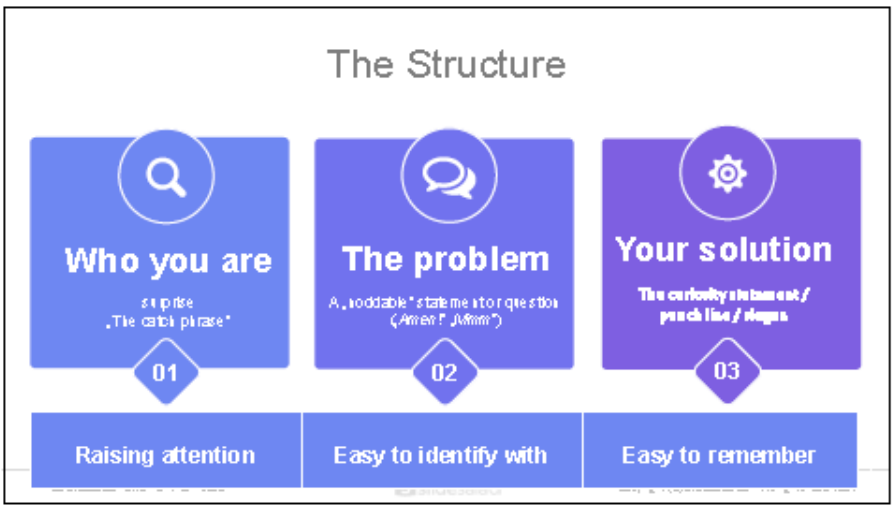

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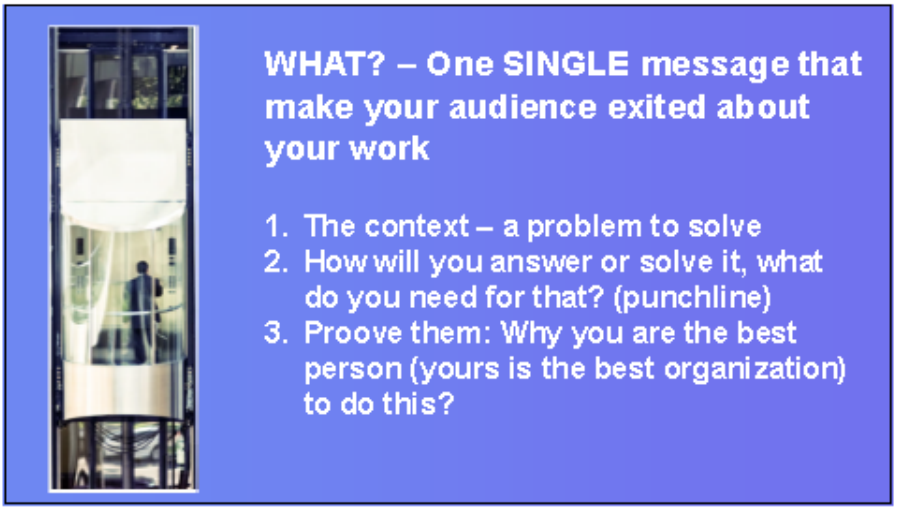

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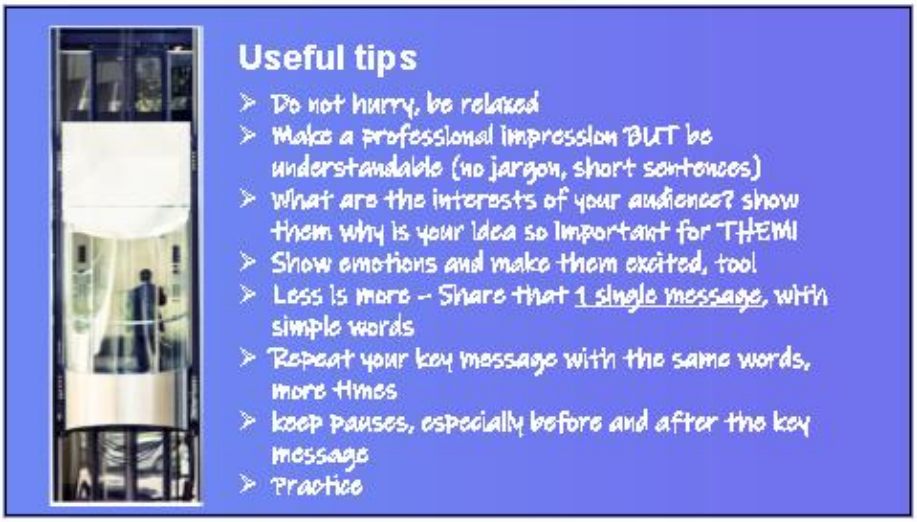
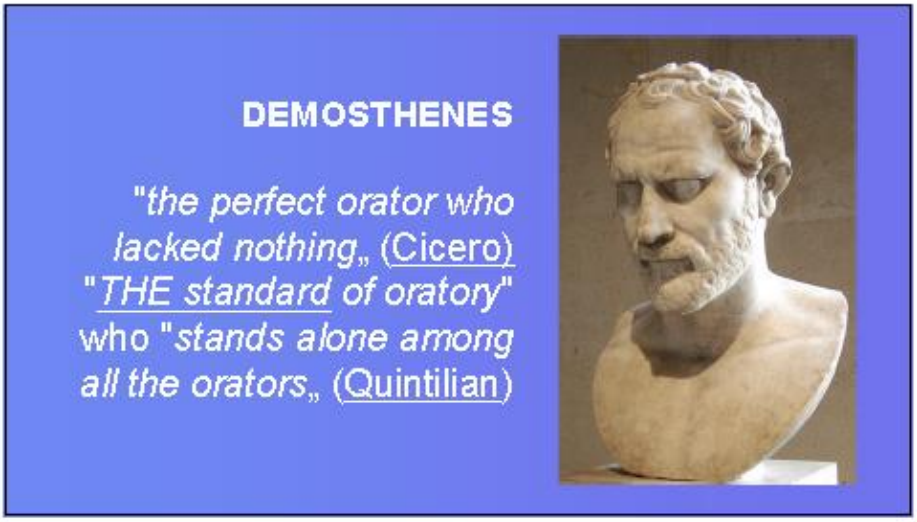


9



10

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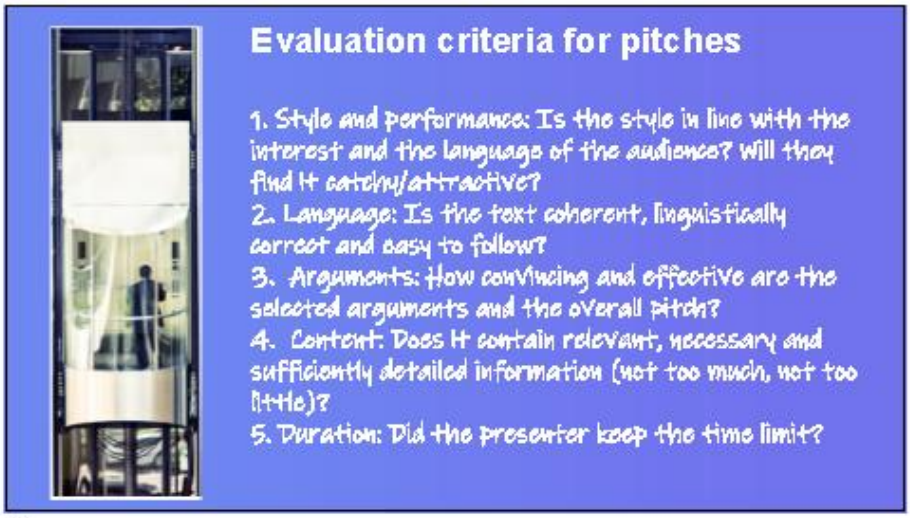
11



12

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M1 - Lesson 5 – Present and discuss a research plan

Learning outcomes to be developed:

- The student can apply the stages of the research project life cycle to a research plan, identifying the key questions to answer at each stage.
- The student can predict the needs for research interface activities along the research project lifecycle and identify key RMA roles (e.g. Funding Advisor, Project Manager, Science Communicator).
- The student is committed to find a balance between assertiveness and cooperation in the course of teamwork in research as a leader and as a team member.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**
Reporting on research plans: • Pairs of students present their research plan in the frame of an international webinar • An RMA or communication expert is invited to the class, introduces him-/herself (in the form of an elevator pitch) and provides professional feedback for the pitches • Every student holds a presentation using the tool of “elevator pitch” and infographics to present the results of their work. • Way of sharing the work among the pairs of students: in each pair, student “A” reports on the ▪ background, ▪ public benefits ▪ the conclusions of the literature published so far regarding the planned research activity ▪ research question ○ student “B” reports on the ▪ research questions and goals ▪ hypotheses	Combination of peer-, self- and teacher evaluation based on predefined categories. Evaluation of the homework is carried out by the teacher.	

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▪ methods to apply with explanation and supporting arguments ▪ planned dissemination activities **Homework**: submission of the final versions of the research plans, corrected and completed according to the feedback received on the lesson	*Template with questions is in Annex 1. 5.* 0-15 points (This evaluation covers the whole final research plan with teacher comments including advice and explanation).	

Sources for the teacher

Thody Angela (2006): Writing and Presenting Research
http://elearn.luanar.ac.mw/odl/public/Files/Angela%20Thody's%20Writing%20and%20Presenting%20Research.pdf

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Annex 1. 5. – Evaluation criteria for the elevator pitch

Evaluation table for the elevator pitch				
		Number of points given by		
		peer student 0-5	observer 0-10	teacher 0-10
1.	Style and performance: Is the style in line with the interest and the language of the audience? Will they find it catchy/attractive?			
2.	Language: Is the text coherent, linguistically correct and easy to follow?			
3.	Arguments: How convincing and effective are the selected arguments and the overall pitch?			
4.	Content: Does it contain relevant, necessary and sufficiently detailed information (not too much, not too little)?			
5.	Duration: Did the presenter keep the time limit?			
	Sub-total			
	Total			

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References for Module 1

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- Babbie, E. R. (2016). The practice of social research. Cengage Learning, USA
- Case studies for professional ethics. UNODC. https://www.unodc.org/e4j/en/integrity-ethics/module-14/exercises/a-case-studies.html
- Doss, Heide & Popkin Gabriel (eds.): Ethics Case Studies. APS Physics. https://www.aps.org/programs/education/ethics/upload/Ethics-Case-Studies-Teacher-Edition.pdf
- EBSCO advanced search. https://www.youtube.com/watch?v=n7-HO19Xxb0
- Examples of research proposals https://www.yorksj.ac.uk/study/postgraduate/research/apply/examples-of-research-proposals/
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- Gough, D., Oliver, S. & Thomas, J. (2017): Introducing systematic reviews. In *An introduction to systematic reviews* (3rd ed). Sage Publications Ltd.
- Kerridge, Simon and Scott, Stephanie S. (2018): Research Administration around the World. Research Management Review, Volume 23, Number 1
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- Sage Project Planner tool https://methods.sagepub.com/project-planner
- Szokolszky, Á. (2004) Kutatómunka a pszichológiában. Metodológia, módszerek, gyakorlat. Osiris, Budapest.
- *Thody, Angela (2006): Writing and Presenting Research.* SAGE Publications, London.
- Walliman, Nicholas (2006): Social Research Methods. SAGE Publications, https://methods.sagepub.com/book/social-research-methods

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Module 2 – Research Funding, Policy and Governance

M2 - Lesson 1 – Policy drivers, research agendas, European research policy

Learning outcomes to be developed:

- The student can identify major policy drivers (e.g. UN developmental goals, cross-cutting issues) and assess their influence in shaping research agendas.
- The student can identify examples of societal and economic drivers impacting and defining research policy (e.g. the COVID 19 situation).
- The student can differentiate between policy and strategy and identify suitable examples in the context of research institutions and processes.
- The student can discuss and formulate arguments and confront opinions in the context of real cases of scientific policies
- The student demonstrates curiosity and interest in systemic approaches and the organization of the research ecosystem.
- The student is able to accept others' views and work together to provide the necessary support for the proposal's preparation.
- The student is critical regarding his own work and that of others taking on a constructive attitude.
- The student takes responsibility for their own work.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**
a) Short feedback on the research plans **b) Evaluation of prior knowledge and competences** Answers to basic questions assessing the understanding of the main topics discussed by Lesson 1 of Module 1 (students have to read it in advance, at home)	(*Results (scores) should **not** be counted into the end-of-*	**5 mins** **10 mins**

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Paper-based competition: students form 2 or 3 groups. Each group writes their answers on an empty paper. We must adapt the pace and content of the lesson to students' knowledge.	*semester grade)*	
c) Frontal presentation by the teacher on the base of Module 2, Lesson 1 and the answers provided by the students**:** Goal: Provide a framework for the lesson (general information about the policy drivers, European research policy for example), also laying down the foundations regarding the definition and characteristic features of the concepts of policy and strategy		**15 mins** **15 mins**
d) **Collaborative compilation of the Course Glossary** (see also Annex 2.1.A)**:** Depending on the number of students, we ask them to work independently or in pairs, in an online document which is editable by all of them and is available on the course's online (Teams/Google, etc.) interface - Before the class, we upload a semy-empty table including only definitions and a list of key terms below the table. - Students have 5 minutes to drag and drop the given terms to their place (See the table with the solutions in Annex 2.1.A - The teacher projects the result (the completed table), asks students to correct it where needed, and corrects answers/mistakes where needed. (Several terms will be used later, these need not be explained at this point, but we need to refer to this exercise later when we introduce them.) This Course Glossary must be available later for students because it will help them to understand and compile documents, so it is recommended to upload a pdf to a well-visible part of the course's online interface. It can also be used for short start-classing tests.	*Optionally can be awarded extra points.*	**10 mins**
Activities helping the understanding of theoretical foundations **e) Brainstorming** on external and internal drivers of research policy using word cloud by Mentimeter (5 min) + summary of the lecturer (of the external and internal drivers) (5 mins)		

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f) think-pair-share (or *write-pair-share*) using the "A renewed European Agenda for Research and Innovation - Europe's chance to shape its future" excerpt from the EC's document. The students get a short list of questions, which they think of while reading the excerpt (3 mins), then form pairs and answer the question(s) (5 mins). Afterwards, they share their ideas in class (5 mins). A template can be created before the class including the question, place of the individual answers, then the answer of the group, and also leaving space for those elements that the group did not include. (appr. 15 mins) + summary of the lecturer (of the external and internal drivers) (5 mins) **or** students work in pairs: based on the given dates of the source indicated, the students collect the contemporary trends and policy drivers. (Collecting: minimum 5-10 mins) + summary of the lecturer (of the external and internal drivers) (5 mins)	*Optionally can be awarded by extra points.*	**35 mins** **or 20 mins**
g) Snowballing: starting with groups of two - one pair discuss either policy or strategy (characteristics) - based on the reading assigned, then they form groups of four (one 2-member group was discussing policy, the other strategy), they "teach" each other of the characteristic features, and list those. The class discusses the findings together, and then the groups receive examples of documents on research and innovation in Europe, and they assign them to either category. (approx. 25 mins)+ summary of the lecturer (of the external and internal drivers) (5 mins)		**30 mins**
h) PBL 2, for Lessons #6 to #12: Preparation of a tender application to a call as project teams of 4 (with rotating team roles, working in an existing online application interface, https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home) **Forming groups of 4**, out of the groups of 2 formed, according to the similarities of their research project ideas.	0-10 points	**10 mins**
i) Quick end-of-lesson feedback for the teacher Competition by Socrative (https://www.socrative.com/) or Wordwall (https://wordwall.net/) game with quiz questions related to the content of	0-5 points	

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the lesson. *Results (scores) should be counted into the end-of-semester grade* **j) Homework:** The groups work on discussing and setting the **common research questions** that can be interesting for the group members' aims, and goals for potential research projects		**5 mins**

Annex 2. 1. A Course Glossary

Main terms useful for understanding calls and writing proposals

Term	Definition
1. Eligible costs	The fees that can be approved and covered by the Commission/Funding Agency in a project. Usually, they can cover labour, material, machinery, equipment, project planning, design and construction engineering services, legal fees and expenses directly related to the project, capitalized interest during construction of the project, etc. depending on the type of project.
2. Overall objective	A general indication of the project's contribution to target groups in terms of its long-term benefit. In other words, a solution to tackle the topic's challenge and contribute to the targeted impacts
3. Specific objective	Concrete objectives needed to achieve the overall objective.
4. Deliverables	Outputs (*e.g. information, study, special report, roadmap, a technical diagram brochure, list, software or other tangible output of the project*) that must be produced at a given moment during the action.
5. Milestones	Control points at specific time points in the project that help to chart progress. They may correspond to the completion of a key deliverable, allowing the next phase of the work to begin or be needed at intermediary points.
6. Key indicator	A well-defined quantitative measure of the effectiveness of an action

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7. Indirect costs	Costs that are not directly linked to the project, but necessary for the institution to work (e.g. electricity and water costs, cleaning costs, salaries of administrative staff, etc)
8. Ineligible costs	Costs that do not comply with the regulations, and conditions and therefore cannot be covered by the grant (e.g. bank costs charged by the beneficiary's bank for transfers, currency exchange losses, etc.)
9. Direct costs	Costs that directly contribute to the implementation of the project
10. Intellectual output	A tangible and meaningful activity outcome (such as publications, course materials, analyses, specific software, a digital platform for sharing good practices or developing skills, policy recommendations, etc).
11. Grant agreement	Contract between the Funding Agency of the EU and the project coordinator institution, defining the rights and obligations and the terms and conditions applicable to the grant awarded.
12. Consortium agreement	Contract between the project beneficiaries that are part of the same consortium (partners), where the project implementation framework is set and the rules of cooperation, rights and obligations of project partners are defined.
13. National Agency	An organization funded by the European Commission, responsible for managing "decentralised" grant activities and for providing information on EU funding programmes, reviewing applications submitted in their country, monitoring and evaluating the implementation of the programme in their country and supporting people and organisations taking part in these programmes.
14. Consortium	The group of organizations that are beneficiaries of the same grant and implement a project together
15. Coordinator	The applicant organisation leading and managing the project partnership
16. RMA	Professionals working along with researchers in areas that interface research such as research administration, management, knowledge transfer and exploitation, science communication, research governance, research policy, etc., to release the full potential of research and innovation

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M2 – Lesson 2 – The Funding research framework: funding programmes and calls

Learning outcomes to be developed:

- The student can understand and contextualise European research funding frameworks and main European funding programmes and schemes to support research and innovation activities (e.g. Horizon Europe).
- The student can analyse a given European call for funding from the perspective of its underlying policy (need for the call) and proposal (goals, activities, and expected outcomes and impact).
- The student can distinguish and discuss at which stage of policy and strategy development intervene pre-award and research policy/strategy related professions.
- The student demonstrates curiosity and interest in systemic approaches and the organization of the research ecosystem.
- The student is able to accept others' views and work together to provide the necessary support for the proposal's preparation.
- The student is critical regarding his work and that of others taking on a constructive attitude.
- The student takes responsibility for their own work.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**

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a) Short revision of the main points of the first lesson, and short feedback on the homework using • online crossword (https://www.education.com/worksheet-generator/reading/crossword-puzzle/; https://crosswordlabs.com/ for example): teacher provides the definition, students have to find out the term • challenges and good practices in preparing the homework for the teams		**10 mins**
b) Frontal presentation by the teacher The goal of the presentation is to give an insight into the context of EU funding schemes and the general characteristic features of calls. See the ppt usable for this presentation at this link. • **short presentation with the use of a call for proposal** (see Annex 2.2.A) helping students to show them the most important parts, and details of the rather long texts (see table in text). How to find the most important parts of them - it will help them to be able to find the most relevant bits of information. Specific questions can give help the students accomplish the task. See further examples for calls in Annex 2. 2. D.	*0-5 points*	**5 mins**
c) Short analysis of a funding call for proposal **The idea for gamification**: Quiz competition with Mentimeter. Questions are taken in the frame of a competition and a ranking can be seen immediately according to the right answers ○ The text of the call used for this task is available in Annex 2. 2. B. ○ Guide for teachers for the compilation of a Mentimeter quiz is available in Annex 4. 1). In the case of the exercise below, it is recommended to select the option "Faster correct answers get more points" and to set 20 seconds as a time limit for answering. ○ Instructions for the students: 1. On your computer: Open the Call for proposal called "Annex 2.2.C CALL ERC-2020-STG for Mentimeter quiz"	*Optionally can be awarded extra points. The top three*	**15 mins**

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2. Preview the text for 2 minutes 3. On your phones: please open www.menti.com 4. Enter the quiz with the code 6960436 5. Find the answers on the base of the document as quick as possible! The sooner you submit the right answer, the more points you receive. ○ Quiz questions: (Questions and answers are available in Annex 2.2.D, at this link or the quiz can be duplicated by using the original one available here). ▪ What is the deadline for submission? ▪ What is the maximum amount of the grant? ▪ Is any own contribution needed or does it provide full financing? ▪ Can any equipment be procured? ▪ How long is the project period? ▪ Does it require a partnership? ▪ The main purpose of the grant • **Peer learning**: The teacher asks the students achieving the highest scores to share their methods with the class by asking each of them the following question: "What did you do to find the right answers so quickly?" **d) In-depth analysis of calls for proposal in individual and group work:** Individual work • Students review the documentation of a call for proposal (the teacher can select from the calls available in Annex 2.2.D). • They fill in the table below, based on the logical framework matrix. • Note for the teacher: It is recommended that students submit their answers in the form of an online questionnaire as Google Forms (https://www.google.com/forms/about/) because it is more visible and thus increases students' activity and can be used for evaluating classroom activity. A guide for the teacher for the use of Google Forms for classroom activities is available in Annex 4. 3. In this case, it is recommended ○ to start the questionnaire with the indication of the student's name (enabling identification of the answers) ○ to uncheck in Settings the "Edit after submit" option	*achievers receive extra points.* 0-6 points	**25 mins**

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- to check the "See summary charts and text responses" option

Table 1

Need (policy context): the higher-level objective(s) towards which the project is expected to contribute	
Objectives: The effect which is expected to be achieved as the result of the project	
Activities that have to be undertaken by the project to produce outputs	
Outcomes & Impact: the wider effects of the project's outputs that can happen after the project ends	
Funding: Which organization is providing the financial support for the activities?	
Partnership: What are the requirements related to partners? E. g., Does it require a partnership? At least how many? Do you need international partners?	

the teacher can show and the class can discuss the answers collected by the class according to the tips shared in Annex 4. 3.

Group work:

- Discussion of the following questions:
  - What can be the potential risks of the implementation of future projects based on this call?
  - In case you were the manager of a project supported by this call, which 3 key project outcomes would you select as the most important ones that you would pay special attention to?

Optionally can be awarded extra points.

10 mins

e) **Classroom work:** The teacher briefly introduces the Funding and Tenders portal (bit.ly/3gyU4gv)

- based on Module 2, Lesson 2 of the curriculum
- and the portal's different guides:

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○ https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/how-to-participate/how-to-participate/1/1 ○ https://ec.europa.eu/research/participants/docs/h2020-funding-guide/index_en.htm ○ https://ec.europa.eu/research/mariecurieactions/node_en ○ https://erc.europa.eu/	15 points	**15 mins**
e) PBL – Activities developing students' skills Forming groups of 4, out of the groups of 2 formed in Module 1, according to the similarities of their research project ideas. Tasks for this lesson: - discussing and setting the common research questions that can be interesting for the group members: aims, and goals for an ideal research project - browsing the Funding and Tenders Portal's database (bit.ly/3gyU4gv) and searching at least 2-3 calls for proposals which can be suitable for the realization of some of their main research aims. It is recommended that students choose the "Open for submission" option in the "Submission status" field. It can also help students if the teachers give advice (and also hints) on how to find potential partner institutions with their specific data (e.g. PIC number), and show it on the website.		**10-15 mins** **5 mins**
f) Quick end-of-lesson feedback for the teacher Competition by Socrative or Wordwall game with quiz questions related to the content of the lesson. **Individual homework:** **A) – If we have less time and would like to proceed with the proposal writing:** For the first part of the week: Each student has to identify at least one further call that seems to be suitable for the research aims of the group. (Teacher's homework: take a look at the calls and reasonings of students before the next lesson and prepare feedback on them (before the lesson), also can choose the most appropriate one.) **B) – If we have more time and would like to improve their familiarity with managing the database:** Annex 2. 2. E Individual homework		

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Annex 2.2.A – CALL WIDESPREAD-05-2020 for frontal presentation

Twinning

WIDESPREAD-05-2020

Programme
Horizon 2020
Work programme part
Spreading Excellence and Widening Participation
Call
WIDESPREAD (H2020-WIDESPREAD-2018-2020)
Work programme year
H2020-2018-2020
Type of action
CSA Coordination and support action
Deadline model
single-stage
Opening date
24 July 2019
Deadline date
14 November 2019 17:00:00 Brussels time

Specific Challenge:
The specific challenge is to enhance networking activities between the research institutions of the Widening countries and internationally-leading counterparts at the EU level. Driven by the quest for excellence, research-intensive institutions tend to collaborate increasingly in closed groups, producing a crowding-out effect for a large number of promising institutions. This is the challenge that a specific Twinning action will try to address.

Scope:
Twinning aims at significantly strengthening a defined field of research in a university or research organisation from a Widening country by linking it with at least two internationally-leading research institutions from two different Member States or Associated Countries. Twinning will:
1. Enhance the scientific and technological capacity of the linked institutions with a principal focus on the university or research organisation from the Widening Country;

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2. Help raise the research profile of the institution from the Widening country as well as the research profile of its staff.
Successful Twinning proposals will have to clearly outline the scientific strategy for stepping up and stimulating scientific excellence and innovation capacity in a defined area of research as well as the scientific quality of the partners involved in the twinning exercise. This scientific strategy should include arrangements for formulating new (or ongoing) joint research project(s) in the scientific area of choice and describe how Twinning will take this research to a new stage, by enlarging its scope and/or the research partnership. If relevant, any links with sustainable development objectives are to be outlined.
Such a strategy should include a comprehensive set of activities to be supported. These should include at least a number of the following: short-term staff exchanges; expert visits and short-term on-site or virtual training; workshops; conference attendance; organisation of joint summer school-type activities; dissemination and outreach activities.
A dedicated focus towards promoting the involvement of early-stage researchers (as per the MSCA definition[1]) in the coordinating institution from the Widening country is expected. This should take the form of a dedicated work package or task in the proposal describing activities dedicated to early-stage researchers from the coordinating institution that could include training, mentoring and networking measures within the Twinning exercise, with a special focus on the promotion of gender equality among early-stage researchers.
One of the lessons learned from previous calls and the interim evaluation of Horizon 2020, is the lack of experience in research management and administration in widening countries. That is why proposals should also focus on strengthening the research management and administration skills of the coordinating institution from the Widening country. This should take the form of a dedicated work package or task, emphasizing specific activities, in view of helping the staff of the coordinating institution to improve their proposal preparation and project management/administration skills. If not yet in place, setting up/upgrading a research management/administration unit within the coordinating institution would be beneficial. This will be achieved by fully utilising the experience and best practices of the internationally leading partners and is expected to be a concrete deliverable of the Twinning exercise.
In general, costs relating to administration, networking, coordination, training, management, and travel costs are acceptable under a Twinning project. While the action does not focus on equipment and research costs, these could be accepted if they constitute only a minor part (up to 10%) of the total Horizon 2020 funding requested and are deemed necessary to fulfil the action's specific scope and objective.
Therefore, for grants awarded under this topic and type of action the following cost categories will be ineligible costs:
- infrastructure costs;
The respective option of Article 6.5.C of the Model Grant Agreement will be applied.
The duration of a Twinning project can be up to 3 years.

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If the coordinating entity has already been funded (as a coordinator) under other Horizon 2020 Twinning calls, these projects need to be described in the proposal. In particular, proposers need to clearly demonstrate the added value and impact of the proposal in achieving the Twinning programme objectives, in comparison to the already funded Twinning project within the coordinating entity.
The Commission considers that proposals requesting a contribution from the EU of EUR 0.9 million, would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting lower amounts.

Expected Impact:
- Increased research excellence of the coordinating institution in the particular field of research as a result of the twinning exercise.
- Enhancing the reputation, attractiveness and networking channels of the coordinating institution.
- Improved capability to compete successfully for national, EU and internationally competitive research funding.
- Illustrate quantitatively and qualitatively the expected potential impact of the twinning exercise within the coordinating institution (and possibly at the regional/national level) based on indicators like expected future publications in peer-reviewed journals, collaboration agreements with businesses, intellectual property, and new innovative products or services.
- It should be explained how the leading scientific institutions in the partnership will contribute in terms of provision of access to new research avenues, creativity and the development of new approaches, as well as acting as a source for increased mobility (inwards and outwards) of qualified scientists.
- The benefits for the internationally leading scientific institutions and the way they would materialise through the partnership should be substantiated.

[1]Early-stage researchers shall, at the time of recruitment by the host organisation, be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree. Full-time equivalent research experience is measured from the date when the researcher obtained the degree entitling him or her to embark on a doctorate, (either in the country in which the degree was obtained or in the country in which the researcher is recruited) even if a doctorate was never started or envisaged. Part-time research experience will be counted pro rata.

Topic conditions and documents

1. Eligible countries: described in Annex A of the Work Programme.

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Several non-EU/non-Associated Countries that are not automatically eligible for funding have made specific provisions for making funding available for their participants in Horizon 2020 projects. See the information in the Online Manual.

2. Eligibility and admissibility conditions: described in Annex B and Annex C of the Work Programme.
1. The applicant organisation (coordinator) where a defined field of research aims to be strengthened as a result of the Twinning action should be established in a Member State or Associated Country that is ranked below 70% of the EU27 average of the composite indicator on Research Excellence[[The detailed scores of the composite indicator can be found in p. 5 (Excellence in S&T 2010) of the "Research and Innovation Performance in EU Member States and Associated Countries 2013" at http://ec.europa.eu/research/innovation-union/pdf/state-of-the-union/2012/innovation_union_progress_at_country_level_2013.pdf]].
The selected corrective threshold of 70% of the EU average has been chosen in line with the particular policy requirements of the measure, to ensure the greatest possible impact by targeting only the lowest-performing Member States, and thereby maximising the real value of these actions. Based on the above threshold, applicant organisations from the following Member States and Associated Countries (subject to valid association agreements of third countries with Horizon 2020) will be eligible to submit proposals as coordinators (the "low R&I performing" or "Widening" countries):
Member States: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia and Slovenia.
Associated Countries: Albania, Armenia, Bosnia and Herzegovina, Faroe Islands, North Macedonia, Georgia, Moldova, Montenegro, Serbia, Tunisia, Turkey and Ukraine.
2. Twinning proposals must involve a minimum of three participants:
a. The applicant organisation must satisfy the condition set out in point 1 above and must be the coordinator of the proposal.
b. At least two internationally-leading research-intensive counterparts that must be coming from two different Member States or Associated Countries other than that of the coordinating applicant.
3. The requested EU contribution shall not exceed a maximum of EUR 0.9 million for a period of up to 3 years.
Proposal page limits and layout: please refer to Part B of the proposal template in the submission system below.

3. Evaluation:

- **Evaluation criteria, scoring and threshold**s are described in Annex H of the Work Programme.
- **Submission and evaluation processes** are described in the Online Manual.

The specific policy requirements, scope and perspectives of this topic aim at spreading excellence and widening participation in Europe, in the different "low R&I performing" or "Widening" countries[[Member States: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia and Slovenia.
Associated Countries: Albania, Armenia, Bosnia and Herzegovina, Faroe Islands, North Macedonia, Georgia, Moldova, Montenegro, Serbia, Tunisia, Turkey and Ukraine.]]. Therefore, to serve the

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objectives of the programme and to better spread the impact of the action the following is set relating to *ex aequo* proposals:
For proposals with the same score, any further prioritisation will be based on the following factors applied in the following order:
-proposals with coordinators established in "low R&I performing" or "Widening" countries[[Member States: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia and Slovenia.
Associated Countries: Albania, Armenia, Bosnia and Herzegovina, Faroe Islands, North Macedonia, Georgia, Moldova, Montenegro, Serbia, Tunisia, Turkey and Ukraine.]] not otherwise covered by more highly-ranked proposals;
- approach as described in Annex H, paragraphs 3b to 3e;
This approach will be applied successively for every group of *ex aequo* proposals requiring prioritisation, starting with the highest-scored group, and continuing in descending order.

4. Indicative time for evaluation and grant agreements:
Information on the outcome of evaluation (**single-stage** call): maximum 5 months from the deadline for submission.
Signature of grant agreements: maximum 8 months from the deadline for submission.

5. Proposal templates, evaluation forms and model grant agreements (MGA):
Coordination and Support Action:
Specific provisions and funding rates
Standard proposal template
Standard evaluation form
General MGA - Multi-Beneficiary
Annotated Grant Agreement

6. Additional provisions:
Horizon 2020 budget flexibility
Classified information
Technology readiness levels (TRL) – where a topic description refers to TRL, these definitions apply
For grants awarded under this topic for coordination and support actions the following cost categories will be ineligible costs:
- infrastructure costs
The respective option of Article 6.5(c) of the Model Grant Agreement will be applied.

7. Open access must be granted to all scientific publications resulting from Horizon 2020 actions. Where relevant, proposals should also provide information on how the participants will manage the research data generated and/or collected during the project, such as details on what types of data the project will generate, whether and how this data will be exploited or made accessible for verification and re-use, and how it will be curated and preserved.
Open access to research data The Open Research Data Pilot has been extended to cover all Horizon 2020 topics for which the submission is opened on 26 July 2016 or later. Projects funded under this topic will therefore by default provide open access to the research data they generate, except if

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they decide to opt-out under the conditions described in Annex L of the Work Programme. Projects can opt out at any stage, that is both before and after the grant signature.
Note that the evaluation phase proposals will not be evaluated more favourably because they plan to open or share their data and will not be penalised for opting out.
Open research data sharing applies to the data needed to validate the results presented in scientific publications. Additionally, projects can choose to make other data available for open access and need to describe their approach in a Data Management Plan.
Projects need to create a Data Management Plan (DMP), except if they opt-out of making their research data open access. A first version of the DMP must be provided as an early deliverable within six months of the project and should be updated during the project as appropriate. The Commission already provides guidance documents, including a template for DMPs. See the Online Manual.
Eligibility of costs: costs related to data management and data sharing are eligible for reimbursement during the project duration.
The legal requirements for projects participating in this pilot are in article 29.3 of the Model Grant Agreement.

8. Additional documents:
1. Introduction WP 2018-20
15. Spreading excellence and widening participation WP 2018-20
18. Dissemination, Exploitation and Evaluation WP 2018-20
General annexes to the Work Programme 2018-2020
Legal basis: Horizon 2020 Regulation of Establishment
Legal basis: Horizon 2020 Rules for Participation
Legal basis: Horizon 2020 Specific Programme

More at: https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/widespread-05-2020;callCode=H2020-WIDESPREAD-2018-2020;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2;statusCodes=31094501,31094502,31094503;programmePeriod=2014%20-%202020;programCcm2Id=31045243;programDivisionCode=31048019;focusAreaCode=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=sortStatus;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState

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Annex 2.2.B – CALL ERC-2020-STG for Mentimeter quiz

ERC STARTING GRANTS

ERC-2020-STG

Programme
Horizon 2020 Framework Programme
Work programme part
ERC-2020
Call
Call for proposals for ERC Starting Grant (ERC-2020-STG)
Work programme year
ERC-2020
Type of action
ERC-STG Starting Grant
Deadline model
single-stage
Opening date
17 July 2019
Deadline date
16 October 2019 17:00:00 Brussels time

Scope:
Objectives
ERC Starting Grants are designed to support excellent Principal Investigators at the career stage at which they are starting their own independent research team or programme. Principal Investigators must demonstrate the ground-breaking nature, ambition and feasibility of their scientific proposal.

Size of ERC Starting Grants
Starting Grants may be awarded up to a maximum of EUR 1 500 000 for 5 years (The maximum award is reduced pro rata temporis for projects of a shorter duration. This does not apply to ongoing projects).
However, up to an additional EUR 1 000 000 can be requested in the proposal to cover the following eligible costs when these are necessary to carry out the proposed work: (a) "start-up" costs for Principal Investigators moving to the EU or an Associated Country from elsewhere as a consequence of receiving the ERC grant and/or (b) the purchase of major equipment and/or (c) access to large facilities and/or (d) other major experimental and fieldwork costs, excluding personnel costs.

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Additional funding is not subject to pro rata temporis reduction for projects of shorter duration.
All funding requested is assessed during evaluation.

Profile of the ERC Starting Grant Principal Investigator

The Principal Investigator shall have been awarded their first PhD at least 2 and up to 7 years before 1 January 2020. The eligibility period can be extended beyond 7 years in certain properly documented circumstances.
A competitive Starting Grant Principal Investigator must have already shown the potential for research independence and evidence of maturity, for example by having produced at least one important publication as the main author or without the participation of their PhD supervisor. Applicant Principal Investigators should also be able to demonstrate a promising track record of early achievements appropriate to their research field and career stage, including significant publications (as the main author) in major international peer-reviewed multidisciplinary scientific journals, or in the leading international peer-reviewed journals of their respective field. They may also demonstrate a record of invited presentations at well-established international conferences, granted patents, awards, prizes, etc.

For further information please see the ERC Work Programme 2020**.**

Topic conditions and documents

List of countries and applicable rules for funding:

1. Eligible countries: The conditions specific to the ERC are described in the ERC Work Programme 2020 under the heading Eligibility criteria and in Annex 3. An overview is provided below:
The ERC actions are open to **researchers of any nationality** who intend to conduct their research activity in any EU Member State or Associated Country. **Principal Investigators** may be of **any age and nationality** and may reside in any country in the world at the time of the application. Principal Investigators funded through the ERC frontier research grants shall spend a minimum percentage of their working time on the ERC project and a minimum percentage of their working time in an EU Member State or Associated Country.
The **host institution** (Applicant Legal Institution) must either be established in an EU Member State or Associated Country as a legal entity created under national law, or it may be an International European Interest Organisation (such as CERN, EMBL, etc.), the European Commission's Joint Research Centre (JRC) or any other entity created under EU law.

2. Eligibility and admissibility conditions:

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The conditions specific to ERC grants are described in the ERC Work Programme 2020 under the heading Eligibility criteria and in the ERC Rules for Submission and Evaluation under Section 2.4. An overview is provided below:

Eligible proposals: All proposals must be complete and submitted by eligible Principal Investigators before the relevant call deadline. A complete proposal needs to include all parts or sections (see "Proposal submission and description" below). Incomplete proposals may be declared ineligible. The content of the proposal must relate to the objectives and to the grant type set out in the call, as defined in ERC Work Programme 2020. A proposal will only be deemed ineligible on grounds of 'scope' in clear-cut cases.

Eligible Principal Investigator: Principal Investigators may be of any age and nationality and may reside in any country in the world at the time of the application. All Principal Investigators funded through an ERC Starting grant shall spend a minimum of **50% of their working time** in an EU Member State or Associated Country and a minimum of 50% of their working time on the ERC project.

Eligible Host Institution: The host institution (Applicant Legal Entity) must engage the Principal Investigator(s) for at least the duration of the project, as defined in the grant agreement. It must either be established in an EU Member State or Associated Country as a legal entity created under national law, or it may be an International European Interest Organisation (such as CERN, EMBL, etc.), the European Commission's Joint Research Centre (JRC) or any other entity created under EU law. Any type of legal entity, public or private, including universities, research organisations and undertakings can host Principal Investigators and their teams.

Restrictions on submission of proposals: The restrictions for submission are related to the outcome of the evaluation in previous calls and are designed to allow unsuccessful Principal Investigators the time necessary to develop a stronger proposal. For further details please consult pages 20-21 of the ERC Work Programme 2020 or the Frequently Asked Questions.

Proposal page limits and layout: A complete proposal is composed of:

· **Administrative proposal forms** (including Ethics Review Table): available in section 5 of the topic conditions and the submission tool below. To access the submission tool, you need to register to the Funding & Tenders Portal first.

· **Research Proposal (Parts B1 and B2)**, available in the submission tool below, should be uploaded and submitted via the submission tool as PDF files.

Proposal Part B1

- Extended Synopsis: max. 5 pages (references do not count towards the page limits)
- Curriculum Vitae: max. 2 pages
- Funding ID: no page limits

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- Track Record: max. 2 pages

Proposal Part B2

Scientific Proposal: max. 15 pages (references do not count towards the page limit).

· **Host Institution Binding Statement of Support** (available on this page below and as a word-template in the submission tool)

· **PhD record** and supporting documents for eligibility checking.

· **Ethics review self-assessment** (if applicable) and supporting documentation.

Complete proposals must be submitted via the submission tool available through the Funding & Tenders Portal. **Further detailed guidance is in the** 'IT HOW TO' wiki site.

3. Evaluation

The conditions specific to ERC are described in the ERC Work Programme 2020 under the heading 'Evaluation procedure and criteria' and in the ERC Rules for Submission and Evaluation. An overview is provided below:

Evaluation procedure

For the Starting grant call a single submission of the full proposal will be followed by a two-step evaluation. The evaluation will be conducted by means of a structure of high level peer review panels as listed in Annex 1 of the ERC Work Programme 2020. The panels may be assisted by independent experts working remotely.

Evaluation criteria

For all ERC frontier research grants **scientific excellence is the sole criterion of evaluation**. It will be applied in conjunction to the evaluation of both: the ground-breaking nature, ambition and feasibility of the research project; and the intellectual capacity, creativity and commitment of the Principal Investigator. The detailed evaluation elements applying to the excellence of the research project and the Principal Investigator are set out in the ERC Work Programme 2020.

4. Indicative timetable for evaluation and grant agreement:

Please refer to the ERC Work Programme 2020 under the heading 'Indicative summary of main calls from the 2020 budget'.

5. Provisions, proposal templates and evaluation forms for the type(s) of action(s) under this topic: **ERC 2020 Starting Grant**

For the specific provisions and the funding rates, please refer to the ERC Work Programme 2020.

- Information for Applicants to the Starting and Consolidator Grant 2020 Calls
- ERC 2020 Standard templates
- ERC Guide for Peer Reviewers –STG, COG, ADG
- H2020 ERC MGA – Multi-Beneficiary
- H2020 ERC MGA – Mono-Beneficiary
- H2020 Annotated Grant Agreement

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6. Open access

The ERC supports the principle of open access to the published output of research, including in particular peer-reviewed articles and monographs, as a fundamental part of its mission. It also supports the basic principle of open access to research data and data related products such as computer code. The ERC considers that providing free online access to all these materials can be the most effective way of ensuring that the fruits of the research it funds can be accessed, read and used as the basis for further research.

Under Horizon 2020, beneficiaries of ERC grants must ensure open access to all peer-reviewed scientific publications relating to their results as set out in Article 29.2 of the ERC Model Grant Agreement.

In addition, beneficiaries of ERC frontier research grants funded under this Work Programme will automatically be covered by the provisions on research data sharing as set out in Article 29.3 of the ERC Model Grant Agreement unless they specifically decide to opt-out. In particular, beneficiaries that do not opt-out will be required to submit a data management plan within the first six months of project implementation. These provisions are designed to facilitate access, re-use and preservation of the research data generated during the ERC funded research work.

Beneficiaries should carefully check the additional obligations related to open research data contained in Article 29.3. They may opt-out of the provisions of the previous paragraph at any stage, thereby freeing themselves retroactively from the associated obligations.

7. Additional documents:

Legal basis: Horizon 2020 - Regulation of Establishment
Legal basis: Horizon 2020 Rules for Participation
Legal basis: Horizon 2020 Specific Programme
Flash Call Info_STG2020 results en

More at: https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/erc-2020-stg;callCode=ERC-2020-STG;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2;statusCodes=31094501,31094502,31094503;programmePeriod=null;programCcm2Id=31045243;programDivisionCode=31047825;focusAreaCode=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=sortStatus;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState

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Annex 2. 2. C – Mentimeter quiz for the lesson

What is the deadline for submission?	16 October 2019
What is the maximum amount of the grant?	EUR 1 750000 + EUR 1000 000 can be requested
Is any own contribution needed or does it provide full financing?	Full financing
Can any equipment be procured?	Yes
How long is the project period?	5 years
Does it require a partnership?	No
The main purpose of the grant	support the career of leading researchers
“Principal Investigators funded through an ERC Starting grant shall spend a maximum of 50% of their working time in an EU Member State”	False

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Annex 2. 2. D – Further examples of calls

1. Strategic Partnerships in Response to the Covid-19 Situation (Erasmus)
2. Testing and demonstrating systemic innovations in support of the Farm-to-Fork Strategy (LC-GD-6-1-2020)
3. Marie Skłodowska-Curie Individual Fellowships (H2020-MSCA-IF-2020)
4. Micro-and nano-plastics in our environment: Understanding exposures and impacts on human health (SC1-BHC-36-2020)

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Annex 2. 2. E – Individual homework

Name:

Due:

Task: Usually, RMAs can

- either receive requests from researchers to find a relevant call for them
- or find a call and recommend it to the researchers of their institution.

The two exercises below model these two types of situations. Try yourself in dealing with both situations.

Situation 1: You are an RMA at an institution, and you have just had a meeting with a group of researchers who shared their research concepts with you. Please find the summary of the concept below (*Project concept*). Based on the ideas included in it, you have to find a relevant call within „Horizon 2020 Work Programme 2018-2020".

Project idea

Concept

The research aims to explain and contextualise the recent rise of populism in Central and Eastern Europe (CEE). While populism is a phenomenon that has by now emerged in almost every democracy, we believe that regional and cultural-historical dimensions need to be considered to improve not only scholarly knowledge but also policy recommendations. It is urgent for Western Europeans to look into the CEE mirror, just as it is urgent for the CEE region to understand itself. To this end, the project aims to create a typology of populism's various manifestations, reconstruct the trajectories of its growth and decline, investigate its causes, interpret its meanings, diagnose its consequences, and propose policy solutions.

The focus is on CEE, but the project will engage in comparisons with populisms elsewhere, particularly in Western Europe. While scholars from different disciplines have looked at populism, we argue that the full potential of interdisciplinary research has not been achieved yet. We plan to draw on data and models from various disciplines and combine them into a rich study of forces at play. In addition to established methods of economics, sociology, and cultural studies, at the heart of our approach is a novel methodology whose essence is a large-scale,

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Europe-wide, multi-lingual online conversation. This is a listening exercise; its aim is a deep understanding of everyday life in Europe challenged by the rise of populism. The method to process this unique ethnographic material is semantic social network analysis.

The project will rely on foresight/future studies, and deep involvement with activists, policymakers, and civil society actors to boost the immune system of European democracy. We will develop scenarios and will share them with all interested parties to reflect, in public debate, on how well they fit both in the CEE region and the rest of Europe. Our focus is not just scholarly; the project serves as a platform for mutual learning.

Three **objectives** are identified:

Objective 1. Build a new, interdisciplinary model to describe, interpret and explain the rise of populism in the CEE region.

Objective 2. Use the model to assess the replicability of populism's trajectory in non-CEE Europe.

Objective 3. Develop and apply new tools and methodologies for ethnographic analysis to support large-scale, multi-lingual, multi-media data.

A) Identify the call and the topic within it that fits the project idea the best and give a short justification as well (3-4 sentences).

Title of the call:

Call identifier:

Title of the topic:

Identifier (ID):

Topic data sheet in the Funding and Tenders Portal:

B) Justification (Why you think this call would provide an opportunity to implement a part of the concept):

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Situation 2: Let us suppose that as an RMA within a university, it is you who found the above-mentioned call. You would like to recommend this call to some of the researchers of your institution but first, you have to find out:

A) What research areas (disciplines and subfields) can be included in a project implemented based on the call for application? Name at least 2!

B) What is the approximate amount of a grant obtainable in this call for one project? (See the *Topic description* available in the Topic data sheet in the Funding and Tenders Portal)

C) On the base of the Scope and Expected Impacts defined in the *Topic description*, what kind of activities would you suggest to researchers for implementation? List at least 4 activities.

1. **2.** **3.** **4.**

D) Where can you find the Proposal Template for this call? List the steps to reach it:

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M2 - Lesson 3 – Funding proposals and evaluation criteria

Learning outcomes to be developed:

- The student can identify examples of societal and economic drivers impacting and defining research policy (e.g. the COVID 19 situation).
- The student can understand and contextualize European research funding frameworks and main European funding programmes and schemes to support research and innovation activities (e.g. Horizon Europe).
- The student is familiar with the general process and principles of evaluation and assessment criteria of research proposals: what do funding agencies prefer, what they dislike, vocabulary required, how to interpret what is required in a specific call, aspects meaning advantage in the context of EU funded calls
- The student is able to recognize the main components of a funding proposal and link them to the evaluation criteria of a given call for funding.
- The student can explain the pre-award work and how it fits into the research cycle.
- The student can accept others' views and work together to provide the necessary support for the proposal's preparation.
- The student is critical regarding his own work and that of others taking on a constructive attitude.
- The student takes responsibility for their own work.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**
a) Feedback on the homework and a short revision of the main points of the previous lesson • Kahoot test (after registering, at the Kahoot homepage, you can create easily games to help with assessment here • OR students complete a half-finished mind map (coggle.it)	*If the quiz is written, the results (scores) should be counted into the end-of-semester grade*	**10 mins** **25 mins**

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b) Frontal presentation by the teacher The goal of the presentation is to provide essential information regarding the structure of the calls, pointing out the main parts of them. The evaluation of the funding proposals is also relevant to introduce. The evaluation criteria based on the 2018-2020 self-evaluation form are the following: excellence, impact, quality, and efficiency of the implementation. The scoring is also included in the following document (as indicated in the text as well: https://ec.europa.eu/research/participants/data/ref/h2020/call_ptef/ef/2018-2020/h2020-call-ef-ria-ia-csa-2018-20_en.pdf) Further documents including evaluation criteria for EU funding proposals: • https://ec.europa.eu/eip/agriculture/sites/agri-eip/files/massimo-burioni-h2020-proposals-submission-evaluation.pdf • https://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/from-evaluation-to-grant-signature/evaluation-of-proposals/elig_eval_criteria_en.htm • https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-h-esacrit_en.pdf		**35 mins**
c) Work in groups of three: Part B of selected funding proposals is given to the groups. The groups have to find the answers to the questions (pg. 28). (15 mins) The members share their findings (8 mins), and then they answer the questions in the class (12 mins) - the teacher asks one question from one group, but the member answering it should not be the same who worked on the question.	2 points per student	**15 mins**
d) Short feedback on the homework (the students choose the proper call for application with the help of the teacher) and provide the tasks of the **next (individual) homework** (5 mins), which is:	15-20 points	

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• identifying potential partner institutions (with the availabilities of the given institution) with a detailed justification explaining the reasons for the involvement of the given partner (max 4 partners) • compiling a letter of invitation/expression of interest to the project. • start filling out the log frame for the project by applying the log frame matrix provided in lesson 2. Teacher's short presentation on: "project concept" and "expression of interest": features, function. Homework should be uploaded to the given platform before the class. (Annex 2. 4. A – Project proposal template) Teacher's homework: prepare for providing feedback on the uploaded materials, especially the letter of invitation for the next class. **e) Quick end-of-lesson round-table feedback for the teacher** Which were the most interesting issues you learnt in this lesson?		**5 mins**

Further readings/reference material for teachers

- https://www.umc.edu.dz/images/h2020%20BOOK.pdf

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Annex 2. 4. A – Project proposal template

- For further background information on the priorities of the relevant Horizon Work Programme, please check out: https://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-intro_en.pdf
- The evaluation criteria can also be helpful: https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-h-esacrit_en.pdf
- See also the course glossary in Annex 2. 1. A

Proposal title	
Proposal acronym	
Type of action	
Duration in months	
Consortium leader	
Free keywords *(at least 3)*	

Members of the team:

Name of Students	Avatar name	Actual role in the project management team

1. Abstract
Write a summary of the overall project (max. length is 2000 characters with spaces). Touch upon the following: - context/background of the project - needs and target groups to be addressed - the objectives of the proposal and how to achieve them - the relevance of the objectives to the work programme - main activities planned - a short description of the results and impact envisaged - the potential longer-term benefits.

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2) Project Consortium

Identify **4 partner** institutions besides the consortium leader (coordinator) and provide the contact details of the institutions and explain the reasons why to involve that partner.

Participant No.	Legal name	Short name	PIC	Address & e-mail	Webpage	Legal status
1 (Coordinator)						
2						
3						
4						
5						

Explanation – how did you choose the project partners and what will they bring to the project? (Max. 1500 characters with spaces)

Research and Innovation legal statuses:

Specific legal statuses:

Public body
Non-profit (NGO)
International organisation
International organisation of European interest
The secondary or Higher education establishment

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Research organisation
Legal person
SME

Hint: you can find potential partner institutions on the portal Funding and Tender Opportunities (https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/how-to-participate/partner-search); CORDIS EU research results (https://cordis.europa.eu/projects/en)

3) Work packages, deliverables, and milestones[4]

Work package number	**1.**			
Lead Participant				
Work package title				
Participant number				
Short name of the participant				
Person/months per participant:				
Start month		**End month**		
Deliverables (brief description and month of delivery)				
Objectives (list of objectives)				

Description of work (where appropriate, broken down into tasks), lead partner and role of participants (max. 2000 characters with spaces)

[4] *Clean Sky*

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Work package number	**2.**			
Lead Participant				
Work package title				
Participant number				
Short name of the participant				
Person/months per participant:				
Start month		**End month**		
Deliverables (brief description and month of delivery)				
Objectives (list of objectives)				

Description of work (where appropriate, broken down into tasks), lead partner and role of participants (max. 2000 characters with spaces)

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Work package number	**3.**			
Lead Participant				
Work package title				
Participant number				
Short name of the participant				
Person/months per participant:				
Start month		**End month**		
Deliverables (brief description and month of delivery)				
Objectives (list of objectives)				

Description of work (where appropriate, broken down into tasks), lead partner and role of participants (max. 2000 characters with spaces)

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Work package number	**4.**			
Lead Participant				
Work package title				
Participant number				
Short name of the participant				
Person/months per participant:				
Start month		**End month**		
Deliverables (brief description and month of delivery)				
Objectives (list of objectives)				

Description of work (where appropriate, broken down into tasks), lead partner and role of participants (max. 2000 characters with spaces)

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List of work packages

Work package No.	Work Package Title	Lead Participant No	Lead Participant Short Name	Person-Months	Start Month	End month
			Total person-months:			
			Overall Start and End Months foreseen:			

List of Deliverables

Deliverable (number)	Deliverable name	Work package number	Short name of the lead participant	Type*	Dissemination level*	Delivery date (in months)

***Type:**

Use one of the following codes:

R: Document, report (excluding the periodic and final reports)

DEM: Demonstrator, pilot, prototype, plan designs

DEC: Websites, patent filing, press & media actions, videos, etc.

DATA: Data sets, microdata, etc.

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DMP: Data management plan
ETHICS: Deliverables related to ethics issues.
SECURITY: Deliverables related to security issues
OTHER: Software, technical diagrams, algorithms, models, etc.

***Dissemination level:**
Use one of the following codes: P
U – Public, fully open, e.g. web (Deliverables flagged as public will be automatically published on CORDIS project's page)
SEN – Sensitive, limited under the conditions of the Grant Agreement
Classified R-UE/EU-R – EU RESTRICTED under the Commission Decision No2015/444
Classified C-UE/EU-C – EU CONFIDENTIAL under the Commission Decision No2015/444
Classified S-UE/EU-S – EU SECRET under the Commission Decision No2015/444

Delivery date Measured in months from the project start date (month 1)
(Source: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/temp-form/af/af_he-ria-ia_en.pdf)

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List of milestones

Milestone number	Milestone name	Related work package(s)	Due date (in months)	Means of verification

Means of verification: Show how you will confirm that the milestone has been attained. Refer to indicators if appropriate. For example: a laboratory prototype that is 'up and running'; software released and validated by a user group; field survey complete and data quality validated.
(Source: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/temp-form/af/af_he-ria-ia_en.pdf)

4) Short dissemination plan table

	Target groups	Platforms
Communication		
Dissemination		
Exploitation		

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A short glossary of key terms

Deliverable A report that is sent to the Commission or Agency providing information to ensure effective monitoring of the project – outputs to be submitted to the EU. There are different types of deliverables (e.g. a report on specific activities or results, data management plans, ethics or security requirements; publication, leaflet, progress report, brochure, list, etc).

Impacts: Wider long-term effects on society (including the environment), the economy and science, enabled by the outcomes of R&I investments (long term). It refers to the specific contribution of the project to the work programme's expected impacts described in the destination. Impacts generally occur sometime after the end of the project. Example: The deployment of the advanced forecasting system enables each airport to increase maximum passenger capacity by 15% and passenger average throughput by 10%, leading to a 28% reduction in infrastructure expansion costs

Milestones means control points in the project that help to chart progress. Milestones may correspond to the completion of a key deliverable, allowing the next phase of the work to begin. They may also be needed at intermediary points so that, if problems have arisen, corrective measures can be taken. A milestone may be a critical decision point in the project where, for example, the consortium must decide which of several technologies to adopt for further development. The achievement of a milestone should be verifiable. Examples: (kick-off meetings, steering committees, the first draft of a survey, prototype, etc)

Objectives: The goals of the work performed within the project, in terms of its research and innovation content. This will be translated into the project's results. These may range from tackling specific research questions, demonstrating the feasibility of innovation, and sharing knowledge among stakeholders on specific issues. The nature of the objectives will depend on the type of action, and the scope of the topic.

Outcomes: The expected effects, over the medium term, of projects supported under a given topic. The results of a project should contribute to these outcomes, fostered in particular by the dissemination and exploitation measures. This may include the uptake, diffusion, deployment, and/or use of the project's results by direct target groups. Outcomes generally occur during or shortly after the end of the project. Example: 9 European airports adopt the advanced forecasting system demonstrated during the project.

Results: What is generated during the project implementation. This may include, for example, know-how, innovative solutions, algorithms, proof of feasibility, new business models, policy recommendations, guidelines, prototypes, demonstrators, databases and datasets, trained researchers, new infrastructures, networks, etc. Most project results (inventions, scientific works, etc.) are 'Intellectual Property', which may, if appropriate, be protected by formal 'Intellectual Property Rights'. Example: Successful large-scale demonstrator: a trial with 3 airports of an advanced forecasting system for proactive airport passenger flow management

Work package means a major sub-division of the proposed project.

Sources:

EU Funding & Tenders Online Manual EU Funding Programmes 2021-2027, 8 February 2021
https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/om_en.pdf
Horizon Europe Programme Standard Application Form (HE RIA, IA). 21 January 2022
https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/temp-form/af/af_he-ria-ia-stage-1_en.pdf

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M2 - Lesson 4 – Preparation of a project proposal

Learning outcomes to be developed:

- The student is familiar with the general process and principles of evaluation and assessment criteria of research proposals: what do funding agencies prefer, what they dislike, vocabulary required, how to interpret what is required in a specific call, aspects meaning advantage in the context of EU funded calls
- The student can analyse a given European call for funding from the perspective of its underlying policy (need for the call) and proposal (goals, activities, and expected outcomes and impact).
- With the help of the teacher, the student can draft a simple budget for a proposal, according to the activities planned for the different project phases and milestones.
- The student is able to accept others' views and work together to provide the necessary support for the proposal's preparation.
- The student is critical regarding his own work and that of others taking on a constructive attitude.
- The student takes responsibility for their own work.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**
a) Short revision of the main points of the previous lesson: revision of the main points. b) Visiting an online brokerage event (30 minutes) • Teachers' brief introduction of this type of event, presentation of the functions provided by the concrete online interface to be visited – you can use this video for this introduction instead of the teacher's presentation: https://youtu.be/KQ1ijQFJtQUhttps://youtu.be/KQ1ijQFJtQU • Guiding questions for the observation: "What are the similarities and differences between this event and the online database (Funding and Tenders portal) browsing? What added value of a brokerage event can you identify?"	0-10 points for active participation.	**5 mins** **30 mins**

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• Signing in (with the teacher's login) to the event, collecting observations • Discussing the conclusions c) Frontal presentation by the teacher (20 mins): The goal of the presentation is to provide the essential information regarding the formulation of work packages (how to formulate them; good and bad examples). The other part of the presentation touches upon the financial provisions: major cost categories, their basic characteristics, etc. d) PBL - Activities developing students' skills (40 mins): • For this lesson, the students identify a maximum of 4 potential project partner institutions, provide the availabilities of the institutions and also explain the reasons why to involve that partner. In class, the final common decision on the partners in the frame of a discussion process (10 mins) • Introduction of the previous research conducted, developments of the research focus, research questions, brief rationale for the project idea (5 mins) • setting project work plan, and activities based on them (10 mins) The activity will focus on how the work plan is built • Work Packages, • tasks/activities; • deliverables/outputs, etc. • What roles partners can be dedicated to, and how do you plan the activities (running in parallel or built on each other, etc.) • drafting & negotiating on a **simple budget** (15 mins) **Homework**: • finish the budget, phases, and activities. Teachers send new feedback on the development/progress of the proposal of the groups.	0-10 points	**20 mins** **40 mins**

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M2 - Lesson 5 – Institutional proposals, research strategy and governance

Learning outcomes to be developed:

- The student can differentiate external from internal drivers of research policy.
- The student is able to recognize the main components of a funding proposal and link them to the evaluation criteria of a given call for funding.
- The student can explain the main governance structure of a given research institution.
- The student can distinguish and discuss at which stage of policy and strategy development intervene pre-award and research policy/strategy-related professions.
- The learner interiorizes and commits to the values and mission of the institution.
- The student demonstrates curiosity and interest in systemic approaches and the organization of the research ecosystem.
- The student is able to accept others' views and work together to provide the necessary support for the proposal's preparation.
- The student is critical regarding his own work and that of others taking on a constructive attitude.
- The student takes responsibility for their own work.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**
a) Short revision of the main points of the previous lesson using find-the-word exercise (https://thewordsearch.com/maker/; https://www.education.com/worksheet-generator/reading/word-search/ for example)	*Results (scores) should be counted into the end-of-semester grade*	**5 mins** **10 mins**

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b) Brainstorming: what kind of research-performing institutions are there according to the students? The teacher can apply a virtual whiteboard (e.g. Linoit) as a platform for brainstorming; word cloud (e.g. Mentimeter) can also be applied (5 min) + short summary of the lecturer on the results (5 mins)		
b) Frontal presentation by the teacher: The goal of the presentation covers information regarding the research institutions and their general description. Quality assessment can also be mentioned. The general introduction of the institutional proposal is covered.		**25 mins**
c) Groups of 3 students can work on the followings: first, students divide the tasks among each other and gather the necessary information		**20 mins**
• find the values and missions of the University - prepare a short list of them • what kinds of research projects are there at the University (list 5-10 of them) • when elaborating on an institutional proposal, in what areas RMA support can be detected?		
Students dealing with the same question come together, and see what they found. Those working on question 3 prepare a mindmap together. They discuss the results in class. **(15 mins)**	0-5 points	**15 mins**
d) Homework Short feedback on homework. Continuing the elaboration of the call for proposal (according to the guidance of the teacher)		**10 mins**
e) Quick end-of-lesson round-table feedback for the teacher Which were the most interesting issues you learnt in this lesson?		**5 mins**

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M2 - Lesson 6 – Conflict of interests between policy, funding and research

Learning outcomes to be developed:

- The student can identify examples of societal and economic drivers impacting and defining research policy (e.g. the COVID 19 situation).
- The student can understand and contextualise European research funding frameworks and main European funding programmes and schemes to support research and innovation activities (e.g. Horizon Europe).
- The student can discuss and formulate arguments and confront opinions in the context of real cases of scientific policies.
- The student can effectively communicate, negotiate terms and persuade different target audiences including policy makers for programme bodies, senior management of research institutions, research managers, and researchers.
- The learner interiorizes and commits to the values and mission of the institution.
- The student demonstrates curiosity and interest in systemic approaches and the organization of the research ecosystem.
- The student is able to accept others' views and work together to provide the necessary support for the proposal's preparation.
- The student is critical regarding his own work and that of others taking on a constructive attitude.
- The student takes responsibility for their own work.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**
a) Short revision of the main points of the previous lesson: • Kahoot test (after registering, at Kahoot homepage, you can create easily games helping assessment here	0-5 points	**5 mins**
b) PBL progress	0-7 points	**20 mins**

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- The groups finish elaborating the call for proposal. **c) Work in pairs**: each pair receives one of the articles. The pair of students answer the following questions **based on the abstract and the conclusion parts** of the articles below (20 mins): • Mountz, A., Bonds, A., Mansfield, B., Loyd, J., Hyndman, J., Walton-Roberts, M., Basu, R., Whitson, R., Hawkins, R., Hamilton, T., & Curran, W. (2015). For Slow Scholarship: A Feminist Politics of Resistance through Collective Action in the Neoliberal University. *ACME: An International Journal for Critical Geographies*, *14*(4), 1235-1259. Retrieved from https://acme-journal.org/index.php/acme/article/view/1058 • Sandra Acker & Anne Wagner (2019) Feminist scholars working around the neoliberal university, Gender and Education, 31:1, 62-81, DOI: 10.1080/09540253.2017.1296117 • John Morrissey (2015) Regimes of performance: practices of the normalised self in the neoliberal university, British Journal of Sociology of Education, 36:4, 614-634, DOI: 10.1080/01425692.2013.838515 • Rhodes C, Wright C, Pullen A. Changing the World? The Politics of Activism and Impact in the Neoliberal University. *Organization*. 2018;25(1):139-147. doi:10.1177/1350508417726546 • Rebecca Lund (2020) The social organisation of boasting in the neoliberal university, Gender and Education, 32:4, 466-485, DOI: 10.1080/09540253.2018.1482412 • Rebecca Lund, & Tienari, J. (2019). Passion, care, and eros in the gendered neoliberal university. Organization, 26(1), 98-121. (23p). • Edwards, M. A., & Roy, S. (2017). Academic Research in the 21st Century: Maintaining Scientific Integrity in a Climate of Perverse Incentives and Hypercompetition. Environmental Engineering Science, 34(1), 51–61. https://doi.org/10.1089/ees.2016.0223 • Laudel, G. (2006). The art of getting funded: how scientists adapt to their funding conditions. Science and Public Policy, 33(7), 489–504. https://doi.org/10.3152/147154306781778777 1. Which funding changes have occurred in the last decades? 2. What other factors have changed in the last decades that seem to affect the way research is conducted? 3. What are the micromechanisms by which researchers adapt to the current pressures of the research environment? 4. Which behaviours related to the way researchers conduct their research have been observed? 5. Which ethical dilemmas are raised in the articles?		**50 mins**

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6. If you were a Researcher/Funding Agency/Policy maker/ RMA, you abide by which values? Consider the values of the citizen, the researcher and the institution. 7. What course of action would you consider for the future? Then, the groups working on the same article form a larger group, discuss their findings (10 mins) then the answers are discussed in class (20 mins). **A simpler option for activity c)** Each pair reads the same article but another part of it, and get different questions. At the group level discussion, they report their part of the article and put the pieces of the puzzle together. **Homework** • The groups have to prepare a presentation for the last lesson – the aim is to introduce the project and convince the potential stakeholders / institutional decision makers. • studying the application of another group • taking notes individually for the evaluation on the base of pre-defined evaluation criteria **d) Quick end-of-lesson round-table feedback for the teacher** Which were the most interesting issues you learnt in this lesson?		**40 mins** **5 mins**

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Annex 2. 6. A - Evaluation table for the project proposals

Evaluation category	Content of the evaluation criterion	Remarks/recommendation	Points
Expression of interest (5 points)	How informative is the document? Does it contain all the necessary information? Do the competencies of the experts and the organization presented in the document, include the necessary competencies for this task? How coherent, clear and convincing is it?		
Activities (5 points)	To what extent do the planned activities reflect - the objectives of the team's current proposal (Section E)? - the issues presented in the "Scope" section of the Call for proposals? [1]		
Partnership (5 points)	Is diversity reflected in the proposed consortium (in terms of size, area, type of organization, and country type)?	.	
Work packages (10 points)	Are the work packages in line with the objectives of the projects?		
Deliverables (5 points)	Are the deliverables in line with the "Expected impact" section of the call?[2]		
Objectives (5 points)	Are the deliverables connected to the objectives of the project (Section E)?		
Milestones (10 points)	Are the milestones clear and reasonable in connection with the objectives of the project?		

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Work plan (10 points)	Quality and effectiveness of the work plan: Is the time assigned to work packages in line with their objectives and deliverables?		
Risks (5 points)	Does the scope of risks cover the relevant areas? Are the mitigation measures adequate to address the risks?		
Total number of points			

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M2 - Lesson 7 – Oral presentations

Learning outcomes to be developed:

- The student can understand and contextualise European research funding frameworks and main European funding programmes and schemes to support research and innovation activities (e.g. Horizon Europe).
- The student is familiar with the general process and principles of evaluation and assessment criteria of research proposals: what do funding agencies prefer, what they dislike, vocabulary required, how to interpret what is required in a specific call, aspects meaning advantage in the context of EU funded calls
- The student can analyse a given European call for funding from the perspective of its underlying policy (need for the call) and proposal (goals, activities, and expected outcomes and impact).
- The student is able to recognize the main components of a funding proposal and link them to the evaluation criteria of a given call for funding.
- The student is able to draft a funding plan (a) in line with the institutional strategy of the organisation (b) that addresses external and internal drivers of policy and strategy, c) adjusted with the specific evaluation and assessment criteria, preferences of research calls (of the funding organisations).
- The student can discuss and formulate arguments and confront opinions in the context of real cases of scientific policies.
- The student can effectively communicate, negotiate terms and persuade different target audiences including policy makers for programme bodies, senior management of research institutions, research managers, and researchers.
- The student is able to accept others' views and work together to provide the necessary support for the proposal's preparation.
- The student is critical regarding his own work and that of others taking on a constructive attitude.
- The student takes responsibility for their own work.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**

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a) Self-introduction and interview with a professional, **external evaluator of proposals**. **b) Peer evaluation** of the project proposals - each group receives one of the proposals, and evaluates it (discussion of scoring), - give arguments and explanations for the evaluation in the form of an oral evaluation report. c) **Feedback and tips from the professional evaluator**	5 points 15 points for presentation 30 points for the proposal	

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Module 3 – Project Integration and Management

M3 - Lesson 1 – Project Lifecycle & RMAs as Professionals in the Project lifecycle

Learning outcomes to be developed:

- The student knows how to identify the activities in light of the project objectives, outputs, main tasks, performance criteria and resource requirements set in the proposal.
- The student will identify the RMA professional roles involved directly and indirectly in post-award project management

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and assessment**	**Timing**
a) Games helping students to be connected: getting acquainted with each other • "Show and tell", see here • OR: "Snowball fight", see here. • OR see further ideas here		**15 mins**
b) Evaluation of prior knowledge and competences Exploring the initial competencies, and knowledge of students: Answers to short, **basic questions** by either of the following • virtual whiteboard (linoit.com for example) • OR online crossword (https://www.education.com/worksheet-generator/reading/crossword-puzzle/; https://crosswordlabs.com/ for example) Closed by teacher's feedback and oral summary	*Results (scores) should **not** be counted in the end-of-semester grade*	**10 mins**
c) Introduction to the RMA carrier with the help of an invited RMA • At the request of the teacher, the RMA shares experiences on the different leadership styles applied in the different stages of a		**30 mins** *10 minutes of self-introduction*

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project life cycle and refer to the theoretical content discussed later, in the lesson

- Interview questions to be sent to the RMA in advance:
  - What are the best ways to find out who are the right persons to ask a question within the organization: giving advice, situation exercise, studies on the topic? (Understanding nonverbal messages and unwritten rules within a workplace.) Which project phases do you consider the most important ones? What are the secrets of effective teamwork?
- optionally, this conversation can be done via the Internet as well

+ 20 minutes of Q&A

<u>Unit 2 of the lesson: Setting the goals and rules for the course, together with the students</u>

d) Introduction of the course (expectations, planned activities, assessment methods) and the topic of the lesson by the teacher

10 mins

e) Activities helping the understanding of theoretical foundation related to the leadership model set by Morgeson et al. (2010) (see References below)

- **classroom group work:**
  - Short introduction including
    - new and earlier tendencies in leadership theories
    - what is "shared leadership" like
    - the 2 main phases of the teams' lifecycle based on the article above

5 mins

  - **Each student** receives one of the functions listed in the article on a piece of paper (see in the curriculum) – See Annex 3.1.A
  - On the whiteboard, the **two phases are indicated,** and they are explained as well (either by arrows, or a timeline)

Transition phase	Action phase

10 mins

  - The task of the students is to **find the proper phase** for the function they receive first. **Two groups are formed.** The members of the groups discuss and decide the correct

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order of the leadership functions. They arrange the pieces of paper in the correct order on the board. o Students stay at the whiteboard and comment on the results. The teacher asks them whether any of the functions is not clear and provides an explanation. o The teacher takes a photo of the whiteboard with the two phases and 15 functions and uploads it to the site of the seminar.		
f) **Activity transforming the theoretical knowledge into a personal experience**: Students still stay in front of the board, and they form 2 groups (according to the phase to which the function received belongs): Group A (Transaction phase) and Group B (Action phase). The teacher informs students that this course will aim to gain practical experiences in all possible ways on the theories/knowledge that they learn in this course. A possible way to introduce this: *"The theories presented above will be applied to us as a team, as this situation is very similar to a workplace. In this case, all of you will have to test yourself as leaders (using the Storyline method) but I as a teacher will have the overall responsibility for the effectiveness of our team and your satisfaction and development as my team members. This is an excellent occasion to set our expectations and our resolutions/decisions in terms of this course.* • *Your task is now to think about the function you received earlier and formulate a sentence answering the question:* ***Group A**: (Leadership functions during the transition phase): "Are there any actions in this category that you have experienced so far in this lesson on our part? This semester, which functions would be most important and helpful to you as students that you would like to experience from us as teachers?"* • ***Group B:** (Leadership functions during the action): "This semester, which functions would be most important and helpful to you as students that you would like to experience from us as teachers?* • *Let's translate them into concrete sentences declaring your expectations." (E. g.: "*Provide resources") I will give you the necessary information regarding good examples/literature/various types of information helping you to better understand the content of the lesson)		**15 mins**

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• Conversation aiming at the definition of the "Course policies" including both students' and teacher's expectations (in the form of a written document to be available on the common online interface of the course) **g) Homework** Filling in the online questionnaire measuring up student competencies.		**15 mins**

References

Morgeson, F. P., DeRue, D. S., & Karam, E. P. (2010): Leadership in teams: A functional approach to understanding leadership structures and processes. *Journal of Management, 36*(1), 5–39. https://doi.org/10.1177/0149206309347376

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Annex 3. 1. A - Leadership functions in different project phases

Leadership functions during the transition phase:

1. Composes the team – bringing together the best available people for the job, taking into account complementary competencies and ability to work together for a common goal
2. Defines the mission – clarifying the team's purpose
3. Establishes performance expectations and sets team goals – goals which are appropriately challenging and motivating
4. Sets clear standards of performance
5. Structure and plan – defining and structuring own work and the work of the team
6. Structure and plan – Identifying WHEN key aspects of the work need to be completed
7. Makes sure team members have clear roles
8. Trains and develops helping new team members how to do the work
9. Makes sure that the team has the necessary problem-solving and interpersonal skills
10. Helps new team members to further develop their skills
11. Sense-making — assisting the team's understanding of events and situations
12. Provides positive feedback when the team performs well
13. Provides corrective feedback

Leadership functions during the action:

1. Monitors the team – examining the team's processes, performance, and the external team context
2. Manages team boundaries –representing the team's interests to individuals and groups outside the team to protect the team from interference as well as persuading others to support them and coordinating activities with other teams
3. Challenges the team – its performance, assumptions, and ways of working
4. Performs team tasks – participating in, intervening in, or otherwise performing some of the team's tasks works
5. Solves problems – diagnosing and resolving issues that prevent performance
6. Provide resources – for example, information, equipment, finance, and people
7. Encourages team self-management – empowerment, accountability and responsibility
8. Support the team social climate – encouraging positive and supportive behaviours between team members

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M3 - Lesson 2 – Project Management Structure (PMS), Grant Agreement (GA) and Consortium Agreement (CA)

Learning outcomes to be developed:

- The student will map the main internal and external actors' involvement across the project management stages and devise a strategy for their timely contribution to the implementation of the project (e.g., Stakeholder Management)
- The student can follow the development of several simultaneous management tasks (e.g., team management, cost management) and prioritize the most relevant ones at different stages of project management

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and assessment**	**Timing**
a) Introduction of the lesson by the teacher - main aims, topics (project life cycle, possible roles - see figure 3; grant and consortium agreement, etc.) b) Instead of a teacher presentation, we can optionally introduce the grant and consortium agreements by the following experience-based activity: students receive a sample GA and CA and based on individual observation (5 mins), they answer the following questions (this can be done via Kahoot, Mentimeter or moodle quiz): GA or CA? - It is signed by the funding agency and the beneficiaries. (GA) - It is concluded between the project coordinator institution and all the project partners. (CA) - It sets the framework for the project implementation and the interaction between all project partners (coordinator organisation, project coordinator - principal investigator, project manager, partners organisation). (CA) - It has to follow the model grant agreement prepared by the EC. (GA)		**15 mins** 15mins 15mins

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c) Collaborative compilation of the Course Glossary: This activity is also included in Module 2, but for the sake of the students not attending the fits semester, it is recommended to include it n this module as well. Depending on the number of students, we ask them to work independently or in pairs. Students work in an online document which is editable on the course's online (Teams/Google, etc.) interface - Before the class, we upload a semy-empty table including only definitions and a list of key terms below the table. - Students have 5 minutes to drag and drop the given terms to their place (See the table with the solutions in Annex 2. 1. A - The teacher projects the result (the completed table), asks students to correct it where needed, and corrects answers/mistakes where needed. This Course Glossary must be available later for students because it will help them to understand and compile documents, so it is recommended to upload a pdf to a well-visible part of the course's online interface. It can also be used for short start-classing tests.		
d) First PBL task in the classroom - combined classroom and group work: The teams receive and study the text of a submitted proposal (all of the teams receive the same text, the teacher can select one of the texts that can be found here) <u>Classroom work:</u> • Formation of **groups of 4 students**. • **Presentation of the project proposal by the teacher.** • Explanation of the Storyline method and the next task. <u>Group work:</u> • Students read the document presenting the different characters (See Annex 3. 2. D). • Each of them chooses one, on the base of a group discussion. • They complete the profiles. • Info on the Storyline rules: think about choosing a fictive identity/avatar <u>Classroom work:</u> Explanation of the responsibilities of o the (fictive) project coordination team within the consortium,		**10 mins** **10 mins** **10 mins**

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- within the organisation (University as environment). For example, in the case of a university, one can refer to the project management office at the institution, and the framework given by the official procedures.
- the roles and responsibilities within a project coordination team such as responsible for 'professional', 'finances', 'communication', 'leader' (resp. for coordination/management) 'expert'

<u>Group work:</u>

- Choosing a leader
- Discussing the following questions with the moderation of the leader: Which role would you like to fulfil in the project coordination team (PCT)? Groups decide on the roles assigned to each student within the small group, i. e. the "project coordination team" with the help of the following table:

	Select one from these: - professional - finances - communication - leader (resp. for coordination/management) expert	The competencies that enable you (i. e. your avatar) for the given roles
choice #1		
choice #2		

- The teams compare their tables and decide together on the functions. If more students would like to be the leader, the teacher helps the group to decide. If more students would like to fulfil or avoid a certain function, the team leader appoints/convinces the students for the given function.

10 mins

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• The teacher explains the homework (to prepare 1 or 2 plans/student) according to their role within the team • The teacher gives guidance for the team leaders to set a **doodle voting** for a team meeting (team members plus teacher included) during the following week **e) Group work: new content with an "expert jigsaw" method** describing the main parts of the Project Management Plan (PMP). (Description for Expert jigsaw method is available in Annex 1 • each student in the group gets and studies a different 1-2 pages long document including an example (see examples for project management plans here) such as: ▪ schedule management plan; ▪ costs management plan; ▪ quality management plan; ▪ risk management plan. The general description of the given plan and templates for them are available in Annexes 3. 2. A, 3. 2. B and 3. 2. C. • Students have to answer individually the following questions in writing: *What is the aim of this plan? How is it used in the course of the project? Who is responsible for its implementation in the course of the project?* (10 mins) • Students receiving the same plans then move to expert groups and discuss their answers and prepare a scheme for the presentation of the given plan. (10 mins) They can use a common online interface for this, e. g. a shared Google Drive document. • They go back to their jigsaw group. The members of the jigsaw group present to the others the features of the different parts of the project management plan: aims, content, and function of the given plan type. (10 mins) • Feedback and summary in the form of a guided conversation led by the teacher. (10 mins) **Classroom discussion and wrap-up:** *Guiding instructions for the teacher to moderate the conversation:* • *Ask the students: Now I am first interested in the opinion of those who did not receive the given plan, so please do not answer if you were working with it.*		**40 mins**

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• *Do not allow the students to answer the question immediately, ask them to raise their hands instead if they have an idea. Depending on the difficulty level of the question, wait for 10-20 minutes until more of them indicate that they have an answer - this will enhance students' activity.* Questions: 1. What can be the purpose of the requirement management/scope management plan? 2. Why is it important to compline a stakeholder management plan? What can be its purpose within a project? 3. Who can be responsible for the elaboration of the given plan? Who participates in the work (which department for example)? 4. In case there is a reschedule in the given plan, which other plans have to be revised? (Or an example of an unforeseen event can be provided, and the class can brainstorm on its impact on the different plans. Examples: a) a multiplier event is not feasible, due to the pandemic b) the principal investigator quit his current job and the project as well c) the price of event organization/staff costs prove to be much higher than planned, due to the major changes in the institutional regulations d) one of the partners does not complete the task undertaken, thus the partnership cannot continue the work according to the work plan e) 5. What do you assume to be the most important type of plan, affecting the most aspects of the project implementation? The Project Management Plan components can be found in Annex 3. 2. E. **f) Homework:** Individual assignment: in every group, the student responsible for • **communication:** elaborates the communication management plan and identifies potential stakeholders • **finances:** starts to elaborate (and collect his questions on) resources management plan • **professional issues**: elaborates the quality management plan; • **coordination and leadership**: starts to elaborate the schedule management plan	**0-20 points**	

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• **team members & teacher:** send their doodle vote by the end of the given day
• **team leader:**
  ○ prepares an agenda and sends it to the members who can complete it
  ○ appoints a group member to write notes
  ○ after the meeting, sends out the reminder to the team members and the teacher
Tasks for the meeting
• As part of the project management plan, start elaborating the project scope management plan summarizing the work breakdown structure (WBS) based on a given Gantt chart and the project proposal (stages, outputs, partners) (See the worksheet, e. g. the table to be filled out in Annex 3.2.A);
• the teacher provides the teams with a short article summarizing the main pieces of advice on how to run an effective meeting (https://hbr.org/2015/11/two-things-to-do-after-every-meeting)		

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Annex 3. 2. A – Schedule management plan

Plan defining the criteria and the activities for developing, monitoring, and controlling the project schedule.

Part 1: Individual task

Based on the definition, and the text of the Simpatico project, fill out the following table.

The Management Plan of the Simpatico project can be accessed here: https://drive.google.com/file/d/1_PNUMSKhBVr7j_AzuF70r_o7QF1H6-Oi/view?usp=sharing

What is the aim of this plan?	
How is it used in the course of the project? What is its function?	
Who is responsible for its implementation in the course of the project in the project team?	

Part 2: Expert team

Within the expert team, the members discuss their answers and prepare a scheme for the presentation of the given plan.

Part 3: Jigsaw group

Within the jigsaw group, the members present each other with the given plan they worked on in the expert group. The other group members take notes since in the plenary session they might be the ones answering the question regarding the given plan.

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Annex 3.2. B – Risk management plan

Plan where is defined how to conduct risk management activities for a project, and how they will be structured and performed.

This plan includes the following components:

- Risk strategy - Describes the general approach to how the project risks will be managed.
- Methodology - Defines the specific approaches, tools, and data sources that will be used to perform risk management on the project.
- Roles and responsibilities - Defines the lead, support, and risk management team members for each type of activity described in the risk management plan and establishes their respective responsibilities.

Timing - Defines when and how often the Project Risk Management processes will be performed during the project, in accordance with the project schedule;

Part 1.: Individual task

Based on the definition, and the text of the Simpatico project, fill out the following table.

The Management Plan of the Simpatico project can be accessed here: https://drive.google.com/file/d/1_PNUMSKhBVr7j_AzuF70r_o7QF1H6-Oi/view?usp=sharing

What is the aim of this plan?	
How is it used in the course of the project?	
Who is responsible for its implementation in the course of the project?	

Part 2: Expert team

Within the expert team, the members discuss their answers and prepare a scheme for the presentation of the given plan.

Part 3: Jigsaw group

Within the jigsaw group, the members present each other with the given plan they worked on in the expert group. The other group members take notes since in the plenary session they might be the ones answering the question regarding the given plan.

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Annex 3. 2. C – Cost management plan

Plan where is defined how the project costs will be estimated, budgeted, managed, monitored, and controlled.

Part 1: Individual task

Based on the definition, and the text of the Simpatico project, fill out the following table.

The Management Plan of the Simpatico project can be accessed here: https://drive.google.com/file/d/1_PNUMSKhBVr7j_AzuF70r_o7QF1H6-Oi/view?usp=sharing

What is the aim of this plan?	
How is it used in the course of the project?	
Who is responsible for its implementation in the course of the project?	

Part 2: Expert team

Within the expert team, the members discuss their answers and prepare a scheme for the presentation of the given plan.

Part 3: Jigsaw group

Within the jigsaw group, the members present each other with the given plan they worked on in the expert group. The other group members take notes since in the plenary session they might be the ones answering the question regarding the given plan.

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Annex 3. 2. D – Storyline character profiles

1. The Shy

OR

Name	Lucy OR Andrew (OR you can use another name)
Age	35
Ambitions/passions Feel free to complete it!	family
Challenges/facts related to life circumstances Feel free to complete it!	Has school-aged children
General personality traits Feel free to complete it!	introverted
Strengths	Reliable, Very devoted, Careful Friendly Attentive can influence others Cooperative, adaptable Good organizer Creative
Weaknesses	low level of self-confidence undertakes too much instead of the others and then resents the others bad at handling stress, Slow Avoids Confrontation Can easily be offended
You can add other traits:	

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2. The “artist”

OR

Name	Rebecca/Fred (OR you can use another name)
Age	28
Ambitions/passions Feel free to complete it!	is an amateur artist Is considering starting an own firm
Challenges/facts related to life circumstances Feel free to complete it!	very good acquaintances and financial background, expensive hobbies
General personality traits Feel free to complete it!	extroverted
Strengths	Friendly Creative Risk-taking Flexible Optimistic Ambitious Cooperative Attentive
Weaknesses	Less reliable bad in time management Self-confident Gossiper copes badly with boring tasks
You can add other traits:	

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3. The bossy

OR

Name	Julia/Randy
Age	42
Ambitions/passion	had a sports career earlier, is still actively sporting
challenges/facts related to life circumstances	single, has almost no private life, her/his passion is mostly his/her workplace
General personality traits	extroverted
Strengths	Hardworking Proactive Fast Optimistic ambitious Good organiser Precise Assertive
Weaknesses	Workaholic Impulsive bad at handling stress Impatient Talks too much Prones to be autochratic
You can add other traits:	

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4. The Pessimistic

OR

Name	Margaret/Greg (OR you can use another name)
Age	50-60
Ambitions/passions Feel free to complete it!	
Challenges/facts related to life circumstances Feel free to complete it!	Copes with health problems
General personality traits Feel free to complete it!	introverted
Strengths	very devoted Dogmatic/pragmatic Has good diplomatic skills Very experienced High level of professional skills High performance Good organiser Precise Perfectionist Can work under pressure
Weaknesses Feel free to complete it!	Not so friendly/cooperative with his/her colleagues Passive Lack of flexibility
You can add other traits:	

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Annex 3. 2. E – Project Management Plan components

Plan	Description
Scope Management Plan	Plan where is described how the scope framework of the project will be defined, developed, monitored, controlled, and validated. This plan includes the following components: ● Process for preparing a project scope statement; ● Process that enables the creation of the WBS from the detailed project scope statement; ● Process that establishes how the scope baseline will be approved and maintained; and ● Process that specifies how formal acceptance of the completed project deliverables will be obtained.
Requirements management plan	Plan where is described how the project requirements will be analysed, documented, and managed. This plan includes the following components: ● How requirements activities will be planned, tracked, and reported; ● Configuration management activities such as: how changes will be initiated; how impacts will be analysed; how they will be traced, tracked, and reported; as well as the authorization levels required to approve these changes; ● Requirements prioritization process; ● Metrics that will be used and the rationale for using them; and ● Traceability structure that reflects the requirement attributes captured on the traceability matrix.
Schedule management plan	Plan including the roadmap for how the project will be executed, the criteria and the activities for developing, monitoring, and controlling the project schedule.
Resources management plan	The plan that includes detailed information regarding the rates (personnel and other resources), estimation of travel costs, and other foreseen costs that are necessary to estimate the overall project budget, providing guidance on how project resources should be categorized, allocated, managed, and released. This plan includes the following components: ● Identification of resources - Methods for identifying and quantifying team and physical resources needed; ● Acquiring resources - Guidance on how to acquire the team and physical resources for the project; ● Roles and responsibilities – The function assumed by, or designated to a team member; The rights to apply project resources, make decisions, sign approvals, and accept deliverables; ● Project team resource management - Guidance on how project team resources should be defined, staffed, managed, and eventually released; ● Training - Training strategies for team members; ● Team development - Methods for developing the project team;

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	● Resource control - Methods for ensuring adequate physical resources are available as needed and that the acquisition of physical resources is adapted to the project needs.
Costs management plan	Plan where is defined how the project costs will be estimated, budgeted, managed, monitored, and controlled. It's defined also the money transference between partners.
Communication management plan	Plan where it is described how project communications will be planned, structured, implemented and monitored to ensure their effectiveness. It could also define specific communications technologies that are required in the project.
Quality management plan	Plan where is identified the quality requirements and/or standards for the project and its deliverables and documenting how the project will demonstrate compliance with quality requirements and/ or standards.
Risk management plan	Plan where is defined how to conduct risk management activities for a project, and how they will be structured and performed. This plan includes the following components: ● Risk strategy – Describes the general approach on how the project risks will be managed. ● Methodology – Defines the specific approaches, tools, and data sources that will be used to perform risk management on the project. ● Roles and responsibilities – Defines the lead, support, and risk management team members for each type of activity described in the risk management plan, and establishes their respective responsibilities. ● Timing – Defines when and how often the Project Risk Management processes will be performed during the project, in accordance with the project schedule;
Procurement management plan	Plan where is defined the activities to be undertaken during the procurement (purchasing) process.
Stakeholder management plan	Plan where is defined and documented the approaches and actions that will increase support and minimize the negative impacts of stakeholders throughout the project development. In this plan it should also be identified the key stakeholders along with the level of power and influence they may have on the project.

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M3 - Lesson 3 – Project management integration, Monitoring and Control I.

Learning outcomes to be developed:

- The student has a basic insight into some main time and project management tools and methodologies.
- The student will be able to identify and measure the resources needed for project implementation (team and their time allocation, the physical and infrastructural resources needed, plus other needs) and to integrate this information with a budget and a calendar plan (e.g. Project Management Plan).
- The student will apply methodologies and tools for effective project management, including time, people, and task management, as well as reporting.
- The student will be able to contribute to the identification and prioritization of the management, financial and legal issues to be addressed at different stages of the project life cycle (e.g., Project Integration Management).

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and assessment**	**Timing**
a) Feedback on the homework: discussing the challenges and sharing the good practices. **b) Frontal presentation of the teacher:** • Briefing on financial management issues. • Demonstration of an online PM tool such as e.g., Asana, Monday, Redmine, Todoist, Notion etc. see more here – teacher makes the voice in advance according to his/her preferences https://project-management.com/top-10-project-management-software/ • grounding the next activity (organizing a kick-off meeting): presentation of the main parts, goals, and features of a kick-off meeting in 5 minutes		**10 mins** **30 mins**

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d) PBL task:

- Storyline new event: Letter received from the head of unit (See Annex 3. 3. A below)
- starting the organization of a kick-off meeting, the leader discusses with the members of the project team the tasks and the responsibilities
- time management – with the help of a PM tool indicates the WBS.
- they finalize the agenda of the kick-off meeting – send it with an official letter to the teacher
- feedback on the agendas, and discuss the role of RMA in the preparation and execution of the kick-off meeting.

0-6 points (filling in the table)

25 mins

f) Exit ticket

With the help of Socrative or other platforms, students fill out an "exit ticket". Possible questions:

- How well did you understand today's material?
- What did you learn from today's material?
- Answer the teacher's question (for example: mention those topics that need further clarification).

5 mins

g) Explanation of the individual homework: (PBL)

- Optional task for extra points: Make crib notes for yourself helping to remember the main financial terms

5 points – for optional task

5 mins

term	features	example
...		
...		
...		
...		
...		

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• Suggestions for the detailed budget (amount of grant, goals) for their project and instructions using the key terms of the Lesson's text on financial issues (e. g. flat rate, direct costs, eligibility etc.) with justification • Instruction for the students: keep in mind the interest of your avatar and try to assign the most preferable and still justifiable amounts to the activities related to your area • prepare with arguments for the next lesson where the budget will be discussed in the form of a team negotiation process *Example for homework:* 1. *Work in the Letter from the Head of Unit document (Annex 3. 3. A)* 2. *Prepare a draft agenda for the meeting of the TELLME project - The kick-off meeting should last 1,5 days and the schedule should include 10-15 main schedule items/lines. It is recommended to use the Gantt chart of the project and the text of the application.* 2. *Collect the questions you suggest we discuss: This means that please collect at least 3 questions that you would like to ask in the class (about things that are unclear to you.)* 3. *Discuss 5 items of the task distribution (within your working group) by filling in the table in the shared document.* 5. *Invite us to the project created in your chosen PM app* 6. *In the PM team, create at least 5 tasks (related to the kick-off organizing, they can be the same as the ones included in the table), assigned them to team members and set deadlines for them.*		

Further reading for the teacher on the stages of group development:

https://hr.mit.edu/learning-topics/teams/articles/stages-development;
https://hr.mit.edu/learning-topics/teams/articles/models)

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Annex 3. 3. A – Letter from the Head of Unit

Dear Colleagues,
First, please discuss your impressions about the question: Which of the decision-making models do you usually use? Are you satisfied with it? Report on your answer in one sentence here:

Our next task is to organize the kick-off meeting of the TELLME project. It will require serious effort from all of us, but your working group will be responsible for the coordination of its organization. We will discuss the main questions related to it together with the whole unit, but this discussion would be much more effective if you discuss some topics in advance. So, before the meeting,

- please prepare a draft agenda for the meeting,
- collect the questions you suggest we discuss,
- discuss some first items of the task distribution (within your working group) and fill in the following table.

Kick-off meeting checklist					
Task	Deadline	Responsible	Contributors	Comments	Ready?

- Then go to your chosen PM app and create tasks, assigned them to team members and set deadlines for them

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M3 - Lesson 4 – Project management integration, Monitoring and Control II.

Learning outcomes to be developed:

- The student has a basic insight into some main time and project management tools and methodologies.
- The student will be able to identify and measure the resources needed for project implementation (team and their time allocation, the physical and infrastructural resources needed, plus other needs) and to integrate this information with a budget and a calendar plan (e.g., Project Management Plan).
- The student will apply methodologies and tools for effective project management, including time, people, and task management, as well as reporting.
- The student will be able to contribute to the identification and prioritization of the management, financial and legal issues to be addressed at different stages of the project life cycle (e.g., Project Integration Management).

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and assessment**	**Timing**

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a) Short revision of the main points of the first lesson the teacher prepares a crossword including 8-10 words in connection with the financial management of the project with the help of crossword labs. The students fill out the crossword individually (5 mins). They discuss the results. **b) frontal presentation of the teacher** – financial monitoring and the role of RMA (the question of compulsory supportive documents – give examples for all of them); project reporting – the role of RMA; communication (Closing this session, the students could talk about their style on the first team meeting.) **c) PBL task** • Storyline event: the team leader so far gets new duties within the organization which do not make it possible for him/her to fulfil this role – the team has to decide on the person of a new leader. (See Annex 3. 4. A – Letter from the Head of Unit) • The groups have to find out a new "Storyline" event-generating situation where conflict management and assertiveness have to be applied, e. g. a partner withdraws from the project and that will force a new distribution of work packages and budget per partner. Teams have to identify the different costs arising in the amended work packages of the project. The groups are requested to fill out a given excel table. You can optionally use the situation presented in the above-mentioned letter as well (Annex 3. 4. A)		**10 mins** **15 mins** **30 mins**

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stakeholdermap.com
Project Management, project planning, templates and advice

Work Breakdown Structure Table

Provide basic information about the project including: Project Title – The proper name used to identify this project; Project Working Title - The working name or acronym that will be used for the project; Project Manager - the person with responsibility for the successful delivery of the project to time cost and quality. Project Sponor - the person ultimately accountable for the success of the project. Prepared by – The person(s) preparing this document; Date/Control Number – The date the plan is finalized and the change or configuration item control number assigned.

Project Title:		**Project Working Title:**	
Project Manager:		**Project Sponsor:**	
Prepared by:		**Date / Control Number:**	

For more tips on completing this template see WBS Excel template

Element Number	WBS Elements Activity, Task, or Sub-Task Name	Definition of Activity or Task (Description)	Responsible Person or Group	Estimated (E) or Actual (A) Cost (Cross reference to budget)	Project Phase (Cross reference to schedule)
The unique reference ID for the activity or task.	*Enter the name or title of the Task, Sub-task, Activity or Deliverable.*	*Provide a brief description of this Activity, Task or Sub-Task.*	*Enter the person or group who are responsible*	*Enter the estimate or actual cost of the activity or task or add a cross reference to the budget.*	*Provide the name or number of the Project phase that this activity falls into.*

Teacher's question to the groups: Which topics, and tasks generated discussion among the group members? How did the group solve the situation?
The general conclusion of the financial topic by the teacher - introduction of the homework.

10 mins

d) Frontal teacher presentation

- the 3 types of conflict according to the theory of Jehn and Mannix (2001)
- their main conclusions and aspects related to project work

2 slides are recommended: the 3 types on the first, and the conclusions on the second

Optionally can be awarded extra points.

20 mins

e) Class activity: exercise helping to understand the types of the Thomas-Kilmann model of conflict management.
Each conflict management strategy will be studied by a group of 3, but members of the groups have to find each other based on the information handed out to them. Every student receives a word (integrating /dominating /obliging /avoiding /compromising) or a description or an

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example (a short situation illustrating the given conflict management type). • As all groups receive the same example for conflict situations, each group demonstrates the given conflict management way (2 students) and the 3rd provides an explanation: what is its name, advantages, disadvantages, in what kind of situation is it useful? • Each group presents their way of solving the conflict situation, and the others evaluate and analyse the small situation practices. → Reflecting on their own behaviour → Re-playing or discussing the behaviours observed in the situations faced in the first half of the lesson with different attitudes/solutions **g) Explanation of the homework** Write a short outline (half a page) covering the following topics: • What kind of conflict (3 types by Jehn-Mannix) did the team face when solving the PBL task? (In case you did not have any conflict: Which type of conflict did experience most often in teamwork?) • What was the strategy (5 types by Thomas-Kilmann) applied by the different avatars? (In case of lacking conflicts: what is the strategy you usually tend to apply?) **Or:** A project partner indicates that it would not be able to fully perform its tasks. • How would the groups deal with the situation? • Formal letter to the consortium, compromise on the situation, re-arrangement of the timing (Gantt as well if necessary), re-allocation of costs (letter to the national agency?) **Optional tasks** for extra points: • make a 1-page crib note of the major terms in the lesson • and write an essay of min. 400 words on reflections on their own conflict management strategies applied so far	**0-15 points** **5 points**	**5 mins**

Resources for activities described in e):

- table:

https://www.uscg.mil/Portals/0/seniorleadership/chaplain/5%20types%20of%20Conflict%20Styles%20Questionnaire.pdf?ver=2020-01-16-150312-330

- background material

https://kilmanndiagnostics.com/wp-content/uploads/2018/03/TKI_Sample_Report.pdf

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Online test: https://psycho-tests.com/test/conflict-mode

- evaluation

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Annex 3. 4. A – Letter from the Head of Unit

Name of the working group:

Dear Colleagues,

Please discuss the questions below very briefly. Unfortunately, you have only 10 minutes for this, because our all-staff meeting starts in 10 minutes, but I hope that you can at least agree on the first two questions and then you can continue the discussion after the big meeting.

1. Due to an unexpected new project launch, we would like to assign a new task to your current team leader who will stay in your team but will not have time for the leadership tasks. Therefore, we would like the group to make a joint proposal for the appointment of the next group leader.
2. Please start discussing the most adequate distribution of the staff costs included in the attached financial table. It includes only the costs that apply to your work. The final decision will be made by us; however, we will take into consideration the result of your agreement. You probably will not be able to finalize this plan within 10 minutes, however, start to think about it, and you will continue the discussion after the all-staff meeting.

Best regards,
Heads of Unit

Decisions made

1. New team leader: ……
2. Budget distribution (see the excel in the files)

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Annex 3. 4. B – Letter from the Head of Unit

Dear Colleagues,

Our institution, as the coordinator of the project, must support project partners in clear financial planning. The task of your working group will be to prepare the staff budget of Ljudska Univerza Žalec (Slovenia). For this, please complete the yellow cells of the attached financial table summarizing the distribution of the staff costs that can be covered from the amount given for "Intellectual Output costs", by outputs and positions. Please calculate on the base of the following aspects:

- Please use the financial tables available in the TELLME proposal, pages 55-58.
- Please use the attached Excel table for your calculations, where costs have to be divided according to the 3 different outputs (O1, O2 and O3) and position types (regardless of how many people hold the same position).
- I need to see the time belonging to each output as well, this is necessary for financial planning.

Please continue working on your Gantt charts according to the dates and deadlines defined in the proposal (see it here), by indicating each output (in different rows) and Teaching-learning Activities (which can be indicated in one row).
The recommended time devoted altogether for this task is approximately 1h 20 min per person.
Please upload your completed tables in the channel of your working group.

Best regards,
Head of Unit

Name of institution:	Ljudska Univerza Žalec	Country:	Slovenia
Costs for intellectual outputs			
position teacher/trainer/researcher or manager or administrative support staff	output number (O1/O2/O3)	period of the output implementation	amount

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M3 - Lesson 5 – Quality and Risk Management

Learning outcomes to be developed:

- The student is aware of the concept and methodology of risk management
- The student can effectively define and articulate, brainstorm and select the most adequate management solutions and evaluate their effects in achieving the project's goals

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and assessment**	**Timing**
a) Short feedback (10 mins) on the homework **A short revision** of the theoretical framework/concepts of lesson 4 (5 mins) by completing a half-empty mind map (e. g. coggle.com)	**5 points**	**15 mins**
b) Presentation by the teacher: main aspects of quality and risk management. Showing an example of a risk assessment chart.		**10 mins**
c) Brainstorming (by virtual or classical whiteboard) on different risks and their possible position in a risk matrix (see Annex 3. 5. A). Summary of the outcome of the brainstorming by the teacher.		**5 mins**
d) PBL task: • Draw a risk assessment chart for their actual project: identify the risks and their probability, using one of the risk management tables available in Annex 3. 5. A. • Present the table in class. • Teacher feedback on the presentations.	**0-10 points**	**25 mins**
f) PBL activity: Stages of the team development (Sources: Mindtools or MIT website article) Based on the model of Tuckman, the students will be assigned two types of tasks: one individual and one group task		**25 mins**

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- First, each student receives a table with the 5 phases of the model, and (s)he has to fill out the first column, based on his/her opinion, in which phase is the group currently (with reasoning).
- Then, the PBL group gets together and share their opinion.
- The groups give a briefing on their findings.

e) PBL activity:

Individual work:

- Students read and study the model of Belbin's 9 team roles (1970) (a one-page long text summarizing the 9 main types of group roles). See also the ppt in Annex 3.5.A
- Reflexion: On the base of the description of the text, what are the roles (max 2) you think you have fulfilled so far in this PBL team, and what do you think about the members of your teams? Use the table below for thinking about it.

Optionally can be awarded extra points.

10 min

Group work:

- PBL groups turn to each other and discuss the results
- The groups formulate their questions towards the teacher regarding their results/controversies
- (Possible question from the teacher: What are the missing roles? What are the roles on which you could not agree?)

15 min

Name of the student	Team roles perceived so far (max 2)
	#1 #2
	#1 #2
	#1 #2
	#1 #2

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○ Closing remarks from the teacher ▪ these roles are dynamic and are not necessarily remain the same in every environment ▪ read the strengths and weaknesses featuring your type because they might help your self-awareness and personal development **f) Homework:** because of Covid 19, travel restrictions are introduced. The transnational project meeting is scheduled for 2 weeks. How do you handle the situation? 1. Write a letter to partners, find out their intentions, and find a compromise. 2. Write to the national agency as well – find out their standpoint 3. Prepare an infographic on the risks posed by the situation.	**0-15 points**	**5 mins**

Further readings for the teacher

Gillian Smith, Pat Yates: Team role theory in higher education. www.trainingjournal.com March 2011 https://www.belbin.com/media/1819/tj-article-team-role-theory-in-higher-education.pdf

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Annex 3. 5. A – Template for risk matrix

		Impact		
		low	medium	high
Probability	high			
	medium			
	low			

Source: https://www.stakeholdermap.com/risk/risk-assessment.html

Another option to use:
https://www.stakeholdermap.com/risk/risk-assessment-matrix-4x4.html

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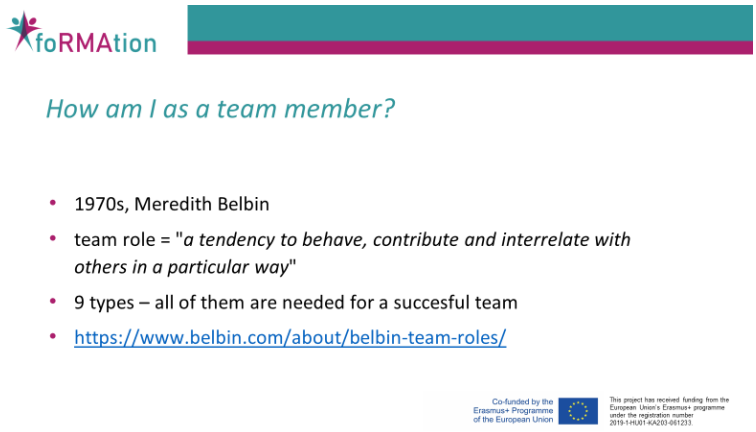
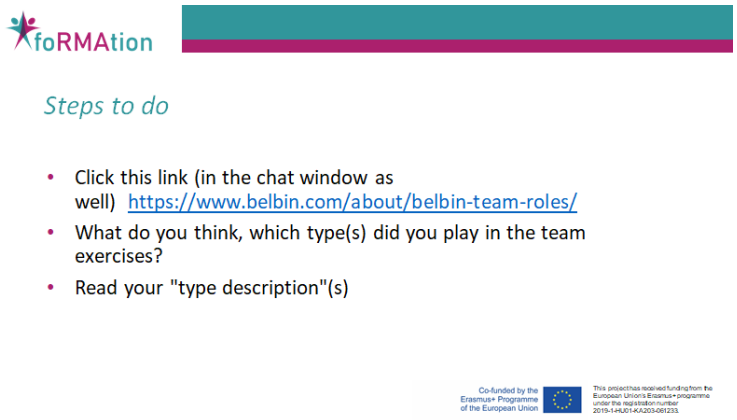
Annex 3. 5. B – 9 main types of group roles

The Ppt file is available at
https://www.dropbox.com/s/ztf0ggiy5hhmytw/Annex_3.5.A_Belbin.pptx?dl=0





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Steps to do

Sit around in your PBL groups
Discuss one by one :
A) How do you evaluate yourself according to these types?
B) Complete each other's feedback with some remarks

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M3 - Lesson 6 – Team Management and leadership

Learning outcomes to be developed:

- The student has a basic insight into the theories discussing the features and dynamics of team roles, procession and decision making
- The student will get familiar with the most important leadership models
- The student can select and apply the most adequate leadership model according to the given circumstances

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and assessment**	**Timing**
a) Short feedback on the homework **b) Frontal presentation by the teacher:** introduction to leadership models. **c) Class activity:** leadership styles (based on the study of Moregeson) • The teacher describes the 15 elements shortly (1 sentence each). • The task of the students is twofold: (1) divide the elements into 3 groups: strength, neutral, weakness; (2) (s)he chooses 1 strength and 1 weakness that characterises him/her; (s)he does the same for a groupmate as well (has to choose blindly from a paper). • The students discuss how to improve in the future based on the task. **d) PBL task:** • a new event in the Storyline: (due to a conflict or problem) the leader of the team resigns and roles in them change: an acting leader is temporarily appointed • the acting leader is facing a challenge.	**0-10 points**	**10 mins** **10 mins** **25 mins**

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Tasks: distribution of tasks, agreement on deadlines, communication with project partners. Write formal letters to partners (the team leader should "sign" the letters) – the team has to agree on content, style, etc. On the base of the theories learnt, evaluating the performance of the style and the tools of the 2 former leaders. For a detailed explanation of tasks, see Annex 3. 6. A – Letter from the Head of Unit. **Homework** • optional task for extra points: select (short) movie scenes presenting certain leadership styles **e) Quick end-of-lesson feedback for the teacher** Competition by Socrative or Wordwall game with quiz questions related to the content of the lesson.	**5 points** *The top three achievers receive extra points.*	**5 mins**

Further readings for the teacher

- Anna B. Kayes Edd, D. Christopher Kayes PhD
- Team Leadership Questionnaire - Leader Edition: Improving leadership through learning https://www.academia.edu/24234948/Full_Range_Leadership_Model

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Annex 3. 6. A – Letter from the Head of Unit

Dear Colleagues,

Thank you for your demanding work and the efforts you invested in the organization of the kick-off meeting.
Your tasks for today and the next week

1. Unfortunately, a change is needed again in the structure of your team: though your current team leader performed an excellent job, a new life situation has arisen that currently would make it difficult to perform team leader duties. Therefore, I would like to ask you to choose a new team leader who has not yet been in this position so far – this is an opportunity for development.

Please indicate here the name of the new team leader: …….

2. The closing output of Module 3 is a Project Management Plan together, which has to be compiled in collaborative work, according to the instructions below.

a. This document will include various plans but has to be edited into one single document. Some of these have already been written in the past weeks, and some parts will be new.
b. Organize the writing process: divide the task into subtasks, and discuss the internal deadlines and the duties of each team member with the help of your PM application.
c. Please note that the points received will be shared among group members according to the proportion of their contribution to the result.

Best regards,
Head of Unit

Content elements required for the "Project Management Plan" document

1. A cover page for the PM plan, indicating the fictive names of the contributors and the team's name.
2. Table of contents (the chapters will be the different project management plans, Gantt chart, and annex).
3. Description of the Tellme project (project summary [300-400 words] - already done, see the homework including the schedule management plan)

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4. Deliverables and milestones (with deadlines, and leaders of the tasks if applicable - already done, see the homework including the schedule management plan)
5. Risk management plan: prepare a 3x3 risk matrix and indicate 5 risks (with description, place in the matrix (indicating the rate of probability and impact and indicate the strategy to be applied to tackle it). Use the template available in the General > Files >
6. Staff costs planned for the intellectual outputs, cost of **one of the partner institutions** – it was already done, so just check (and if needed, correct) and insert it into the PM plan
7. Include a budget summary **for the same institution** as in the case of the budget for intellectual outputs. Fill in the yellow cells of the empty table:

Name of institution:	
Country:	
	amount (EUR)
Staff costs (for intellectual outputs)	
Project management costs (can be used for anything)	
Travel costs of transnational meetings	
Travel costs of teaching-learning activities	
TOTAL GRANT	

8. Project Gantt chart - you have already done it, so just check (and if needed, correct) and insert it into the PM plan.
9. As an annex to the plan, include the agenda or the kick-off meeting - just check and complete it.

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M3 - Lesson 7 – Present and discuss a Project Management Plan

Learning outcomes to be developed:

- The student can follow the development of several simultaneous management tasks (eg. team management, cost management) and prioritize the most relevant ones at different stages of project management.
- The student is critical regarding own work and that of others taking on a constructive attitude.
- The student takes responsibility for their own work.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and assessment**	**Timing**
a) Presentation of homework and movie scenes selected Based on the movie scenes, the group discuss the different leadership styles (based on a given theoretical framework/article). **b) PBL task** • The groups finalize and submit their detailed project management plan • They present them to each other, in the form of an international webinar or stakeholder forum – we can invite for this event 2-3 representatives (in the form of online presence) of different actors related to research projects, such as o an RMA/financial officer from our institution o a researcher from our institution o a representative of a national agency dealing with the governance/allocation of a given fund o representatives of a company, NGO, professional association etc. working with our university Evaluation criteria can be found in Annex 3. 7. A – Evaluation table for the Project Management Plan. *Peer evaluation: students give points to each other's presentation with supporting arguments. The results of peer evaluation will be counted into the final grade in a limited way.*	**0-45 points**	**20 mins** **60 mins**

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Teachers' evaluation: teacher gives points • *for the accuracy and adequacy of students' peer evaluation* • *for the presentation according to the feedback of the invited experts*		

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Annex 3. 7. A – Evaluation table for the Project Management Plan

	Content elements	Questions supporting evaluation	Max. number of points	Received points
1.	Cover page	Is it designed? Does it contain the necessary information?	2	
2.	Table of contents	Does it provide hyperlinks to headings within the document? Is it formatted?	3	
3.	Description of the Tellme project	Does it include at least 300 and no more than 400 words? Is it grammatically, correct? Is it formulated by the team and reflects the own understanding? Does it refer to - the novelty - the importance of the aims, - the main objectives - and the activities?	5	
4.	Deliverables and milestones	- Does it include each deliverable and milestone? - Are each of them assigned to one of the partners?	5	
5.	Risk management plan	- Does the risk matrix include each element: probability, impact, high/medium/low levels? - Does it include at least 5 risks in the form of a whole sentence? - Do the measures correspond to the risks and are they well elaborated?	10	
6.	Budget 1: Staff costs planned for the intellectual outputs	Does it include the correct numbers and data? (In case it was needed, has it been corrected?)	2	
7.	Budget 2: a budget summary for a specific institution	Are the yellow cells filled in? Are the numbers correct, in line with the numbers given in the application?	10	

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8.	Gantt chart	Is the chart include the necessary amount of information? (Outputs, trainings) Is the table well inserted in the document while staying readable? (This can be a challenge.)	3	
9.	Kick-off agenda	Does it include the partners responsible for the given session? Does the agenda include sessions for icebreaking, financial discussion, communication issues, partner introduction, contact details, date and venue info? Is the layout organized and does it support clear communication?	5	
Total			45	

References for Module 3

Axtell, P. (Nov. 26, 2015)*Two Things to Do After Every Meeting*, Harvard Business Review, https://hbr.org/2015/11/two-things-to-do-after-every-meeting

Morgeson, F. P., DeRue, D. S., & Karam, E. P. (2010): Leadership in teams: A functional approach to understanding leadership structures and processes. *Journal of Management, 36*(1), 5–39. https://doi.org/10.1177/0149206309347376

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Module 4 – Research Impact and Public Engagement

M4 - Lesson 1 – Research Impact: why research matters?

Learning outcomes to be developed:

- The student will become familiar and differentiate several RMA facilitation roles that add value to research (such as science communication, societal engagement, technology and knowledge exchange).
- The student can explore several paths to maximise research impact (for example by finding the ways to incorporate the most relevant 17 sustainable development goals into the research project).
- The student can understand the concept of research impact and the different areas of impact beyond academia.
- The student can distinguish between output, outcome and impacts.
- The student can explain the benefits that impact-driven research can bring to the economy and society.

Background information on the PBL tasks

In the course of Module 4, students will work on 3 different projects:

- **a "fictive" project:** the project that was given to them in Module 3 (according to the instruction of Module 3: "In *case it is possible, work with the project proposals created in the previous semester can be continued, but other options have to be taken into consideration as well. An important requirement is that now, fully elaborated but not implemented project proposals are needed (with established phases, stages, activities, and budget*")
- **a "real" project**: *The universities implementing foRMAtion project select a research project within their institution which*
    - *is expected to be still running at the time of the pilot courses*
    - *is strongly related to social impact, i. e. serving a goal directly serving a public interest objective*
    - *includes significant activities related to social engagement and responsibility*
- **foRMAtion** *project: Students will write articles, prepare promotional videos on and study the dissemination strategy of foRMAtion project*

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

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Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and assessment**	**Timing**
a) Short introduction by the teacher: • Topics: research impact, impact-related concepts, evaluation of research impact; impact, output; outcome **b) Activities helping the understanding of theoretical foundations**: **"Think like an activist for a Big Issue!"** Individual tasks deepening the understanding of the scientific impact and the SDG goals - Choose one topic from this 17 item-list: 17 Sustainable Development Goals (SDGs), according to your personal values/preferences (every goal has to be chosen by at least 1 student); in this exercise, you have to think like an activist of this goal - Let's suppose that your institution is running these projects (see in IO2). 1. Astronomers Capture First-Ever Image of a Supermassive Black Hole 2. Editing genes: CRISPR genome editing 3. CERN Detects the Higgs Boson: The Higgs Boson 4. A Vaccine and New Treatments to Fight Ebola: 'Make Ebola a thing of the past: first vaccine against deadly virus approved 5. New Human Relatives: A new species of Homo from the Late Pleistocene of the Philippines 6. Climate change: The last five years were the hottest ever recorded 7. New space missions: Underground Lake of Liquid Water Detected on Mars 8. Fossilized Pigments Reveal the Colors of Dinosaurs: The Colors of Dinosaurs Open a New Window to Study the Past 9. 40,000-year-old cave art may be the world's oldest animal drawing 10. Lock the Planck: the kilogram has a new definition - Review this list of scientific achievements from the aspect of the SDG goal you are fighting for, based on the following questions: What are the achievements 1. that serve the given goal,		**15 mins** **30-40 mins**

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2. that could be connected with it 3. that are against it - Prepare a scheme for a 1-minute-long speech (elevator pitch) to be presented at an internal management meeting for the 15 top leaders of your institution. - summarize your arguments and thoughts in a convincing way - Present your speech in front of the class who will have the opportunity to defend the interests of the project in question - In case of disagreement, listen to each other's arguments and reflect on them in a polite though persuasive way, e. g. by offering compromises, alternative solutions etc.	**0-20 points**	
c) Storyline task: <challenge/task> • the groups prepare a mindmap for their project (that they had been working on in the course of Module 3) • assign and indicate SDGs and possible impacts to their project and indicate them on the mindmap	**0-10 points**	**25 mins**
e) Quick end-of-lesson feedback for the teacher Wordwall game with quiz questions related to the content of the lesson.		**5 mins**
f) Individual homework /PBL task: Write a short article (of min. 150 words) to be published on your project website presenting your project from the aspect of the SDGs: • Which are the SDGs that are fostered by your research activities? • How will this be implemented? • What are the expected results in this area?	**0-20 points**	

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M4 - Lesson 2 – Responsible Research and Innovation approach: the EU drivers for Impact

Learning outcomes to be developed:

- The student can explain Responsible Research and Innovation (RRI) principles and practices in its main thematic elements: public engagement, open access, gender, ethics, science education, science communication and engagement, and impact.
- The student can identify cross-cutting issues in a given project (e.g. ethical and gender issues) and identify different strategies to address them in different research projects.
- The student can argue about the reasons for promoting accountability, responsibility, ethics, and integrity in research.
- The student can contribute to the design of activities and instruments fitted to each of the RRI principles.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and assessment**	**Timing**

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a) Short revision of the main points of the previous lesson: • Kahoot test (after registering, at the Kahoot homepage, you can create easily games helping assessment here). Examples of questions are in Annex 4.2.A. • OR virtual whiteboard (e.g. linoit.com)	**0-5 points**	**10 mins**

b) Classwork: frontal presentation & brainstorming
• identify ethical issues that can emerge during the project – and how to solve them.
• Possible topics: GDPR, issues that might emerge in connection with interviews, etc.
• generating a debate where students can come up with pro and con arguments
• concrete examples related to ethical issues regarding the "real project" (see here) will be discussed in the presentation below)
• Responsible Research and Innovation concept – teamwork:
  ○ students form groups of 2
  ○ the groups read the short outline of RRI, and then answer the following questions:
  ▪ What is RRI? How can it be defined?
  ▪ How many dimensions does it have? What are those?
  ▪ Shortly describe each dimension.
  ▪ Is it important to build a bridge between research and society? What is your opinion about the dimensions?
	Optionally can be awarded extra points.	**15 mins**

c) *The universities implementing the foRMAtion project select a research project within their institution which* • *is expected to be still running at the time of the pilot courses* • *is strongly related to social impact, i. e. serving a goal directly serving a public interest objective* • *includes significant activities related to social engagement and responsibility* Activity related to the chosen project: • invitation of an RMA of the given project team who gives a 10-minute-long presentation on the project, in line with the following topics (these have to be sent to the expert in advance, as well as		**25 mins**

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two resources that will be used in the following lessons: The six main categories of purpose for public engagement and D3.2 Public Engagement Methods and Tools of Engage2020) ○ Basic info on the project: source of the grant, programme, duration, partners, results so far ○ Why did you launch the project, what was the idea behind it? What are the main goals of your project? How does it serve public goals /society? ○ Who are the target groups and the involved stakeholders? ○ How did you find the way to the stakeholders, how did you address them? ○ What are the platforms and the means of dissemination, and who are the target groups of the dissemination? ○ Ongoing and next project tasks, especially in the field of communication ○ What are/can be the purposes of the engagement of the project with the given stakeholders, according to the 6 categories? ○ What are the main messages that you would like to transfer to them? ○ What kind of information do you include in your messages and in which channels to emphasize and support your message? ○ Challenges and the ways to tackle them, especially in the field of ethics and conflict of interests ○ Ethical issues emerged • Questions and answers by the students		
d) PBL/Storyline activities **Classroom activity connecting the two phases:** Introduction In Module 4, an important output of students' activities will be a promotional video that will present students' experiences on the foRMAtion project to different target groups and stakeholders such as - an international professional organization, e.g., EARMA, - BA students at their university (aim: to promote the course within the university)	*Optionally can be awarded extra points.*	**50 mins**

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- the top management of their own institution (aim: to raise awareness regarding RMA as a profession and to promote the project within the institution)
- an NGO or company or a national EU funding agency working in cooperation with the university in other projects or activities (it aims to raise awareness regarding RMA as a profession and promote the university's training in this field).

Each PBL group will prepare a separate, 2-3 minute long video, addressing a different target group. They will define and formulate the message and choose the style of the video according to the relevant strategies of the foRMAtion project.

Letter from the Head of Unit:

- The new and last team leader is finally appointed by the "head of unit" - the new leader should be the 4th student, preferably the one who has been responsible for communication so far. In his letter, the senior leader justifies his choice with the fact that in this phase of the project, expertise in the field of communication is essential.
- The article on public engagement is also attached to the letter, together with the given target group, stakeholders.

Activities to be implemented in this lesson, according to the letter of the head of unit:

- Read the article identifying the six main categories of purpose for public engagement (see: https://www.publicengagement.ac.uk/do-engagement/quality-engagement/purpose)
- Each group is informed about the stakeholder which will be the target group of their video
- They have to study the dissemination plan (relevant strategic document) of foRMAtion project (available here)
- Send a written answer to the questions below, on the base of the article and the dissemination plan in a Google Document that is shared with the team members and the teacher (see Homework).
    - What are/can be the purposes of the engagement of foRMAtion project with the given stakeholder?
    - On the base of your conclusions, formulate 2-3 main messages that the video of your team should transfer.

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○ What kind of information should be included in your video to emphasize and support your message? **e) Homework** • PBL teams further develop their answers for the questions above (PBL/Storyline activities) • Brainstorming about the participants, messages, parts, content, and style (music, place of the video) in the same Google Document that was used in class **Optional individual homework** for extra points: Compile a written answer to the questions above in the form of a formal letter (of 300 words) that will be submitted to the Management Boards, on the base of the article, and the dissemination plan. *Until the next class, the teacher sends feedback, correction & evaluation for this homework, as students will work with it in Lesson 3.*	**0-5 points** 5 points	

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Annex 4.2.A. – Kahoot quiz questions

Which of the following is not a characteristic feature of scientific research?

Rigorous

Replicable

Produces fast results

It is based on previous studies

What is an output?

the changes/developments that occur as a result of a project

the concrete results, deliverables of the research activities

the contribution that research makes to the economy, society, etc.

What is an outcome?

the changes/developments that occur as a result of a project

the contribution that research makes to the economy, society, etc.

the concrete results, deliverables of the research activities

Contribution to policy debates is

an output

an outcome

A publication is an example for

an output

an outcome

Conferences are examples for

outputs

outcomes

Contribution to strategy development is an example for

an output

an outcome

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M4 - Lesson 3 – Pathways to research: planning a strategy for public engagement

Learning outcomes to be developed:

- The student is aware of the major elements and characteristic features of a research engagement plan and the key performance indicators.
- The student will be able to map the different target stakeholders and their roles at different stages of the research project
- The student is able to select the engagement strategies, platforms and communication style suited for each target audience.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**
a) Frontal presentation by the teacher, explanation on the base of questions • public engagement strategy – purpose, stakeholders, process and evaluation. • The 6 stages/levels of public engagement based on the introduction of *D3.2 Public Engagement Methods and Tools of* Engage2020 (pages iii-xi) such as Dialogue, Consulting, Involving, Collaborating, Empowering, and Direct decision. (Presentation for the topic is available here) **b) Case study** - public engagement plan (PEP) of the "real" project presented in Lesson 2. In case they do not have one, the students study the institutional PEP of their university OR the dissemination strategy of foRMAtion project OR the PEP of another institution or project • in groups of 2, students are given the public engagement plan • they have to identify the purpose, stakeholders, and activities based on the documents.		**15 mins** **30 mins**

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• They answer the following questions on the base of the examples of the tables published in *D3.2 Public Engagement Methods and Tools of* Engage2020 http://engage2020.eu/media/D3-2-Public-Engagement-Methods-and-Tools-3.pdf (pages iii-xi): What is the level of public engagement targeted by the document you are studying? How could you further develop/complete this plan? Students answer the questions on writing, in a Google Form created for this purpose. A guide for teachers for the application of Google Forms in classroom work is available in Annex 2. 2. F; it can be accessed online here) • discuss findings in class, using the spreadsheet generated on the base of the responses arrived at the form. **c) PBL task on PEP:** The groups start preparing the Public Engagement Plan (PEP) of their "fictive" project (the one they have been working on from the beginning of the semester) in the form of a mindmap. • They will use a template given by the teacher. • They decide on the main parts of the plan and the leader of the team shares the tasks among the students that they have to prepare as homework. It is recommended that the leader of the group writes a short reminder of the task to make the distribution of parts and tasks clear to the members of the group. **e) PBL task related to the promo video:** • Feedback on the homework (brainstorming): Discuss the distribution of the points (see the remarks in the "Evaluation" column). In case of disagreement, the leader takes the final decision. • The teams receive a letter from the Head of Unit (Annex 4. 3. A). Based on it, the teams decide on the tasks related to the video-making: editor, cameraman, graphic elements, actors etc. All members have to be responsible for the content/text. • on the basis of the homework and the classroom work, making the final decision on the following questions: o What are/can be the purposes of the engagement of foRMAtion project with the given stakeholder? (see the 6 main purposes)	*Optionally can be awarded by extra points.* *The groups receive a common score (max. 40 points) that has to be divided among each other according to the team members' self-evaluation. (Each team member estimates the number of points considered as fair and consistent with its performance)*	**20 mins** **20 mins**

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○ What should be the level of public engagement in the case of your target group? • On the base of the above and the homework, formulate 2-3 main messages that the video of your team should transfer. • What kind of information should be included in your video to emphasize and support your message? • How should be the video: ○ style (emphasizing funny, professional, convincing, surprising etc. features) ○ music? ○ participants ○ basic ideas, story • In case of disagreement, the leader takes the final decision. **e) Homework** 1. Preparing a given part of the PEP of the "fictive" project, according to the instructions of the team leader. (The complete PEP has to be submitted as the "product" of the group.) 2. Each student reflects on his own leadership style on the base of the Team Leadership Questionnaire by Morgeson (2010). This will be used in the course of the next lesson's classroom work.	**20 points**	

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Annex 4. 3. A – Letter from the head of unit

Dear Colleagues,

In the closing phase of our project, an important output of your team will be the compilation of a promotional video that will present foRMAtion project for ....
For this, you will have to get acquainted with foRMAtion project and you have to be aware of the interests of your target group.

1. Read the article identifying the six main categories of purpose for public engagement https://www.publicengagement.ac.uk/do-engagement/quality-engagement/purpose
1. Skim the dissemination plan of foRMAtion project (available at this link)
1. Discuss and in this document, give a written answer to the questions below.
    - What are/can be the objectives, outcomes and impacts of foRMAtion project?
    - Which of these can be interesting/beneficial for your target group? (You can provide platforms for networking, and internal trainings, involve them in international partnerships, represent their interests, increase their visibility, etc.)
    - How could this stakeholder group support your project? (They may help with their network, disseminating information about the project, they may have special expertise and can be involved in the revision of outcomes, they may have equipment/facilities where you can organize meetings or they may allow you to conduct interviews, pilot trainings or surveys among their employees)
    - On the base of your conclusions, formulate 5-6 main messages that the video of your team should transfer.
    - What kind of information should be included in your video to emphasize and support your message?
    - Brainstorming with the coordination of the team leader: What kind of
        - style
        - arguments
        - video content

    is the most convincing for your stakeholder group?

Tasks and colleagues

Tasks related to the video	Students undertaking to take part in them	Comment/problem/Question
recording		
cutting		
speaking		
participating		
writing the texts and the scenario		
graphical elements (title, contact details)		
….		

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Best wishes,
Heads of Unit

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M4 - Lesson 4 – Science communication and dissemination: framing the message

Learning outcomes to be developed:

- The student can distinguish the aims and activities of science communication, dissemination, and broader impact
- The student can effectively communicate ideas and the main results of a given project to non-specialist audiences, applying different strategies to increase audience interest, and understanding.
- The student can design a research engagement plan and identify suitable key performance indicators to assess stakeholder engagement.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and suggested scores**	**Timing**

a) Theoretic content: Purposes and features of communication/dissemination and exploitation
- **Students read individually (5 mins)** the same text (IO2 Curriculum, Module 4, Lesson 4, p 206-209) and get different questions regarding
  - communication plan
  - dissemination plan
  - exploitation plan
The teacher projects each question separately on a slide (See the ppt available here) and addresses them to different students, by random selection. (Optionally, students can answer via Kahoot)
1. Which type of activity is addressing the widest audience?
2. Which are the typical platforms of communication?
3. What is the difference between the aims of communication and dissemination?
4. When does the process of communication start?
5. When does the dissemination start?
6. When does the exploitation start?
7. How long do the exploitation activities last?
		25 mins

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8. To which activity do the following platforms and tools belong? a. articles of scientific journal b. professional workshops c. training and strategic consultations d. participation in common publications e. Twitter posts? 9. What kind of activities belongs to exploitation? The teacher calls for them personally to answer the given questions (questions are presented on the slides one by one). Between the answers, whenever it is needed, the teacher explains the features of the 3 types of activities with the help of the infographics included in the presentation (see here) **b) Teacher interview** with the communication expert of foRMAtion project, with the following questions: • Interview with the RMA of foRMAtion ○ Who are the potential users of foRMAtion project? What are the main platforms where they are addressed? ○ Who do you consider as the target audience for the dissemination of project results? ○ Who is the wider audience for whom we would like to communicate the project results? ○ Were there any changes compared with your preliminary expectations?		20 min
c) PBL tasks Group work: The groups receive an e-mail from the head of unit (see the tasks and the worksheet in Annex 4.4.A) ● *group members submit their answers by e-filling in the table on the online interface used in the lesson* *Classroom work:* ● *The class discusses the answers in the form of a workplace meeting. Group representatives report on the results of their group in front of the class.* ● *The teacher summarizes and demonstrates the answers of students in the form of an online Coggle mindmap which is gradually being elaborated from answer to answer, (see an example for a ready*		15 min

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mindmap on TELLME here and at this link: https://coggle.it/diagram/X1is0zfdS9ZF3xIH/t/framing-the-message-of-tellme-project/9db5fdd86639422e773940180f81e0f5b9e40c31b5b887631cc6fc69c9737c4a) **d) Individual work** • PBL group members write individually a blog post / a Twitter post / a Facebook /a website / or a LinkedIn post on the "real" project chosen by the teacher, on the base of a project progress report and the project website. Each member is given a different genre by the group leader. • Optional task: Finalization of Public Engagement Plan of the "fictive" project Group work: • Evaluation of leadership skills using the Team Leadership Questionnaire by Morgeson (2010) using the "hot seat" method: someone is chosen to be evaluated; the other 3 write down their thoughts based on the following questions: a) What were his strengths as a leader? b) What are his areas of development? c) What did I enjoy/appreciate in him/her personally? The teacher has to enhance that the goal of the evaluation is to encourage each other and give each other feedback positively. **e) Homework:** PBL groups work on and finalize their promotional videos according to the feedback of the teacher. Optional task for extra points: design a Facebook page for the project (based on a given framework - not a public one)	Teams give themselves up to 10 points/per person for their activity, based on self-assessment +5 points	5 min: instructions 15 min: elaboration of texts **15 mins**

Further reading.

- Dunleavy, Patrick (2014) Shorter, Better, Faster, Free. Blogging changes the nature of academic research, not just how it is communicated. https://blogs.lse.ac.uk/impactofsocialsciences/2014/12/28/shorter-better-faster-free/
- Oakes, Kelly (2014) How to Create a Successful Science Blog

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https://www.theguardian.com/science/2014/apr/17/science-blog-wellcome-trust-writing-prize

- Thody Angela (2006): Writing and Presenting Research http://elearn.luanar.ac.mw/odl/public/Files/Angela%20Thody's%20Writing%20and%20Presenting%20Research.pdf
- Example of a project communication plan: https://www.dropbox.com/s/vqzz0x79ptbrnsz/Annex_4.4.C_foRMAtion_Communication_Plan_with_Visual_Identity.pdf?dl=0

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Annex 4. 4. A – E-mail from the Head of Unit

Dear Colleagues,

The leader of your team from today is […].
You have 2 tasks to do within 20 minutes:

- Please, on the base of the profiles, finalize the table below indicating the roles and the names.
- In 20 minutes, we will have a meeting where we will discuss the communication issues of the TELLME project. Yesterday the project groups were formed and received the project application. The deadline is approaching to prepare the communication, dissemination and exploitation plans. To do that, the task of the group is

- to identify the possible stakeholders and audiences of the TELLME project,
- assign the different stakeholders, and target audiences to the different plans

	Target groups	Platforms
Communication		
Dissemination		
Exploitation		

Please use now the shortened version of the TELLME_excerpts.doc.
The team, with the direction of the leader of the team, has to divide the task among the members - you have to report your ideas in 20 minutes!

Best,
Head of Unit

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M4 - Lesson 5 – Public engagement plans – group presentation and discussion

Learning outcomes to be developed:

- The student can act to facilitate processes in the context of a simulated science engagement situation.
- The student can design a research engagement plan and identify suitable key performance indicators to assess stakeholder engagement.

Legend for the use of lesson plans: Grey texts describe useful but elective activities while black text colour indicates activities considered essential.

Teaching ideas: Methods, tools, illustration, problem, game etc.	**Evaluation and assessment**	**Timing**
a) PBL task: Presentation of the promo videos. They will present students' experiences on the foRMAtion project to different target groups and stakeholders such as - an international professional organization, e.g., EARMA, - BA students at their university - the top management of their own institution - an NGO or company or a national EU funding agency working in cooperation with the university in other projects or activities (the aim is to raise awareness regarding RMA as a profession and promote the university's training in this field) in the frame of • an international webinar (if the dates can be reconciled among the 3 universities) presenting the project • OR: a fictive stakeholder/workshop forum where the class members will play the role of the several stakeholders *Peer assessment:* *- students give points to each other's videos based on the evaluation form.*	**0-50 points**	**50 mins**

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- In case the videos of the parallel courses (NOVA & Sapientia) cannot be presented, students give oral feedback regarding each other's videos. Teachers' question launching the conversation: "Which features of the video reflect the aspects and the needs of the given target group?" **b) Course-evaluation roundtable** (including the report of the teacher as well): • "What were the most important things you learnt in this course?" • "Share something you liked and appreciated." • "What are the areas where we could further improve it?" **c) PBL homework:** Groups have to submit • the updated and finalized project management plan until a predefined deadline • *Optional assignment: a report on the project results compiled on the base of the form prepared by the teacher (see Annex…)*		

Further reading:

- An example to study: https://ec.europa.eu/research/participants/documents/downloadPublic?documentIds=080166e5c48ab206&appId=PPGMS
- Guide http://globeducate.s3.amazonaws.com/PDF%2FPublic-engagement-a-practical-guide.pdf

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3. General annexes: practical information and guides

Annex 4. 1 - Guide for Mentimeter quiz

1. Go to https://www.mentimeter.com/signup
2. Sign up for your own Mentimeter account
3. Create and name a new presentation
4. Select the “Quiz Competition”, and then “Select answer” options from the “Types” menu shown in the box on the right
5. Following this, the “Content” menu appears automatically.
6. Fill in your question and enter right and false answer options
7. Set the time for the answer (usually, 10-20 seconds are enough)
8. If you would like to show the leaderboard to students (it is recommended), click the next slide and Add a new slide.
9. You can change the background and style of the slides by using “Themes” settings in the top-right menu bar
10. Students can access your Mentimeter if you select the “Share” option and shoes “Participation” in the appearing window. Here you can select the preferred way of participation: link, QR code or voting code (the latter is the most used option by teachers)
11. Tutorial and detailed description: https://help.mentimeter.com/en/articles/410459-multiple-choice-questions

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Annex 4. 2 - Jigsaw method

How to apply the jigsaw method in the classroom?

1. Students form groups and number themselves 1, 2, 3, 4, and 5 [with 5 as the optimum number in the group]. (Determine the size of these groups according to how many students will profitably work together at the end of the exercise.)
2. All the 1s join together, all the 2s, and the 3s etc to create new ('expert') groups.
3. Each group has a different aspect of a topic in which to become an expert. The 'expert' group researches a topic (the topic can be studied first individually and then can be discussed together within them.
4. 1s, 2s, and 3s then return to their original group and present their new knowledge in the form of a mini-presentation.
6. Where possible, get the students to present their new knowledge in their own words but using the main professional terms.

Source: https://www.cultofpedagogy.com/
Video tutorial: https://www.youtube.com/watch?v=VXxN99Le0nc

How to apply the jigsaw method in the online learning environment?

- Step 1: Break the lesson/topic into segments and upload them (either in different documents or within one) on the commonly used online learning platform
- Step 2 Divide students into groups (in Zoom: chat rooms, in Teams: sub-channels)
- Step 3: Give students time to read over assigned materials individually
- Step 4: Form temporary expert groups (using new "expert' chat rooms/sub-channels). They can discuss their findings and they can also compile a common online document saved in their sub-channel or another online learning platform)
- Step 5: Bring 'experts' back to their home group where each group member can present the information learned.
- Step 6: Students can be required to assess each other's presentations. The teacher wraps up the lesson, by summarizing the main information by using the "questioning method" (helping structuring and comprehension of the content by activating students' existing understanding).

Video tutorial: https://www.youtube.com/watch?v=-ULJfgkZVMY

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Annex 4. 3 - Guide for the application of Google Forms for classroom activities

2. Go to https://docs.google.com/forms/u/0/
3. Sign in with your Google account
4. Start a new form
5. Insert your questions in the form
6. It is usually worth starting the questionnaire with the indication of the student's name (enabling identification of the answers)
7. If you would like to assess a student's individual performance, uncheck the "Edit after submit" option in "Settings".
8. If (and when) you would like to discuss the results with the whole class, you can check the "See summary charts and text responses" option.
9. You can set the layout of your Form using the "Customize theme" menu (top right corner)
10. How to present the result to students?
    1. Select the "Responses" page of your Google Form;
    2. choose the "Create Spreadsheet" option (top right corner, grid icon);
    3. the spreadsheet is more transparent if you select the entire spreadsheet and then format it with the "text wrapping" command available in the upper menu bar of the spreadsheet (see the icon below)

    d. When presenting and projecting the table, it is recommended to hide the columns including timestamps and students' names.

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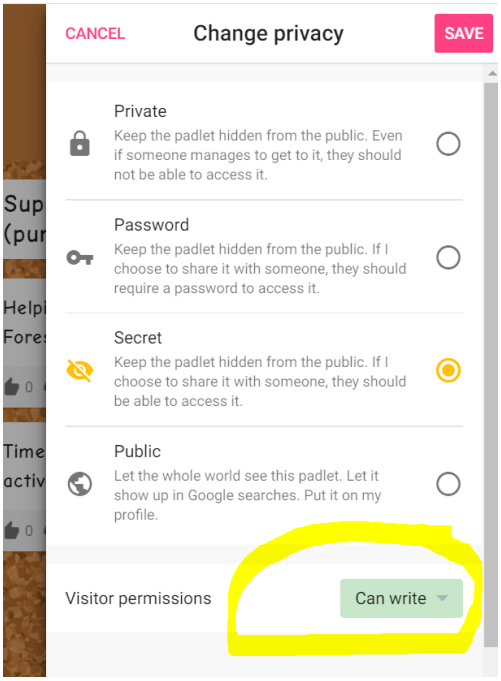
Annex 4. 4 - How to use Padlet as an online classroom whiteboard?

4. Go to https://padlet.com/ and sign up
5. On the upper menu bar, select *Make a padlet* command
6. Select a template, e. g. “Shelf” if you would like students to fill in a table together
7. Customize your layout using *Settings* (upper right corner of the screen)
8. Create columns and give them the names of the categories
9. Share your padlet with your students
10. Select Share (upper right corner of the screen)
    10.1. In the appearing window, choose “change privacy” so that visitors can edit the dashboard
    10.2. You can share your padlet by clicking *Copy link to the clipboard*



11. Students can add items to the columns by clicking the + sign on the screen

Video tutorials:
https://www.youtube.com/watch?v=UkBnwPqaIjA
https://www.youtube.com/watch?v=uBvWCWuuFFM

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