



# Competence Inventory

Version 3

A New Research Competence Framework for  
Professional Higher Education

Enhancing the European Research Agenda

---

## Authors

Aleksandra Lis<sup>1</sup>, Antonio Pombo<sup>4</sup>, Laura Eigbrecht<sup>2</sup>, Marek Frankowicz<sup>1</sup>, Marina Brunner<sup>2</sup>, Nijole Zinkeviciene<sup>5</sup>, Ruth Moran<sup>3</sup>, Sandra Feliciano<sup>6</sup>

---

## Contributors

Agnieszka Sekułowicz, Anne Jordan, Anthony Camilleri, António Moreira Teixeira, Armando Pires, Christine Fenech, Ehiازه Ehimen, Gerhard Götz, John Bartlett, Jolanta Preidienė, Krzysztof Grudnik, Lucjan Chmielarz, Luís Coelho, Radosław Rybkowski, Rafal Kunaszuk, Ulf-Daniel Ehlers

---

## Editors

Aleksandra Lis, Laura Eigbrecht, Marina Brunner, Sandra Feliciano

---

## Layout

Tara Drev

---

## Copyright

(C) 2021, RECAPHE

## The RECAPHE Consortium

1. Jagiellonian University in Krakow (JU)	PL
2. Baden-Wuerttemberg Cooperative State University (DHWB)	DE
3. Sligo Institute of Technology (ITS)	IE
4. Polytechnic Institute of Setúbal (IPS)	PT
5. Vilniaus kolegija/University of Applied Sciences (VIKO)	LT
6. Knowledge Innovation Centre (KIC)	MT
7. European Association of Institutions in Higher Education (EURASHE)	BE
8. Eurokreator	PL

This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International



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



## Table of Contents

1	Introduction .....	4
1.1	Applied Research in Focus.....	6
1.2	Methodological Design for the Competence Framework .....	7
1.3	Further proceeding - next steps.....	8
1.4	Bibliography .....	9
2	Reference Framework for Research Competences in Applied Research .....	10
2.1	Characteristics of UAS research.....	10
2.2	Research lifecycle .....	10
2.3	Target groups.....	13
3	Competence framework .....	14

# 1 Introduction

Higher Education Institutions in the field of applied sciences are gaining importance within the market of higher education, and, due to their profile of being regionally integrated, have a rising impact on regional innovation and prosperity. They play a more and more important role in enhancing European competitiveness and innovation capacity, especially on the regional level where PHE institutions act as connectors and crucial links between the regional SMEs, regional organisations and the society. In addition to this role of PHE, the applied research activities play an important role in developing students' skills including their innovative thinking and entrepreneurship and contribute thus to further economic growth and jobs within the regions. Within PHE Institutions, a development towards more research activity can now be observed, which is also called 'academic drift' (Griffioen and De Jong, 2013; Harwood, 2010). The additional focus on research also implies an increase in research capacity. Building research capacity is defined as a process of individual and institutional development that leads to higher skill levels and greater ability to perform useful research (Grange et al., 2005, 32).

The RECAPHE Research Competence Framework is designed to build research capacity of different target groups, e.g. professionals working as lecturers, professors and other educational professionals in Universities of Applied Sciences and specifically in Professional Higher Education Institutions. The European Commission states the importance of research experience for the innovative capacity of talents working in different European countries: the innovations of tomorrow depend on research undertaken today.

The RECAPHE Research Competence Framework is addressing this challenge by outlining a comprehensive competence framework for research skills for different target groups at PHE Institutions. As an example, an increase in lecturers' research capacity implies a change in their professional profiles. While the concept of an increase in research competences is embraced by policy makers on the international, national and institutional level, the actual increase in research capacity is not easy to manage in practice. Technically, two strategies to increase lecturers' research capacity can be distinguished: to professionalise lecturers' research competences or to hire new lecturers with more research competences. Both strategies have been shown to be complex. RECAPHE is providing grounds for a strategy as well for professionalisation as well as a fundamental concept to outline research competences which can also serve as a blueprint for hiring staff.

In the future, it will become increasingly important to develop new knowledge, methods and tools in an original and creative way rather than just applying knowledge. Competence “as a concept refers to the capacity to act not only in relation to knowledge, but also in relation to individual personal values, attitudes, opinions and emotions. And moreover, to the system of action in which a certain activity takes place, namely the operating context in which an action is to be carried out, thus the performance environment” (Ehlers 2020). Accordingly, a competence framework for applied research competences must be adapted to and specific for the context in which applied research takes place in PHE Institutions - this context being a guideline for determining relevant competences.

Setting up a competence framework for applied research in PHE Institutions is part of contributing to the 2017 Renewed EU agenda for higher education, namely the priorities of tackling future skills mismatches and promoting excellence in skills development as well as ensuring higher education institutions contribute to innovation. In order to ensure this and to foster the integration of research and teaching, the competences of academic staff play a crucial role. It is particularly important also in the context of the New Skills Agenda for Europe (2016) - higher education institutions shall anticipate future skills needs and their staff shall be able to cope with new challenges, particularly those of globalisation. However, the skills to acquire for students and also for teachers and researchers (for promoting them and independently conducting applied research) do not fit the same metric as the skills needed for research activities at the more traditional universities - due to the practice-oriented approach and specific character of PHE. Evidence is needed of what these applied research competences are, how they relate to each other in a framework and how relevant they are for different target groups. The aim is to clearly distinguish the different competences required of applied researchers and other target groups involved in applied research; operationalize them in order to assist researchers in RDI to enhance their capacities (also on involving students into applied RDI activities and cooperating with small businesses) and to make them accessible with a self evaluation tool, subsequently catering them with a tailor-made online training system. This is the basis needed in order to tackle the related challenges of promoting these applied research competences with the different target groups. The RECAPHE Competence Framework thus pairs a specific set of applied research competences with the characteristics of PHE Institutions.

## 1.1 Applied Research in Focus

Bringing attention to applied research is an ongoing process facilitated by different Erasmus+ projects with involvement of several consortium members. There has been a series of EURASHE<sup>1</sup>-inspired projects such as: HAPHE (Harmonising Approaches to Professional Higher Education) - dealing with PHE characteristics practice examples and national differences, PHEXCEL (Testing the Feasibility of a Quality Label for Professional Higher Education Excellence) - dealing with quality tools for PHE, BuildPHE (Building Professional Higher Education Capacity in Europe) - developing on-line self-evaluation tools for PHE institutions measuring their interactions with the world of work, PROCSEE (Strengthening Professional Higher Education in Central and South-Eastern Europe) - dealing with policy challenges for PHE in Central and South-Eastern Europe. The present project is complementary to those projects. It will bring synergy to earlier initiatives.

While the research and regional development agenda has been in the centre of attention of European representation (EURASHE) and national bodies for almost a decade, there hasn't been any project systemically addressing the capacity development of research staff within PHE institutions so far. A few projects in the past tried to map the situation within the sector (e.g. BaLaMa project of a few national associations within the UASNet, 2011). However, these projects rather tried to identify indicators for performance assessment of research activities of PHE institutions than focusing on further capacity development. RECAPHE is the first project to systematically consider applied research competences with a focus on PHE and to propose a concise competence framework. Until now, competence frameworks have focused on general researchers or domain-specific researchers such as medical researchers. The objective of these competence profiles will be to clearly distinguish the different competences that are required for conducting applied research and innovation in PHE Institutions, as compared to academic research that takes place in universities. As will be seen in the following section, we refer to the HAPHE PHE Definition and Characteristics Framework when considering the characteristics of applied research in PHE institutions, this being a guiding principle for determining the competences relevant for our competence framework and making it specific for PHE research.

---

<sup>1</sup> European Association of Institutions in Higher Education, <https://www.eurashe.eu/>

## 1.2 Methodological Design for the Competence Framework

Establishing a competence framework has been an ongoing agile, collaborative effort open for further adaptation in order to ensure the quality, applicability and validity of it, establishing a sharing and peer feedback culture that we believe to be in line with RECAPHE's scope and mission.

Usually, researching on and defining competences relies on an evaluation of mastery in a specific field, this meaning that we should observe and describe the practices of persons involved in a specific professional field or domain. Thus, the first step of our research as an expert-supported comprehensive screening and collection of documents on research areas that are important for research on UAS. This research was conducted by the whole consortium in order to benefit from regional and national resources and expertise. However, the research confirmed the importance of the RECAPHE project in how there is no such thing as a concise competence framework or model adapted to our needs and goals in professional higher education to be found yet. The next step was to analyse the materials and make an inventory of typical tasks, demands and competences in applied research. The question of how to determine the relevant applied research competences led to a threefold background supplement that provides a) the definition of different target groups the competence framework refers to, b) a research lifecycle as a reference setup in which certain competences will be specifically important at specific phases, and c) characteristics of UAS or PHE research that relate to the explanations in 2.: Applied Research in Focus. To be more precise, the target groups defined are institutional academic leaders, Educational and research professionals, namely administrative and supporting staff as well as teachers and research staff, students/learners and policy makers (newly defined as Beginner Researcher/Student, Experienced Researcher/Teacher, Research Support, Academic leaders and Policy Makers when connecting the competence framework to the learning outcomes), the research lifecycle comprises the general phases Initiation; Resources and Information; Research design; Research Process; Outcomes; Evaluation and Reflection and the characteristics of PHE research are listed as a strong focus on Research with cooperation partners; Applied research in contrast to foundational research; Research based on regional issues; Research with students as mediators between theory and practice; Research for practical innovation; Research with interdisciplinary approaches and research methods.

With these framework outlines, the list was narrowed down to a short list of PHE-relevant or applied research competences, organised into a framework of competence clusters and discursively validated by an international expert group from within the consortium in several validation rounds. We consider this competence framework as a basis for further work that we are continually optimizing, e.g. by presenting it to exterior parties at conferences and working groups and asking for feedback and validation, and also by harmonizing it with the next steps of the RECAPHE project. This way, we introduced the ESCO classifications of knowledge (Know-Know), skills (Know-How) and attitudes (Know-How-to-Be) for describing the competences in the competence clusters. Moreover, we assessed the relevance on four levels and the aspired competence level on three levels in a competence matrix for different target groups.

### **1.3 Further proceeding - next steps**

Following the project's schedule, the next step is to provide a Self-evaluation Tool for different target groups, based on this Competence Inventory. Looking for the synergy within the project, we have decided on postponing the finalization of the work on Intellectual Output 1 to combine the work with working on the Learning outcomes, which is part of the next RECAPHE Intellectual Output. Thus, the next steps for the presented Inventory are:

- (1) Elaboration of Learning Outcomes based on the Competence Framework
- (2) Preparing Self-evaluation tool for target groups included in the Inventory
- (3) Ongoing evaluation process of Intellectual Outputs in reference to each other: learning outcomes, competency inventory and self-evaluation tool.



## 1.4 Bibliography

Ehlers, Ulf-Daniel (2020). Future Skills. The Future of learning and higher education.

Available online at <https://nextskills.org/wp-content/uploads/2020/03/Future-Skills-The-Future-of-learning-and-higher-education.pdf>.

Grange, A., Herne, S., Casey, A. & Wordsworth, L. (2005). Building research capacity. *Nursing Management* 12(7): 32–37. DOI: 10.7748/nm2005.11.12.7.32.c2040

Griffioen, Didi & De Jong, Uulkje (2013). Academic Drift in Dutch Non-University Higher Education Evaluated: A Staff Perspective. *Higher Education Policy* 26(2). DOI: 10.1057/hep.2012.24.

Harwood, Jonathan (2010). Understanding Academic Drift: On the Institutional Dynamics of Higher Technical and Professional Education. *Minerva* 48(4):413-427. DOI: 10.1007/s11024-010-9156-9.

## **2 Reference Framework for Research Competences in Applied Research**

Research, Development and innovation plans and processes in UAS and Higher Institutions of PHE are more fundamental for Regional and National development than they were previously. However, RDI in UAS and Institutions of PHE do not have a long tradition. There is still a gap between the expectations of society, the important functions of PHE institutions and the level of research competences there. Therefore the following competence framework defines the necessary research competences for researchers in UAS and Institutions of PHE.

### **2.1 Characteristics of UAS research**

There is a greater need for Research competencies in UAS and Institutions of PHE on an European level. This varied demand can be narrowed down to 6 distinctive Research areas:

- Research with cooperation partners
- Applied research in contrast to foundational research
- Research based on regional issues
- Research with students as mediators between theory and practice
- Research for practical innovation
- Research with interdisciplinary approaches and research methods

### **2.2 Research lifecycle**

For attributing the competences to specific steps within a research lifecycle we have created an adapted research lifecycle for UAS. For research in applied sciences we can identify the generic steps on figure 1 at the next page.

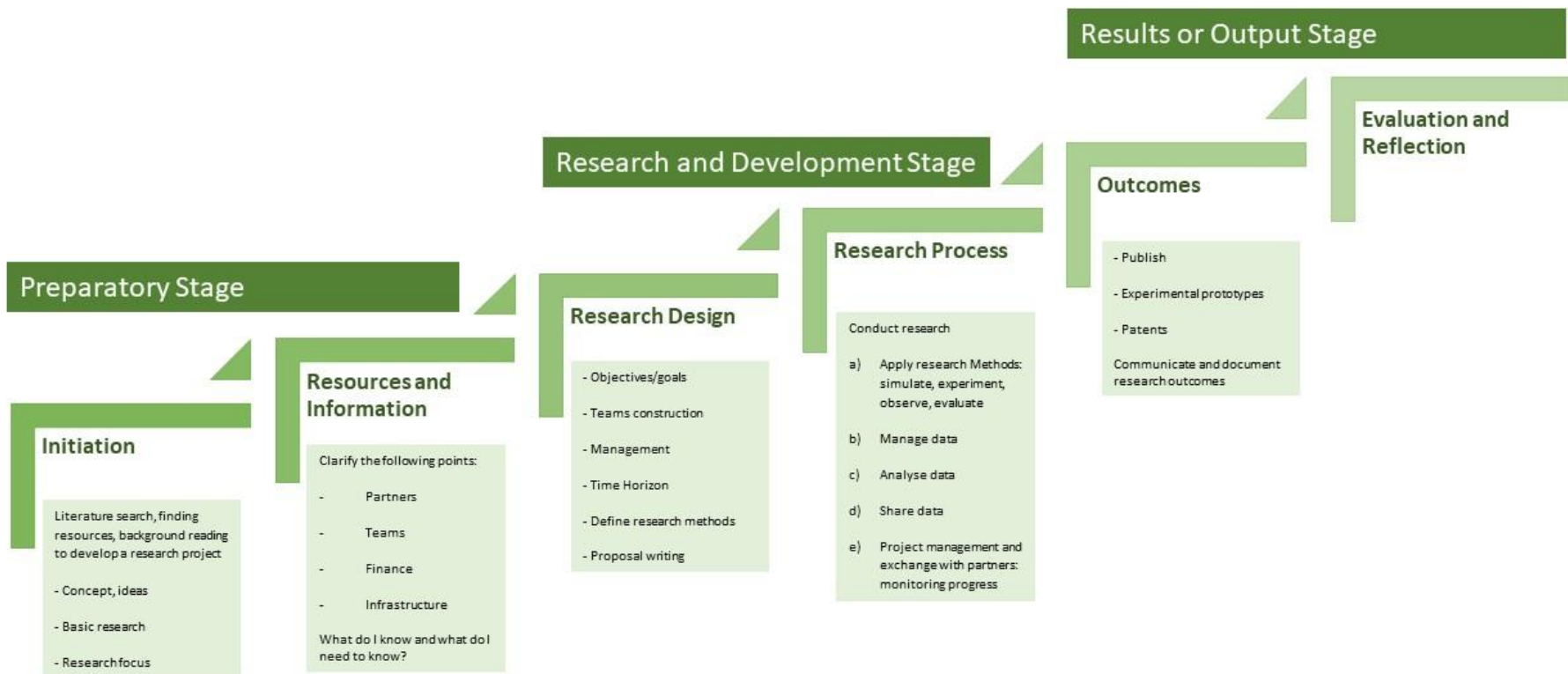


Figure 1



## 2.3 Target groups

Research in UAS is a multidisciplinary research and involves many key stakeholders from various aspects of Research

### Target Groups

Code	Category	Professions affected (long list)	Description
1	institutional academic leaders	institutional academic leaders: chair, headmaster, CEO, dean...	Those who are leading and managing the PHE institution, envisioning reforms and implementing the necessary structural changes.
2	Educational and research professionals	Those working in research-related fields at a PHE institution within the structural framework set by institutional academic leaders.	
2a	administrative and supporting staff	administration support	Those who support research on an administrative level: funding, controlling, legal issues etc..
2b	teachers and research staff	early researchers, UAS teachers, supervisors, teachers, teachers in advanced research	Those who teach students, supervise students' research and conduct research themselves.
3	students/learners	graduate & doctoral students	Students of the respective PHE institutions, studying in different degrees and/or pursuing a PhD.
4	policy makers	(politics, committees)	Those who make policy with implications for research processes.

### 3 Competence framework

3-dimensional approach towards competences employed in the framework

<b>(1) Competence Dimensions</b>	<b>Description of the Dimension</b>	<b>(2) Formulation of the prefix</b>
Know-Know (K)	Theoretical Knowledge "I know how it is supposed to be done"	Knowledge of: Understanding of:
Know-How (S)	Practical Knowledge, Experience, Skill, Diligence "I know how to do it and can do it autonomously"	Ability to:
Know-How-to-Be (B)	Behaviour/Mindset (Will, Self-Confidence, Ethics) "I want to do it. I want to do it right. I trust I can do it"	Follow: (Alternative suggestion: Will to/Respect:)

Competence cluster name	Short description	Competences included in this cluster	Relevance to UAS & 3rd mission
RESEARCH DESIGN FOR INNOVATION	<p>This competence cluster refers to the key elements of preparing, designing and conducting research processes, initiatives and projects from the scientific and methodological point of view.</p>	<p>(S) Ability to acquire and foster knowledge and practical experience in applied research methods (including terminology and problem-solving techniques)</p> <p>(S) Ability to communicate new and complex ideas to stakeholders</p> <p>(B) Ability to respect ethical and academic standards</p> <p>(B) Ability to develop and build an identity as researcher</p> <p>(S) Ability to Anticipate future Research problems and to develop appropriate innovative Research based solutions</p> <p>(S) Ability to incorporate societal needs in the design</p>	<p>This competence is very important for UAS in the following areas: (based on criteria from HAPHE reference project):</p> <ol style="list-style-type: none"> <li>1. Policy and strategy integration</li> <li>2. Strategic Objectives &amp; Outcomes</li> <li>3. Regional Integration</li> <li>10. Research, development and innovation agenda</li> <li>11. Research, development and innovation process</li> <li>12. Research, development and innovation outputs and outcomes</li> </ol> <p>In particular, it is important to understand differences between basic and applied research (purpose, context and methods) to avoid "academic drift" among UAS researchers involved also in basic research.</p> <p>Research planning shall be performed with participation of end-users of research outputs to maximize benefits for the world of work and society.</p>

Competence cluster name	Short description	Competences included in this cluster	Relevance to UAS & 3rd mission
<b>RESEARCH MANAGEMENT</b>	<p>This competence cluster refers to ability to organize and manage a research initiative, process or project from its first idea through possible application for funding including monitoring and management of the research activities, to its final report and publication.</p>	<p>(S) Ability to foster a collaborative communication with the various Institutional Stakeholders</p> <p>(S) Ability to define clear objectives, with the emphasis on identification of local needs and applicability of results</p> <p>(B) Ability to demonstrate a strong quality mindset during the the various stages of research and</p> <p>(S) Ability to monitor processes and activities"</p> <p>(K) Understand risk management and</p> <p>(B) Have a risk-based thinking mindset and</p> <p>(S) Apply risk management strategies</p> <p>(S) Ability to manage resources (time, materials, finances, human resources etc.)</p> <p>(S) Ability to ensure transferability and sustainability of research results</p>	<p>This competence is crucial for UAS based on HAPHE criteria 10-12:</p> <p>10. Research, development and innovation agenda</p> <p>11. Research, development and innovation process</p> <p>12. Research, development and innovation outputs and outcomes</p> <p>Particular stress shall be put on planning, conducting and exploiting research to maximize benefits for the world of work and society. Project management skills within PHE sector shall thus include ability to create and maintain efficient communication channels between project team and non-university partners.</p>



Competence cluster name	Short description	Competences included in this cluster	Relevance to UAS & 3rd mission
EXTERNAL COOPERATION AND KNOWLEDGE TRANSFER	<p>This competence cluster refers to the ability to actively seek to develop a transfer ecosystem in which research results are shared, disseminated and transferred throughout the research initiative with internal and external stakeholders in all stages of knowledge production and dissemination. It also refers to competences of UAS students and staff to act in collaborative external environments (world of work, civil society, public administration etc.)</p>	<ul style="list-style-type: none"> <li>(S) Ability to network with stakeholders</li> <li>(S) Ability to communicate research messages to a broader audience</li> <li>(S) Ability to foster a collaborative community with external partners from the Research Community to ensure development of a Research Knowledge Transfer Ecosystem.</li> <li>(S) Ability to develop and implement innovative solutions to close the gaps</li> <li>(K) Knowledge of the business/industry and challenges they face</li> <li>(K) Knowledge of compliance and intellectual property regulations, including patents/registering procedures and</li> <li>(S) Ability to follow and implement compliance and intellectual property regulations including patents/registering procedures</li> <li>(S) Ability to foster a collaborative research approach to ensure Stakeholder engagements are considered in a Research collaborative community</li> <li>(S) Ability to build respectful and appreciative cooperation routines with other institutions and non-university research institutions</li> <li>(S) Ability to promote, organize and manage research activities on work-based learning</li> </ul>	<p>Knowledge transfer capacities are crucial for UAS regional integration (HAPHE criterion 3) and for exploitation of applied research outputs and outcomes (HAPHE criterion 12)</p> <p>This competence is particularly important for UAS (all HAPHE criteria).</p>

Competence cluster name	Short description	Competences included in this cluster	Relevance to UAS & 3rd mission
TEAMWORK	<p>This competence cluster refers to interpersonal competences (group work, leadership, taking different roles in a team).</p>	<p>(B) Ability to develop and build self-awareness of one's strengths and weaknesses, potentials, limits and biases</p> <p>(B) Ability to understand and appreciate the value of constructive criticism from others</p> <p>(B) Ability to define goals and tasks</p> <p>(B) Ability to understand the importance of communication in a Research Environment and</p> <p>(S) Ability to adapt to different contexts and communicate criticism in a constructive way</p> <p>(B) Develop and build an appreciation of diversity and</p> <p>(S) Ability to foster an inclusive research environment.</p> <p>(B) Develop and build appreciation of collaborative work and</p> <p>(S) (Ability to) work collaboratively</p> <p>(K) Knowledge of methods of conflict resolution in research and</p> <p>(S) Ability to resolve conflicts in an unbiased way</p>	<p>This competence is very important for UAS based on HAPHE criteria 10-12:</p> <p>10. Research, development and innovation agenda</p> <p>11. Research, development and innovation process</p> <p>12. Research, development and innovation outputs and outcomes</p> <p>In particular applied research requires collaboration with professionals from outside the academia (business, industry, society at large) so one has to account for different mentalities, organizational cultures etc.</p>

Competence cluster name	Short description	Competences included in this cluster	Relevance to UAS & 3rd mission
RESEARCH BASED TEACHING	<p>This competence cluster refers to the ability to integrate teaching and research activities and engage students into research activities.</p>	<ul style="list-style-type: none"> <li>(K) Knowledge of general and discipline-related higher education pedagogy and</li> <li>(S) Ability to assess students' prior knowledge and skills and adapt the course accordingly</li> <li>(B) Ability to understand the importance of time management</li> <li>(B) Develop and build an understanding of fair, respectful, self-reflective, inclusive and professional teaching habitus and</li> <li>(S) Ability to create a fair, respectful, inclusive learning environment</li> <li>(S) Ability to promote individual knowledge construction</li> <li>(S) Ability to promote explorative and research-based learning</li> </ul>	<p>This competence is related with HAPHE criteria</p> <ul style="list-style-type: none"> <li>Methods of curriculum development</li> <li>Learning outcomes</li> <li>Content for teaching and learning</li> <li>Learning methodology</li> <li>Learning environment</li> <li>Programme Team</li> </ul>

Competence cluster name	Short description	Competences included in this cluster	Relevance to UAS & 3rd mission
<b>LEADERSHIP, SCIENTIFIC GUIDANCE AND SUPERVISION</b>	<p>This competence cluster refers to competences related with scientific guidance and evaluation of scientific efforts.</p>	<p>(S) Ability to supervise and guide students and members of the research team scientifically as well as personally in their capacity for conducting research initiatives</p> <p>(S) Ability to foster a supportive and engaging research team to develop and enhance their research potential</p> <p>(S) Ability to lead the research team successfully throughout the entire research initiative</p> <p>(S) Ability to motivate students, provide feedback and advise concerning their professional development pathway</p> <p>(S) Ability to monitor, mentor and coach individual progress of students</p>	<p>It is very important for UAS staff (teachers, tutors, supervisors of practical placements and diploma theses etc.). These abilities shall also include supporting young people to immerse into the world of work (teachers and tutors as "role models")</p>

### **About the RECAPHE Project and this publication**

Professional Higher Education Institutions play an important role in enhancing European competitiveness and innovation capacity, especially on the regional level where they act as connectors and crucial links between the regional SMEs, regional organisations and society.

However, further support is needed for development and enhancement of staff capacity to engage into applied research & innovation activities, link these to teaching and develop relevant ways for engagement of students in these activities.

The RECAPHE project, therefore, aims to broaden insight and awareness of applied research & innovation activities within Professional Higher Education Institutions in Europe and to create a platform for imparting further competences to research staff and students related to their specific experience and needs.



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