



General Qualifications Reference Frameworks for Higher Education in Europe

**Measuring and Comparing Achievements of
Learning Outcomes in Higher Education in Europe
2023**

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CALOHEE Phase 2

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Tuning Educational Structures in the World

The name TUNING was chosen for higher education projects and initiatives to reflect the idea that universities do not look for uniformity in their degree programmes or any sort of unified, prescriptive or definitive curricula but simply for points of reference, convergence and common understanding. The protection of the rich diversity of higher education in Europe and the world has been paramount in the Tuning initiative from its start in 2001 and in no way seeks to restrict the independence of academic and subject specialists, or undermine local and national academic authority.



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Introduction

Higher education (HE), as the rest of society, continued to experience a number of “shocks” in the 2020s, *inter alia* the Covid-19 pandemic and its after effects (still not really fully known), inflation at levels unknown for many years, rapid advances in digitalization and methods of communication, job market disruption, politics and conflicts. These developments had a bearing on HE as well, since it became an even larger priority to meet stakeholder expectations and demands and serve society. To meet these goals, one set of instruments, the two European qualifications frameworks (QF), is already well established and used. Yet these QFs also perplex many people. Furthermore, both QFs are phrased in rather general terms and do not cover more current insights regarding societal responsibilities of the learner. Therefore, it is highly necessary to re-evaluate these instruments and offer an updated flexible support to them. The idea is to make a unified framework that is clear, has open access, is user friendly, and is responsive to change where needed. This document is meant to formulate such an updated, unified QF, also incorporating the *Reference Points for the Design and Delivery of Degree Programmes*, which were developed in the context of the Tuning Educational Structures initiative. It has been prepared by 100+ academics from 20+ countries involving experts from the full range of academic domains.

Context

In 2005 and 2008 respectively the *Framework for Qualifications of the European Higher Education Area* (FQ of the EHEA) and the *European Qualifications Framework for Lifelong Learning* (EQF) were agreed by national authorities. Since then, they have developed as cornerstones of the modernization / reform process of HE programmes, in conjunction with three other instruments, the *European Standards and Guidelines for Quality Assurance*, the *European Credit Transfer and Accumulation System* (ECTS) and the *Lisbon Recognition Convention*. Both frameworks intend to define for the progressive cycles of learning what is expected from a graduate. While the FQ of the EHEA based on the so-called Dublin descriptors, which were developed in the years 2001-2004, focus primary on the learning process, the EQF of LLL descriptors have the outcomes of the learning process primarily in mind, that is what graduates will need to find suitable employment.

During the same period the Tuning Educational Structures initiative published its subject area-based *Reference Points for the Design and Delivery of Degree Programmes* for a substantial number of academic fields. These documents were based on large scale transnational surveys which identified the key subject specific and generic competences for a particular subject area. The overarching qualifications frameworks and the Tuning ones, although being supplementary and supporting each other, were developed in parallel. As result they are not fully aligned.

Since the frameworks were introduced, the thinking about learning and learning priorities, has developed further, due to further digitalization, the flexibilization of the labour market and new societal challenges, expressed in the *Sustainable Development Goals*.

Although the present frameworks are accepted as they have been defined, there is reason to have a fresh look at them. One of the challenges for the HE sector in Europe, which can be perceived as a weakness, is the existence of two competing overarching frameworks. Another weakness is that both frameworks are rather general and do not cover more current insights regarding societal responsibilities of the learner. The outcomes of the Tuning-CALOHEE projects show that these perceived weaknesses can be made into a strength by combining the basic philosophies and principles into one integrated model covering all cycles of learning, that is the

EQF-levels 5-8, without undermining the existing ones.

Proposal

Although one can read progression of learning in each of the existing overarching frameworks, this is not made very explicit. While the FQ of the EHEA distinguishes for the short, first and second cycle five dimensions, and for the third cycle six dimensions, ranging from knowledge to lifelong learning, the current EQF for LLL makes a distinction between three elements, 'knowledge', 'skills' and 'autonomy and responsibility'. The last element expressing self-confidence and authority of learners. This is in accordance with Blooms /Andersons and other taxonomies of learning. These three EQF levels of progressive learning can be applied to identify the same elements in each of the QF for the EHEA dimensions. This results in a table holding 15 descriptors for the EQF levels 5, 6 and 7 and 18 for EQF level 8, the doctorate. One can read the descriptors of one dimension also as three sub-descriptors which indicate progression of learning of the same core item. Although, knowledge and skills are distinguished separately, in the actual learning process these will be aligned and build upon one another. Existing knowledge - in terms of knowing and understanding - will be deepened by practicing, applying subject specific and generic skills.

This table of 15 descriptors for the short, first as well as the second cycle, and 18 for the third cycle in higher education offers a sound foundation for not only making the progression of levels of learning much more explicit but it also allows the inclusion of current developments such as the paradigm change from expert or staff driven education towards student-centred education and active learning. It also makes it possible to take more recent societal challenges into account, such as key items of the *Sustainability Development Goals*. The result of this exercise is reference frameworks which express in a much more detailed way what a learner is expected to achieve at present and in the near future to be relevant for society.

These tables allow not only for defining more precise programme learning outcomes for degree programmes, but also offer a robust foundation for defining and positioning micro-credentials, that is identifying direction and types of learning / level of mastery. As a result, they also create a more detailed / sophisticated basis for recognition of studies than the two existing qualifications frameworks. These new Tuning-CALOHEE General Qualifications Reference Frameworks for all four cycles in HE, EQF levels 5 to 8, can be applied by institutions independent of whether they base their programmes on the FQ of the EHEA or the EQF for LLL. They should be understood as a means for detailing and updating of the two overarching qualifications frameworks, not as a replacement. They are meant to be aspirational and forward looking and a means to define and update learning modules and degree programmes, as well as a key reference for Quality Assurance.

Basic principles

The four overarching frameworks presented below are named *General Qualifications Reference Frameworks for Higher Education*, GQRFs. In deviation of the existing two frameworks 'reference' has been added, to express that they define standards, but that there is room for motivated flexibility to do justice to, at the one hand, educational cultures and national specificities and, on the other hand, the mission of a particular HE institution and the profile of individual programmes.

The model is based on two legs, the vertical outlining the 5 or 6 dimensions / descriptors of the FQ of the EHEA and a horizontal, involving the EQF descriptors. The basic philosophy applied is that in all learning there is always a knowledge / knowing /understanding part, a skills / application part and an autonomy and responsibility part, which also involves 'attitude'. These three parts or directions organise and express the progression of learning, 'knowledge' being the foundation and 'autonomy and responsibility', expressing authority, being the most

ambitious. It has to be stressed here that the concept 'knowledge' has a variation of connotations in different educational cultures, national contexts and subject areas. We can distinguish different types of knowledge, such as (1) factual knowledge, (2) conceptual knowledge, (3) procedural knowledge, and (4) metacognitive knowledge (Krathwohl, 2002), but there are many other distinctions according to scholarly literature. 'Skills' are distinguished in 'subject specific' or 'technical' and general/generic ones. Although, the distinction is made between the 'knowledge' and 'skills / application' components, in real learning both are developed in conjunction.


However, in this model also 'skills', 'judgments', 'research', 'communication' and lifelong learning require 'knowledge', e.g. 'knowing' about principles, concepts, theories, methods, to apply these effectively. Autonomy and responsibility can only be obtained when there is a highly integrated level of subject specific and generic/general competences. The three progressive levels of learning are expressed as 'activities': 'knowledge acquisition', 'knowledge and skills application' and developing 'authority'. For each of these categories a *verb* has been defined, respectively 'demonstrate', 'evidence' and 'manifest'. These are meant to do not only justice to the activities involved, but also reflect progression in evidencing personalised learning. The verb 'demonstrate' allows well for assessing 'knowledge' to be understood as 'knowledge and understanding', while 'evidence' is used for knowledge and skills application because it requires a measurable product prepared by the learner. Finally, 'manifest' is related to personal competences, such as attitude, drive, motivation, action, leadership and the like, in workplace and societal contexts.

Models of learning

The progression levels identified, ask for different types and varieties of learning approaches, modes, methods and strategies. Knowledge acquisition (knowing and understanding) require modes of learning which allow for becoming acquainted with a domain of knowledge, such as studying handbooks, which might involve skills and skills application as a means to become knowledgeable. Also, the strategy of 'learning by doing' will involve initial knowledge, which can for example be obtained from observation. 'Knowledge and skills application' will require active learning modes and methods, such as presentations, (academic) writing, peer learning, etc., covering a wide set of generic/general and subject specific skills and competences. The most advanced level of learning, developing 'autonomy and responsibility', assumes learning formats, such as roll play, apprenticeships/work placements and work-based learning, which reflect real world situations, in the workplace and beyond.

The model outlined is highly relevant to be able to link sub-levels within cycles / EQF levels to course units and modules. These are instrumental to define prerequisites and co-requisites for a learning unit or module to ensure readiness to undertake the forthcoming learning. Also, regarding the recognition of studies these offer transparency about the intended and achieved learning outcomes, that is the level of competence. For positioning electives, minors and most of all micro-credentials, that seems rather important.

Micro-credentials can be initiated by a HE institution and be either a part of existing course offerings or an addition at any cycle / level (EQF 5 to 8). Setting-up micro-credentials can also be the result of learner/market demand. In both cases, it is relevant to decide on the workload involved, expressed in ECTS credits, and to define appropriate learning outcomes. They can be freestanding in a lifelong learning context, meant for upgrading of learning of those not formally enrolled in a degree programme, but also a 'stackable' or 'insertable' piece of learning, replacing an equivalent. When upgrading of learning is involved, one can imagine that the aim of a particular micro-credential is to upgrade existing knowledge with new knowledge. Its purpose might also be to actually train new knowledge and skills which is at a higher level than knowledge acquisition. The aim of a micro-competence could also be to offer additional training to senior management taking real



world practices as a basis. It is the role of the provider / HE institution to identify the appropriate cycle / EQF level as well as the three directions/types identified above, each offering a different set of intended learning outcomes. In this context, the GQRFs offer a robust response to the experienced problem that the present QFs are not able to distinguish level of learning and outcomes in a short cycle of 2 years, a first cycle of 3 to 4 years, a second cycle of 1 to 2 years and a third cycle of 3 to 4 years.

Both in design and content the Tuning CALOHEE *General Qualifications Reference Frameworks for Higher Education* are meant to serve as models to define, organise and measure learning by meeting present and future needs of the workplace and society at large. In the context of the CALOHEE initiative, qualifications reference frameworks have been and are developed for a growing number of academic fields, which are based on the same model as the GQRFs and therefore fully interlinked. In its combination these new set of reference frameworks offer a robust basis for designing, delivering and enhancing degree programmes as well as micro-credentials and to serve as a reliable instrument for recognition of studies and quality assurance.

CALOHEE Project Team

Groningen, 15 February 2023, updated in June 2023.



TUNING-CALOHEE Qualifications Reference Framework for the First Cycle EHEA / Short Cycle / EQF Level 5
 (Based on a combination of the Bologna Process QF for the EHEA and the European Qualifications Framework for Lifelong Learning)

QF EHEA Short cycle descriptors	SQF domain dimensions Level 5 (Short Cycle / Associate Degree)	EQF descriptor Knowledge Level 5 Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	EQF descriptor Skills Level 5 A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	EQF descriptor Autonomy and Responsibility (Wider Competences) Level 5 Exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others
	Activity	Knowledge acquisition: domain specific and generic competence	Knowledge and skills application: domain specific and generic technical and non-technical skill	Authority: autonomy and responsibility on the field of study and as a member of society
I. Has demonstrable knowledge and understanding of a field of expertise, building on general secondary education, usually works at the level of advanced textbooks, has a knowledge background in a professional field or profession, for personal development and for further study to complete the first cycle (Bachelor).	Knowledge and understanding	Demonstrate comprehensive knowledge and understanding in broad contexts within a field of practice or study, that builds on factual and theoretical knowledge.	Evidence the ability to compile and compare knowledge and information which is fundamental for the field of practice or study applying correctly the related terminology.	Manifest the ability to use and share field-related knowledge and understanding in field related, professional and societal settings.
II. Is able to apply his knowledge and insight in professional contexts.	Field related and general skills and competences	Demonstrate comprehensive knowledge and understanding of the generic, subject specific, and digital skills required to operate successfully in the field of practice or study and acknowledging the societal context.	Evidence the ability to apply field related and generic skills, including digital ones, in the field of practice or study and societal contexts.	Manifest an evidence-informed approach to support projects and activities, applying effectively field and societal related knowledge and skills, taking initiative, showing responsibility and personal leadership.
III. Has the ability to identify and use data in order to determine a response	Critical reflection, judgements,	Demonstrate knowledge and understanding of relevant concepts, methodologies and/or practices in the	Evidence the ability to use logic and reasoning in identifying and applying relevant concepts,	Manifest the ability to appraise new knowledge and information to identify and implement individual

<p>to clearly defined, concrete and abstract problems.</p>	<p>synthesising and design</p>	<p>field of practice or study which allows for efficient and effective use in response to a variety of challenges, taking into account basic notions of ethical awareness, intercultural issues, political and governance awareness, decision making, and other societal and sustainable developments.</p>	<p>methodologies and/or practices, while being aware of relevant social, cultural, scientific and ethical issues and challenges.</p>	<p>and collaborative ways forward in response to field related challenges, in the context of societal developments.</p>
<p>IV. Can communicate with peers, executives and clients about understanding, skills and work.</p>	<p>Communication and information sharing</p>	<p>Demonstrate knowledge and understanding of the appropriate means and skills to communicate information and challenges related to the field of practice and studies considering selected societal issues for a variety of audiences.</p>	<p>Evidence communication in terms of listening, speaking and writing with regard to different types of information and challenges to a variety of audiences.</p>	<p>Manifest the ability to communicate effectively in customary workplace and/or societal situations.</p>
<p>V. Has the learning skills to enter into an advanced study programme that requires a certain degree of autonomy.</p>	<p>Continuous learning and development</p>	<p>Demonstrate knowledge and understanding of learning approaches and methods required for self-directed continuous learning.</p>	<p>Evidence the ability to anticipate the implications of new information and field related and societal developments for both current and future learning.</p>	<p>Manifest self-motivation and initiative to participate in learning and development activities for oneself, to continually update and upgrade field related knowledge, skill and competences.</p>

TUNING-CALOHEE Qualifications Reference Framework for the First Cycle EHEA / Bachelor / EQF Level 6

(Based on a combination of the Bologna Process QF for the EHEA and the European Qualifications Framework for Lifelong Learning)

QF EHEA 1 st cycle descriptors	SQF domain dimensions Level 6 (BACHELOR)	EQF descriptor Knowledge Level 6 <i>Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles</i>	EQF descriptor Skills Level 6 <i>Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study</i>	EQF descriptor Autonomy and Responsibility (Wider Competences) Level 6 <i>- Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts - Take responsibility for managing professional development of individuals and groups</i>
	Activity	Knowledge acquisition: domain specific and generic competence	Knowledge and skills application: domain specific and generic technical and non-technical skill	Authority: autonomy and responsibility on the field of study and as a member of society
I. <i>Have demonstrated knowledge and understanding in a field of study that builds upon their general secondary education, and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study</i>	Knowledge and understanding	Demonstrate current understanding of a domain of knowledge which defines the field of studies.	Evidence the ability to contextualize, integrate and compare knowledge which is fundamental for the field of study applying correctly the related terminology.	Manifest the ability to use, share, and contribute to field-related knowledge and understanding in professional and societal settings.
II. <i>Can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study</i>	Field related and general skills and competences	Demonstrate current knowledge and understanding of the generic, subject specific, and digital skills required to operate successfully in the field of study and wider contexts.	Evidence the ability to apply field related and generic skills, including digital ones, which facilitate critical thinking and evidence-based arguments and solving subject related and societal problems.	Manifest an evidence-informed approach to managing technical / professional projects and activities, applying effectively field and societal related knowledge and skills, taking initiative, showing responsibility and leadership.
III. <i>Have the ability to gather and interpret relevant data (usually within their field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues</i>	Critical reflection, judgements,	Demonstrate current knowledge and understanding of relevant theoretical frameworks, concepts, methodologies and/or practices to gather, evaluate	Apply appropriate theories, concepts, methodologies and/or practices and field related and generic skills and competences,	Manifest the ability to evaluate and reflect on new knowledge and contribute to discourse to identify and implement individual and

	synthesising and design	and interpret field related and societal information. This includes ethical awareness, intercultural issues, political and governance awareness, decision making, and other societal and sustainable developments.	including digital ones, to analyse, synthesise, and make informed judgments while considering relevant social, cultural, scientific and ethical issues and challenges.	collaborative ways to either move forward and/or solve field and societal challenges and problems.
<i>IV. Can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences</i>	Communication and information sharing	Demonstrate current knowledge and understanding of the appropriate means, skills, attitudes, approaches and strategies to effectively communicate information, ideas, problems, challenges and solutions related to the field of studies and selected societal issues for a variety of audiences, including field specialists, using a variety of media.	Evidence effective communication of different types of information involving ideas, problems, challenges and possible solutions by applying technical and non-technical strategies, means and skills tailoring them to a variety of audiences including field specialists.	Manifest the ability to communicate effectively in predictable and unpredictable workplace and/or societal situations by listening to others and making convincing arguments in order to reach a common understanding of topics and activities involved.
<i>V. Have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy</i>	Continuous learning and development	Demonstrate knowledge and understanding of learning approaches and methods required for self-directed continuous learning and development in a variety of formats and settings.	Evidence learning skills and appropriate strategies to advance the continuous learning and development of self and others in order to reflect on, update, and upgrade field knowledge, skill and competences, and societal developments	Manifest motivation and initiative to organise, manage, and evaluate learning and development activities for oneself and others in order to continually update and upgrade field related knowledge, skill, and competences, and societal developments.

QF EHEA 2 nd cycle descriptors	SQF domain dimensions Level 7 (MASTER)	EQF descriptor Knowledge Level 7 <i>- Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research</i> <i>- Critical awareness of knowledge issues in a field and at the interface between different fields</i>	EQF descriptor Skills Level 7 <i>- Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields</i>	EQF descriptor Autonomy and Responsibility (Wider Competences) Level 7 <i>- Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches</i> <i>- Take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams</i>
	Activity	Knowledge acquisition: domain specific and generic competence	Knowledge and skills application: domain specific and generic technical and non-technical skill	Authority: autonomy and responsibility on the field of study and as a member of society
I. Have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with Bachelor's level, and that provides a basis or opportunity for originality in developing and/or applying ideas, often within a research context	Knowledge and understanding	Demonstrate a depth and breadth of understanding of a domain of specialised knowledge which offers a foundation for developing original thinking and new ideas.	Evidence the ability to contextualise, compare, critique, and integrate specialised knowledge utilised to advance thinking and ideas relevant to the field of study.	Manifest the ability to use and share specialised knowledge and understanding which allow for the development new knowledge, policies and strategic decision making in complex and unpredictable field-related and societal settings.
II. Can apply their knowledge and understanding, and problem solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study	Field related and general skills and competences	Demonstrate a depth and breadth of knowledge and understanding regarding higher-order generic and subject specific (digital) skills and competences required to operate successfully in a particular field of study at expert level, as well as in a wider societal context.	Evidence the ability to apply higher-order and evidence-informed subject specific and generic skills and competences using appropriate (digital) learning formats, which facilitate the development of high-level critical thinking, complex problem-solving and effective argumentation skills in multi-dimensional and differentiated work and societal settings.	Manifest the ability to effectively apply field and societal related knowledge, skills and competences, including innovation, entrepreneurship, responsibility and/or leadership, to manage complex technical and/or content related activities including projects and initiatives in familiar and unfamiliar work and societal contexts.

<p>III. <i>Have the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgements</i></p>	<p>Critical reflection, judgements, synthesising and design</p>	<p>Demonstrate a depth and breadth of knowledge and understanding of complex theoretical frameworks, concepts, methodologies and practices at a level which allows for comparing and integrating these, to serve as a foundation for (applied) research and creative thinking related to the field of studies and societal challenges.</p>	<p>Evidence mastery of the ability to identify, analyse, synthesise and compare theories, concepts, methodologies and skills from field related and wider perspectives (including one's social, ethical, cultural and political responsibilities) to organise often incomplete information, to make evidence-based judgements, and to solve complex problems in research related or innovative contexts.</p>	<p>Manifest the analytical ability to critically comprehend and reflect on new specialised knowledge and skills, and to use this critical capability to contribute in individual and /or team capacities to the identification of evidence-informed judgements and solutions to move forward and /or solve complex field and societal related challenges and problems.</p>
<p>IV. <i>Can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously</i></p>	<p>Communication and information sharing</p>	<p>Demonstrate a depth and breadth of knowledge and understanding of the appropriate means, skills, strategies, attitudes and approaches to effectively communicate complex information and multidimensional problems, challenges, ideas and solutions in field related and societal contexts to a variety of audiences, including field specialists.</p>	<p>Evidence the effective application of a variety of sophisticated communication strategies, media, means, and skills to convey different types of information involving multi-dimensional problems, challenges, ideas, and possible solutions through messaging tailored to the target audience, including field specialists.</p>	<p>Manifest the ability to communicate clearly and unambiguously in complex work and/or professional, academic and societal situations, by making convincing and evidence-informed arguments and by listening to and appreciating the view of others.</p>
<p>V. <i>Have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous</i></p>	<p>Continuous learning and development</p>	<p>Demonstrate advanced knowledge and understanding of learning principles, skills and strategies required for largely self-directed autonomous continuing formal, non-formal and informal learning in face-to-face, hybrid and digital formats, in order to keep acquiring new knowledge and insights resulting from work related and societal and sustainable developments.</p>	<p>Evidence advanced learning skills and appropriate strategies to advance one's own learning and that of others in a lifelong learning context, showing the motivation, metacognitive insight, initiative and leadership to continuously update and upgrade knowledge and field related and generic skills and competences.</p>	<p>Manifest continuous personal and professional development in individual, team-based and societal settings by initiating, organising, managing and evaluating lifelong learning activities for oneself providing good service in a professional context and to society at large.</p>

QF EHEA 3 rd cycle descriptors	SQF domain dimensions Level 8 (Doctoral studies)	EQF descriptor Knowledge Level 8 Knowledge at the most advanced frontier of a field of work or study, and at the interface between fields	EQF descriptor Skills Level 8 The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/ or innovation, and to extend and redefine existing knowledge or professional practice.	EQF descriptor Autonomy and Responsibility (Wider Competences) Level 8 Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts, including research.
	Activity	Knowledge acquisition: domain specific and generic competence	Knowledge and skills application: domain specific and generic technical and non-technical skill	Authority: autonomy and responsibility on the field of study and as a member of society
I. Have demonstrated a systematic understanding of a field of study and mastery of the skills and methods of research associated with that field	Knowledge and understanding	Demonstrate state of the art systematic understanding of a domain of specialised field of study and work and its related terminology which offers a robust foundation for developing original research, thinking and/or performance at the frontier of once own field of specialisation and associated ones.	Evidence the mastery of high-level skills and techniques and complex methods to contextualize, integrate, compare and critique state of the art specialised knowledge, thinking and/or performance in formats as currently applied in once own field of specialisation and associated and/or related ones.	Manifest authority and leadership to use and share field-related understanding in complex and unpredictable professional and societal settings which allow for advancing (applied) research and/or developing new knowledge, ideas, policies, processes and strategic decision making.
II. Have demonstrated the ability to conceive, design, implement and adapt a substantial process of research with scholarly integrity	Field related and general skills and competences	Demonstrate deep understanding of appropriate methods and/or theoretical frameworks for defining a substantial process of (applied) research or ideas development, respecting applicable ethical and scholarly standards and conservation of the environment.	Evidence the ability to conceive, design, implement and adapt a substantial process of (applied) research and/or ideas development by applying an effective combination of domain specific and high-level generic skills, including academic leadership, project and time management, creativity, innovation and entrepreneurship, social and civic responsibility and concern for	Manifest scholarly and professional integrity and sustained commitment in managing complex technical and/or content related activities including projects and initiatives in familiar and unfamiliar environments, e.g. work-based and societal contexts, applying effectively field and societal related knowledge, skills and competences by demonstrating creativity, initiative, innovation, entrepreneurship, responsibility and/or leadership.

			sustainability, with scholarly and ethical integrity.	
III. Have made a contribution through original research that extends the frontier of knowledge by developing a substantial body of work, some of which merits national or international refereed publication	Research	Demonstrate deep understanding of conditions and scholarly standards for developing and implementing a highly original and substantial body of research and/or creative work.	Evidence the ability of developing and implementing, autonomously, original research and/or ideas extending the frontier of knowledge and skills application by producing a substantial body of scholarly work as a written publication and/or a substantiated creative (set of) product(s) of which at least part merits national and/or international refereed publication and/or assessment.	Manifest the ability to developing new ideas and/or processes at the forefront of work or study contexts, including state-of-the art science, to address critical issues and complex problems and/or processes in professional and societal settings with integrity and sustained commitment.
IV. Are capable of critical analysis, evaluation and synthesis of new and complex ideas	Critical reflection, judgements, synthesising and design	Demonstrate deep understanding of complex theoretical frameworks, concepts, methodologies and/or practices at a level which allows for critically analysing, evaluating, comparing and synthesising these to serve as a foundation for (applied) research, creative thinking and developing of new insights and original ideas related to the field of studies and challenging societal topics.	Evidence the ability to identify and compare complex theories, concepts, methodologies and/or practices and high-level skills from one's own academic field as well as related fields to critically analyse, evaluate, compare and synthesize their usefulness to develop original and creative thinking which results in new insights and original ideas, field of studies and/or societal related.	Manifest metacognitive insight and analytical ability to critically appraise and reflect on new specialised skills and knowledge and field and societal related complex challenges and issues and contribute in discourse and teams to arrive to new insights and ideas which offer ways forward and/or address challenges and problems in complex and multi-dimensional settings.
V. Can communicate with their peers, the larger scholarly community and with society in general about their areas of expertise	Communication and information sharing	Demonstrate deep understanding of the appropriate means, skills, strategies, attitudes and approaches to communicate effectively complex information, multi-facial ideas, and multidimensional problems, challenges and solutions related to once own and related fields of studies and selected societal issues for a variety of	Evidence effective communication of various types of information involving multi-facial ideas and multi-dimensional problems, challenges and solutions by applying sophisticated strategies, means and skills tailored to a variety of audiences covering an informed general audience, field specialists and once peers.	Manifest, in complex workplace and/or societal related situations, including academia, the ability to communicate clearly and unambiguously about complex issues, using a variety of strategies to make convincing and evidence-informed arguments and by listening to others with the purpose to develop support and

		audiences, ranging from an informed general audience to field specialists and once peers.		possibly agreement by integrating a variety of viewpoints and opinions.
<p>VI. Can be expected to be able to promote, within academic and professional contexts, technological, social or cultural advancement in a knowledge based society</p>	<p>Continuous learning and development</p>	<p>Demonstrate deep understanding of best strategies to promote, share and discuss effectively new technical, social-economic and cultural insights in once work environment and related context(s), with the aim to contribute to the knowledge-based society, taking into account societal challenges, such as gender equality, intercultural issues, political and governance awareness, decision making, and sustainable development.</p>	<p>Evidence the use of strategic means to promote, share and discuss effectively science based technological and societal developments, which are at the forefront of knowledge, taking the welfare of the workplace and society at large as its reference.</p>	<p>Manifest continuous personal and professional development at the most advanced level of knowledge resulting from state-of-the-art knowledge and/or (creative) thinking, in individual, team-based and societal settings by initiating, organising, managing and evaluating activities to contribute to a knowledge-based society as well as welfare of society.</p>