



**BOLOGNA PROCESS:
Building A European Higher
Education Area**

**Recognition of Periods of
Studies and the Role of
Learning Outcomes**



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PRESENTATION: the issues that have come

up 1. Recognition for mobile students, including joint (international) programmes:

- Credit recognition in case of different grading systems
- Recognition and calculation of credits when they are dramatically different at home and host institutions
- Generally, problem of different grading systems and ECTS
- Provision of courses/modules of different HE cycles for mobile students – problems of recognition

2. Recognition for non-mobile students:

- Recognition of non-formal and informal learning in academic programmes
- ECTS for online education



Basic principles of recognition

1. Recognition requires flexibility
2. Recognition is based on recognizing periods of studies, not course unit to course unit comparison
3. Recognition should take place when there is no substantial difference
4. Double recognition should be avoided: two units having largely the same content
5. Cycles should be distinguished in terms of recognition, because they represent different levels of learning
6. A distinction should be made between credit and grade recognition

Recognition of studies is facilitated when a degree programme:

1. includes an major, (a) minor(s), electives
2. has a so called 'window' for activities not one to one related to core studies: a space of for example a half or one semester (15-30 ECTS) can be applied for work placements, electives, mobility, etc. Solves a lot of recognition issues and allows for personalizing a degree programme.



Role of profiles and programme learning outcomes

Every degree programme should:

1. have an unique profile, based on a disciplinary core and additional/ supportive course units: not different for (international) joint programmes
2. cover subject specific knowledge and skills and generic competences
3. be based on programme and unit learning outcomes which are related to the profile (the main objective of the degree)
4. have applied an ECTS credit model which does justice to the intended learning outcomes and related student workload. Allocation of credits is facilitated when a modular system is applied.

Profile and learning outcomes should be the outcome of a discussion between staff involved in the programme involving student representatives.

When preparing profiles and learning outcomes apply the literature and models available, e.g.

- *A Tuning Guide to Formulating Degree Programme Profiles. Including Programme Competences and Programme Learning Outcomes* (also published in French): http://www.core-project.eu/documents/tuning_guide_publicada_core.pdf
- The Tuning-CALOHEE Subject Area Based Qualifications Reference Frameworks: <https://www.calohee.eu>



CALOHEE Model: based on a Merger of the QF for the EHEA and the EQF for LLL



TEMPLATE FIRST CYCLE – BACHELOR – LEVEL 6

TUNING Qualifications Reference Framework (Meta-Profile) General Descriptors of a Bachelor Programme in the Subject Area of (LEVEL 6)

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>
Special feature degree programme	Three progressive levels of learning domains			
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				
II. 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				
III. 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				
IV. Can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences				
V. Have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy				
Knowledge		Skills		Autonomy and Responsibility

An example: offering a template for defining programme learning outcomes

TUNING-CALOHEE General descriptors for MASTER (level 7) Civil Engineering

OF EHEA 2nd cycle descriptors	SOE domain dimensions Level 7 (MASTER)	EOF descriptor Knowledge Level 7 - 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 - Critical awareness of knowledge issues in a field and at the interface between different fields	EOF descriptor Skills Level 7 - 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	EOF descriptor Wider Competences Level 7 - Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches - Take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
Special feature degree programme		Demonstrate knowledge and understanding of the disciplinary, professional, personal and interpersonal requirements necessary to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities*** that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking.	Apply knowledge and understanding to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking.	Select the most appropriate and relevant established method or new and innovative methods to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking.
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	<ul style="list-style-type: none"> Demonstrate in-depth knowledge and understanding of mathematics and sciences*** underlying civil engineering specialisation, at a level necessary to achieve the other programme outcomes. Demonstrate in-depth knowledge and understanding of engineering disciplines underlying civil engineering specialisation****, at a level necessary to achieve the other programme outcomes. Demonstrate critical awareness of the forefront of civil engineering specialisation. Demonstrate critical awareness of the wider multidisciplinary context of engineering and of knowledge issues at the interface between different fields. 	<ul style="list-style-type: none"> Apply knowledge and understanding to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking. 	<ul style="list-style-type: none"> Identify knowledge and understanding of the most appropriate and relevant established method or new and innovative methods to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking.
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	Analysis and Problem Solving	<ul style="list-style-type: none"> Demonstrate comprehensive knowledge and understanding of methods of analysis and problem solving in civil engineering issues (products, processes, systems, situations) in civil engineering subject area, including new and innovative methods, and of their limitations. Demonstrate comprehensive knowledge and understanding of methods of analysis and problem solving in civil engineering issues (products, processes, systems, situations) in civil engineering subject area, including new and innovative methods, and of their limitations. Demonstrate critical awareness of the need of solutions to be sustainable and of low impact on society and environment. 	<ul style="list-style-type: none"> Solve complex civil engineering problems that may be unfamiliar or in new and emerging areas of the subject area, including new and innovative methods, and of their limitations, involving considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical – societal, health and safety, environmental, economic and industrial – constraints. 	<ul style="list-style-type: none"> Identify the most appropriate and relevant established method or new and innovative methods to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking. Identify the most appropriate and relevant established method or new and innovative methods to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking.
	Design	<ul style="list-style-type: none"> Demonstrate comprehensive knowledge and understanding of design in civil engineering subject area, including new and innovative methods, and of their limitations. Demonstrate critical awareness of the need of solutions to be sustainable and of low impact on society and environment. 	<ul style="list-style-type: none"> Conceive and design complex civil engineering products (devices, artefacts, etc.), processes and systems that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical – societal, health and safety, environmental, economic and industrial – constraints. Design using knowledge and understanding at the forefront of the engineering specialisation. 	<ul style="list-style-type: none"> Identify the most appropriate and relevant established method or new and innovative methods to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking. Identify the most appropriate and relevant established method or new and innovative methods to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking.
	Investigations	<ul style="list-style-type: none"> Demonstrate comprehensive knowledge and understanding of research and investigation methods in civil engineering subject area, including new and innovative methods, and of their limitations. Demonstrate critical awareness of the need of solutions to be sustainable and of low impact on society and environment. 	<ul style="list-style-type: none"> Conduct searches of literature, to consult and critically use databases and other sources of information in civil engineering subject area and within broader or multidisciplinary contexts. Consult and apply codes of practice and safety regulations in civil engineering subject area and within broader or multidisciplinary contexts. 	<ul style="list-style-type: none"> Identify the most appropriate and relevant established method or new and innovative methods to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking. Identify the most appropriate and relevant established method or new and innovative methods to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking.
	Decisions making	<ul style="list-style-type: none"> Demonstrate comprehensive knowledge and understanding of materials, equipment and processes in civil engineering subject area and of their limitations. Demonstrate critical awareness of the societal, health and safety, environmental impact and of civil engineering activities. Demonstrate critical awareness of economic, industrial and managerial implications (such as project management) of civil engineering activities. 		<ul style="list-style-type: none"> Identify the most appropriate and relevant established method or new and innovative methods to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking. Identify the most appropriate and relevant established method or new and innovative methods to solve / design / investigate / conduct complex civil engineering problems / products, processes and systems / issues / activities that may be new or unfamiliar, involve considerations from outside the field of study, incompletely defined and /or conflicting issues and non-technical constraints, and require original/innovative thinking.
III. have the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete or limited ...	Decisions making	<ul style="list-style-type: none"> Demonstrate critical awareness of the ethical and social responsibilities linked to the management of work contexts in civil engineering subject area. 		<ul style="list-style-type: none"> Reflect on ethical and social responsibilities linked to the management of complex work contexts in civil engineering subject area and within broader or multidisciplinary contexts, taking decisions and formulating judgments.
IV. can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously	Team-working	<ul style="list-style-type: none"> Demonstrate knowledge and understanding of the strategies and methods of management of teams composed of different disciplines and levels. Demonstrate awareness of leadership responsibilities. 		<ul style="list-style-type: none"> Identify the most appropriate and relevant strategy and method of team management and to identify elements of successful teamwork. Take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams.
	Communication	<ul style="list-style-type: none"> Demonstrate knowledge and understanding of the communication strategies and of the diverse methods and tools of communication, including new and innovative ones, and of their limitations. 	<ul style="list-style-type: none"> Apply knowledge and understanding of communication strategies and to use diverse methods and tools of communication, including new and innovative ones, to communicate effectively, clearly and unambiguously information, describe activities and communicate their exhibits/results – and the knowledge and rationale underpinning these – to specialist and non-specialist audiences in national and international contexts and society at large. 	<ul style="list-style-type: none"> Identify the most appropriate and relevant strategy, method and tool of communication.
V. have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous	Lifelong Learning	<ul style="list-style-type: none"> Demonstrate knowledge and understanding of one's personal strengths and weaknesses and of the learning methods necessary to follow developments in science and technology and undertake further studies in new and emerging technologies in civil engineering subject area and within broader or multidisciplinary contexts. 	<ul style="list-style-type: none"> Engage in independent lifelong learning and to follow developments in science and technology and undertake further studies in new and emerging technologies in civil engineering subject area and within broader or multidisciplinary contexts autonomously. 	<ul style="list-style-type: none"> Identify the most appropriate learning strategy and method in independent lifelong learning and to follow developments in science and technology and undertake further studies in new and emerging technologies in civil engineering subject area and within broader or multidisciplinary contexts.

Example of a Subject Area Reference Framework based on merger and dimensions

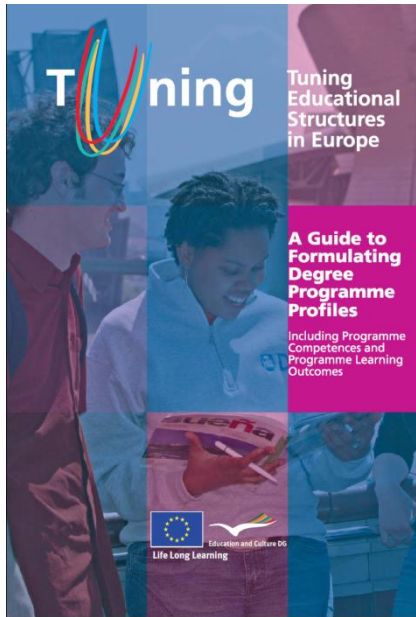
Foundation for more detailed Subject Area Assessment Reference Frameworks which allow for measuring / assessment

Based on dimensions and learning domains indicating well defined progression levels

QF EHEA 1 st cycle descriptors	SQF domain dimensions Level 6 (BACHELOR)	EQF descriptor Knowledge Level 6 Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	EQF descriptor Skills Level 6 Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	EQF descriptor Autonomy and Responsibility (Wider Competences) Level 6 - 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. 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	1. Knowledge management and creation	Advanced knowledge of major conceptual elements required of a teacher as knowledge manager and creator	Ability to develop different types of thinking and apply these to different situations determined by curricula, pedagogical and policy needs	Capacity to envisage consequences of position taking and commitment to act with intellectual consistency
II. 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	2. Design and management of processes of learning, teaching and assessment	Knowledge of classroom management and syllabus design and enhancement: teaching, learning and assessment processes	Ability to evaluate and select appropriate techniques and strategies of classroom management and syllabus enhancement: teaching, learning and assessment processes	Capacity and commitment to ensure that the different elements of the course contribute to the development of desired learner profile
III. 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	3. Learner empowerment, potential and creativity	Advanced knowledge of theories, strategies and tools that can support learner empowerment, and development of learner fullest potential and creativity	Ability to apply theories, strategies and tools that can foster the development of the fullest potential and creativity of each learner	Capacity and commitment to contribute to maintenance of contexts of engagement with learner holistic growth and development
	4. Values and social leadership	Advanced knowledge of different value systems and of how to identify and promote those which can foster the fulfilment of the teacher's professional mission	Ability to identify and implement approaches and actions required to address the social needs; ability to analyse consequences of different value choices and to manage diversity	Capacity and commitment to build a sense of social responsibility in the choices made at personal, professional and contextual levels and act on needs and potentialities identified
IV. Can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences	5. Communication	Advanced understanding of different critical elements, methods and tools for communicating at the interpersonal level, as well as in groups and society as a whole	Ability to identify and apply resources for improving communication at different levels, as well as stay up-to-date with ICT	Capacity and commitment to foster transparency and responsibility in interpersonal interactions, in teams and groups, as well as in social media
V. Have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy	6. Development as professionals and life-long learners	Advanced knowledge of sources, tools, mechanisms and main trends of personal and professional updating	Ability to critically examine applied educational research and improve own practice following evidence based approaches	Capacity and commitment to act as a critically reflective member of an international teaching community that values evidence-based practice

Degree Programme Learning Outcomes

According to the *Tuning Guide to Formulate Degree Programme Profiles*:



The following are characteristics of good verifiable, comprehensible and observable PLOs. They should be:

- **Specific** (giving sufficient detail, written in clear language)
- **Objective** (formulated in a neutral way, avoiding opinions and ambiguities)
- **Achievable** (feasible in the given timeframe and with the resources available)
- **Useful** (they should be perceived as relevant for higher education studies and civil society)
- **Relevant** (should contribute to the aim of the qualification involved)
- **Standard-setting** (indicate the standard to be achieved)

Writing good Programme Learning Outcomes



A Learning Outcome contains 5 elements to be ‘measurable’ (the level of competence that has been achieved):

1. An **active verb form**
2. An indication of the **type** of LO: knowledge, cognitive processes, skills, or other competences
3. The **topic** area of the LO: this can be specific or general and refers to the subject matter, field of knowledge or a particular skill
4. An indication of the **standard** or the **level** that is intended / achieved by the LO
5. The **scope** and/or **context** of the LO.



Non-formal and informal learning

How to handle recognition of informal and non-formal learning?

Requires a **well defined procedure!**

Instrumental: (Examination) **board** installed / tasked **to recognize learning**: prior, non-formal and informal

Procedure: (Potential) student should **document the learning**:

Options: (1) Formal documentation: Transcript of Learning, Certificates, etc.

(2) Other type of documentation: portfolio containing proofs of activities established

Compare informal / non-formal learning with programme: PLOs and Unit LOs; identify communalities. Aim: **avoid double learning** by recognizing what has been learned already.





Responding to the issues

Moving from staff-centred / expert driven education to student-centred education – ‘what should the student know and able to do’ to operate successfully in society as a graduate of your programme, is the key of implementing the Bologna Process objectives.

Credit recognition is always a combination of learning (content and level) and student workload required: Key question does the learning taken elsewhere contribute to the PLOs?

Non-formal and informal learning has to be matched against the PLOs of a degree programme: is there a match recognition should take place. This is the case for any type of learning including online education

Credits - reflecting learning and student workload - should **never be mixed up with the level of performance** (expressed in grades)

To solve the **grade recognition issue**, link a percentage distribution table to the grades. Percentages can be easily compared, grades can not.