

Annex 1: SEA-EU task 2.3 micro-credentials “Future Skills” Framework

The SEA-EU micro-credential Framework on “Future Skills”

Meta-categories	Skills/Competences	Learning outcomes
Higher order thinking competences	Adaptability competences Adaptability competence encompasses the knowledge, skills and responsible attitude to approach unknown situations positively, to work on several tasks simultaneously and to deal constructively with change.	<i>Students</i> <ul style="list-style-type: none"> - define techniques and methods for proactive behavior in unknown situations - identify challenges in learning and working environments - describe improvisation techniques for dealing with change - implement adaptation strategies for dealing with unknown challenges - evaluate individual learning and working steps for dealing with unknown situations or challenges - integrate improvisation techniques into the adaptation process - evaluate their intrinsic motivation in adaptation situations - assess their own role in working with others in unfamiliar situations - develop priorities for adaptation in challenging or unfamiliar situations, taking into account their own needs and the needs of others
	Problem solving competences Problem-solving competence comprises the knowledge, skills, and responsible attitude required to effectively identify, analyze, and resolve complex issues and challenges within a given context. It involves the application of	<i>Students</i> <ul style="list-style-type: none"> - recognize complex problems from diverse domains, identifying key components and interrelationships. - synthesize information from various disciplines, fostering a holistic understanding of problems and solutions. - name problem-solving theories and models - evaluate information objectively, identify assumptions, and form well-reasoned conclusions. - generate innovative solutions to complex issues. - cultivate a resilient attitude towards problem-solving, demonstrating perseverance in the face of setbacks.

	critical thinking, creativity, and ethical considerations to navigate and overcome obstacles in a systematic and effective manner.	<ul style="list-style-type: none"> - appreciate diverse perspectives, fostering collaboration and enhancing their ability to tackle multifaceted problems. - develop a heightened awareness of ethical considerations in problem-solving, ensuring that their solutions contribute positively to society.
	<p>Critical and Systems thinking competences</p> <p>The competence of critical thinking encompasses the knowledge, skills and responsible attitude for process-based thinking behavior that serves to systematically analyze and evaluate information, ideas and arguments and to reach factually sound conclusions.</p>	<p><i>Students</i></p> <ul style="list-style-type: none"> - identify different arguments and claims for their critical analysis - recognize facts, concepts, theories and principles of the respective field of knowledge that are relevant to carry out an informed, critical analysis - name basic steps and techniques of critical thinking - combine different techniques of critical thinking to analyze experiences, complex information and theories critically and objectively - formulate questions to critically analyze arguments and conclusions - develop and evaluate rational arguments from existing perspectives - use facts, concepts, theories and principles of the respective field of knowledge to develop alternative solutions in the critical thinking process - find assessment standards for comparing different theses and arguments - recognize their own subjectivity - develop a value system that appreciates existing arguments, theses or decisions in the process of critical thinking - critically weigh different perspectives against each other - take a responsible stance on their own and other arguments
Self competences	<p>Active Learning competences</p> <p>Active Learning competence encompasses the knowledge, skills and responsible</p>	<p><i>Students</i></p> <ul style="list-style-type: none"> - identify personal needs and areas of learning - describe different learning methods - recognise techniques and methods for planning, reviewing and adapting their own learning

	attitude required to develop actively individual learning strategies and to shape self-organised one's own learning process in a solution-oriented manner.	<ul style="list-style-type: none"> - assess their own level of development - create individual learning and development goals - organise and evaluate their own learning process - identify their own preferred learning methods - develop a personalised learning strategy - consider solution-orientated changes and opportunities for learning - are convinced of their own ability to achieve goals - internalise the positive appreciation of learning as a life-enriching activity - take the initiative to extend and deepen their own learning
	Self-awareness competences Self-awareness competence comprises the knowledge, skills and responsible attitude to recognize and classify one's own patterns and strategies in behavior and to align behavior with these insights and values.	<i>Students</i> <ul style="list-style-type: none"> - identify techniques and methods of self-reflection - identify personality and basic psychological models for self-reflection - review techniques, methods and models of self-reflection by applying them in relation to their own personality - develop the ability to self-observe - analyse their own motives in self-reflection - develop skills for self-regulation - become aware of their own emotional state in the process of self-reflection - find assessment standards for their own values and behaviour through self-reflection - weigh different perspectives against each other and relate them to their own perception in self-reflection - reflect on personal stereotypes, behavioural patterns and prejudices - develop an awareness of and self-confidence in their own abilities in the process of self-reflection
	Complexity and ambiguity competences Complexity and ambiguity competence	<i>Students</i> <ul style="list-style-type: none"> - identify concepts of complexity and ambiguity - identify techniques and strategies for coping with complexity and ambiguity - identify complex challenges and

	<p>comprises the knowledge, skills and responsible attitude to recognize, classify and accept ambiguity and heterogeneity in situations and roles</p>	<p>conflicting goals</p> <ul style="list-style-type: none"> - analyse contradictory information and role expectations - analyse contradictions - examine the handling of complex systems consisting of many interconnected parts that often interact in a non-linear way - evaluate unconventional and innovative solutions - manage systems that are difficult to predict due to their diversity, dynamics and emergence - allow for uncertainties in complex systems - honour different perspectives in ambiguity - accept ambiguity in their world view - tolerate emergent phenomena and chaos
<p>Social and communication competences</p>	<p>Collaboration and networking competences Collaboration and networking competences comprises the knowledge, skills and responsible attitude to face challenges in a group in a collaborative and participative way in order to solve a problem or achieve a goal and to establish, maintain and use effective connections and networks.</p>	<p><i>Students</i></p> <ul style="list-style-type: none"> - name tools for collaboration - name collaboration theories and co-creation methods - define common working methods and forms of collaboration - describe effective communication and dialogue strategies that facilitate the development and maintenance of relationships in a network - name strategies and techniques for finding, analysing and sharing relevant information in order to identify resources and expertise within the network - characterise strategies and techniques to successfully build relationships in networks - create a positive working atmosphere in collaboration - plan a common setting for cooperative work - organise the roles and tasks of the cooperation partners - jointly combine goals and solutions for successful collaboration - use tools, techniques and strategies to build and maintain relationships in a

	<p>network</p> <ul style="list-style-type: none"> - develop procedures to bring people and ideas together in an interdisciplinary way - connect people and in this way contribute to the success of the network - honour the individuality of the cooperation partners - develop shared values for their collaboration - categorise the goals and values of the cooperation partners - align their behaviour with the goals of the collaboration - participate in networks - practise respect and appreciation when dealing with other people in the network - establish relationships between people to build and maintain the network
<p>Communication competences Communication competence encompasses the knowledge, skills and responsible attitude to communicate clearly, comprehensibly and congruently and thus to contribute to building interpersonal relationships, avoiding misunderstandings and improving the quality of communication.</p>	<p><i>Students</i></p> <ul style="list-style-type: none"> - recognise the structure of conversations, presentations and written messages - name methods and models of comprehensible communication - recognise paralinguistic features of communication - recognise the significance of gestures, facial expressions, posture and tone of voice - compare how non-verbal signals are interpreted in different cultures - use the appropriate words to convey information, thoughts and ideas clearly and precisely - select language and body language appropriate to the target group and situation - develop self-control to consciously manage their own non-verbal communication - examine the possible effects of their own non-verbal communication on others - base their communication behaviour on the principles of honesty and authenticity - practise clarity in verbal and non-verbal communication, share information openly and thus avoid misunderstandings

	<p>Leadership competences</p> <p>Leadership competence encompasses the knowledge, skills and responsible attitude to successfully lead, motivate and influence a group of people or an organization to achieve common goals.</p>	<p><i>Students</i></p> <ul style="list-style-type: none"> - present the principles of good leadership - recognise classic and modern leadership styles - define feedback rules - explain socio-psychological experiments and phenomena from the context of leadership - name definitions of leadership from various disciplines - develop a confident appearance in leadership situations - apply communication tools for leadership situations - design smart goals for themselves and as a leader for others - assess tools for self-leadership and for leading others - organise leadership situations with people and goals in mind - develop clarity and a self-reflective attitude with regard to their own leadership role - develop a value-oriented attitude in leadership situations that is characterised by empathy and appreciation - align their leadership behaviour with principles of integrity and ethics in dealing with power
<p>Transformative competences</p>	<p>Entrepreneurship competences</p> <p>Entrepreneurship competences encompasses the knowledge, skills and responsible attitude to establish and successfully manage a company by developing innovative solutions, recognizing opportunities and taking risks. This</p>	<p><i>Students</i></p> <ul style="list-style-type: none"> - identify techniques for developing their own ideas for successful entrepreneurial activity or business start-ups - recognise methods for carrying out market analyses - explain the legal requirements and conditions for setting up and running a business - describe methods for estimating and evaluating risks - describe methods of business model development - develop their own ideas for new business models and entrepreneurial decisions - evaluate innovation potentials for start-up projects and entrepreneurial decisions

	includes market and customer understanding, financial management, marketing, personnel management and adaptability.	<ul style="list-style-type: none"> - use methods, tools and techniques for successful business start-ups and management - convince others of their ideas or proposed solutions for entrepreneurial challenges, cooperation or investment - flexibly assess changing challenges and requirements for their entrepreneurial activities - orientate their behaviour towards independence, initiative, openness to innovation and constructive cooperation in entrepreneurial processes - find benchmarks for assessing the sustainability of start-up projects and entrepreneurial decisions - evaluate risks and affirm change in the entrepreneurial decision-making process - practise a culture of networking and communication to promote start-up projects and entrepreneurial success - develop an attitude of responsibility towards social, operational and human challenges in start-up projects and entrepreneurial decisions
	Citizenship competences Citizenship competence comprises the knowledge, skills, and responsible attitude required to navigate, engage, and contribute effectively in diverse societal contexts. It involves a deep understanding of global issues, legal and political systems, and cultural perspectives, fostering the	<i>Students</i> <ul style="list-style-type: none"> - name the major components of global issues, including legal and political systems - explain cultural perspectives and their impact on social interactions - Students explain relationships between different cultural values and behaviors within different communities - create well-founded solutions for complex social challenges in different contexts - analyze and evaluate the interplay of legal frameworks, cultural dynamics and global issues - develop proposals to advocate for positive social change in a way that respects diverse perspectives and promotes inclusive dialog - articulate personal values associated with citizenship, expressing an understanding of the significance of responsible engagement in diverse

	<p>ability to critically analyze information and communicate effectively.</p>	<p>societal contexts and attaching subjective worth to participation</p> <ul style="list-style-type: none"> - actively participate in discussions on citizenship competences, expressing their reactions, opinions, and questions related to societal issues - integrate ethical values into their decision-making processes, illustrating how these values contribute to responsible citizenship in diverse societal contexts - demonstrate a commitment to upholding ethical standards and values associated with citizenship competences, both in academic and real-world scenarios. - critically examine their own values in the context of global issues, legal systems, and cultural perspectives
	<p>Global awareness competences</p> <p>Global awareness competences comprise the knowledge, skills, and responsible attitude required to comprehend and engage with the complex interconnections of our interconnected world. This includes a comprehensive understanding of global issues spanning social, economic, and environmental realms, as well as the ability to analyze and interpret diverse cultural perspectives.</p>	<p><i>Students</i></p> <ul style="list-style-type: none"> - analyze global issues by critically examining the interconnected relationships between social, economic, and environmental factors, demonstrating the ability to discern patterns and evaluate the implications of these interconnections on a global scale - assess the economic dimensions of global challenges, utilizing economic theories and models to analyze the distribution of resources, trade patterns, and the socio-economic disparities that influence global development. - apply cross-cultural communication skills to engage with diverse stakeholders, fostering effective collaboration and negotiation in the pursuit of global solutions to social, economic, and environmental challenges. - create innovative strategies for addressing global challenges, integrating insights from social, economic, and environmental perspectives to propose comprehensive and adaptable solutions. - design and implement projects that contribute positively to global well-being, applying their knowledge and skills to address real-world challenges and

	<p>promoting responsible and sustainable practices on a global scale.</p> <ul style="list-style-type: none"> - participate in activities that require them to analyze and interpret information from diverse cultural perspectives. - articulate personal values related to global citizenship, expressing empathy and concern for the well-being of people worldwide. - actively contribute to the development of global ethical frameworks, integrating values and principles into their decision-making processes.
<p>Digital and media competences</p>	<p>Data Literacy competences Data literacy encompasses the knowledge, skills and responsible attitude to effectively collect, understand, analyze and use data, big data and AI.</p> <p><i>Students</i></p> <ul style="list-style-type: none"> - identify basic principles of mathematics and statistics when dealing with data - list databases, query languages, programming languages and data visualisation tools for analysing data - explain ethical and legal aspects of data processing and describe the effects in terms of data security, data protection regulations, access rights, etc. (including the use of Artificial Intelligence (AI)) - identify various procedures for handling data from creation to deletion (data life cycle) - collect, classify and evaluate data - create data products including products based on large language models (LLM) - explain AI - use and reflect on the use of AI-products - analyse and check data to uncover hidden biases and errors - implement appropriate guidelines for secure and ethical data processing, including the processing of big data for AI-Models - follow a responsible approach to data, big data and AI - practise openness, curiosity and a willingness to learn when dealing with data and digital innovations (e.g. Artificial Intelligence, machine learning, etc.) - organise their work and interaction with data according to ethical principles: Avoidance of discrimination and prejudice,

		as well as compliance with legal rules and regulations; "data fairness" as a basic attitude
	Media literacy competences Media literacy competences encompasses the knowledge, skills and responsible attitude to understand, compare and critically evaluate, select and create media in a responsible way so that they are used effectively and in different contexts.	<i>Students</i> <ul style="list-style-type: none"> - name different types, formats and channels of media for different target groups - characterise the criteria for high-quality, trustworthy media content - describe the effects of different media - describe methodological approaches to media analysis - compare media and data according to specific criteria, e.g. seriousness, credibility/trustworthiness, risk of manipulation - name criteria for a technically proficient use of different media - explain the advantages and disadvantages, opportunities and risks of different types of media - describe methods for recognising manipulated content, advertising and disinformation - apply various media analysis methods - assess media systematically by collecting and analysing evidence that leads to well-founded conclusions - assess interests and conditions of media production and distribution - examine various media critically and competently in order to use them to form opinions and make decisions - use media interactively, purposefully and in a target group-orientated way to communicate their own thoughts and knowledge - critically assess their own media usage behaviour and adapt it if necessary - configure the media used on the basis of security and privacy settings - are committed to an analytical-critical, evidence-based attitude towards media - weigh up the importance of media in shaping perceptions of reality, (political) opinion-forming and social behaviour - recognise the importance of flexibility,

		<p>adaptability, willingness to learn and problem-solving skills when dealing with rapidly changing media</p> <ul style="list-style-type: none"> - follow rules of behaviour and appropriate communication when using media - develop a critical, self-reflective and responsible attitude with regard to their own media usage behaviour - feel committed to a data protection-compliant and rights-preserving approach to media - have the principle of taking a stand against disinformation, propaganda and hate speech
	<p>Digital collaboration competences</p> <p>Digital collaboration encompasses the knowledge, skills and responsible attitude to exchange information in the digital space, to communicate effectively and to collaborate with the help of digital tools, platforms, and communication technologies, along with the ability to leverage them for seamless collaboration.</p>	<p>Students</p> <ul style="list-style-type: none"> - name tools for digital interaction and virtual collaboration - characterise the potentials and challenges of human-machine interaction - identify the opportunities and limitations of digital communication and interaction - identify the opportunities and challenges of digital interaction - apply different tools for effective and appropriate digital interaction - configure connections to other interaction partners in the digital space with the help of digital tools - create a constructive working atmosphere for virtual collaboration - design solutions for conflicts in the digital space - use indicators to analyse human-human and human-machine interaction in the digital space - evaluate the special features of digital communication - develop a change-conscious and responsible attitude towards (new) tools for digital interaction - accept ambiguity in digital communication and practise patience in contradictory situations - practise the principle of transparency in virtual collaboration

Based on:

European Commission, Directorate-General for Employment, Social Affairs and Inclusion, ESCO handbook – European skills, competences, qualifications and occupations, Publications Office (2017), <https://data.europa.eu/doi/10.2767/934956>

Athanasia Kotsiou, Dina Daniela Fajardo-Tovar, Tom Cowhitt, Louis Major & Rupert Wegerif (2022). A scoping review of Future Skills frameworks, Irish Educational Studies, 41:1, 171-186, DOI: 10.1080/03323315.2021.2022522

Key Skills Center, Kiel University (2023), Our definition of key competences, <https://www.zfs.uni-kiel.de/en/key-competences/our-definition-of-key-competences>