

STRENGTH mobility scheme

Introduction

The STRENGTH mobility scheme reflects the vision of project consortium to emphasize on the transnational VET mobility as a sustainable part of project strategy for international recognition and validation of competences and qualifications. It is based on the documents issued by EC in respect to Erasmus+ Vocational Education and Training Mobility Charter 2015 - 2020 ([http://www.mobilnost.hr/prilozi/05_1399277506_ENG - VET Charter Call part I .pdf](http://www.mobilnost.hr/prilozi/05_1399277506_ENG_-_VET_Charter_Call_part_I.pdf)).

The STRENGTH mobility scheme outlines the basic steps of a mobility procedure that is used as a basis for recognition and validation of competences acquired through performance of a training period abroad. Here, the planning and organizational steps necessary when using the model for international VET placement are described. The obligations of the training providers in the home- and host institutions as well as those of the mobile learner who want to gain training experiences abroad are described.

The mobility scheme includes also a set of documents that provide basis for understanding, implementation, and application of international VET placement. It includes:

- Memorandum of Understanding template;
- Learning Agreement frame;
- Sending body specific documents;
- Training provider specific documents;
- Mobile learner Personal Qualification Record;
- Competence-based mobility Certificate.

Mobility phases

Preliminary phase

During this phase a partnership between competent training bodies/institutions is established. For this purpose a training provider abroad is searched for and chosen on the basis of the training opportunities/programmes it offers and their compatibility with the sending institution and national requirements (accreditation requirements, language proficiency, etc.).

The second step is the transmission of statement of purpose in which the general goal of the mobility procedure initiated is stated by both home- and host-institutions. The mutual willingness and as well as details concerning the mobile learners are specified and declared through official Memorandum of Understanding (MoU). The MoU sets the framework for credit transfer and states the mutual acceptance of the status and procedures of the training providers' institutions.

Preparatory phase

During this phase the establishment of a Learning Agreement is done. Before finalizing this important document the training providers in the home institution compile set of papers that certify the already acquired by the mobile learner competencies. All relevant documents and certificates must be included in this set and the home institution's obligation is to support the mobile learner in delivering them. Among all, the Competence-based certificate, developed by the home organisation and issued to the trainee is of special importance.

It is an obligation of the home institution to send the collected set of documents to the training provider in the host country. In this way the host institution can decide on the most appropriate competences that can be built upon, or for which placement the mobile learner is mostly suited. The thorough analysis of the documents helps particularly the above mentioned specification of the training activities and ensures that the mobile learner's current status of competences development is taken under

consideration and that the training period will be useful, without under- or overestimated expectations.

During this phase details concerning the indispensability of the competences missed by the mobile learner at his/her home institution during the training period abroad are specified as well. The clarification of any potential deficit in competences and the procedure for its overcoming must be stated as an additional clause in the Learning Agreement and certified by the both training institutions and the mobile learner.

After signing of the Learning Agreement between the training provider in the home country and the training provider in the host country, the latter must assemble and send an Information Package to the training provider in the home country to be transmitted to the mobile learner. The information package comprises instructions and information about the requirements in the host country for stay permission, any financial matters, insurance, language requirements, accommodation, cultural issues, etc.).

Finally, it is home institution obligation to support and encourage the mobile learner to prepare for his / her stay in the other country and culture.

Implementation Phase

This phase starts with the beginning of the training period abroad. During it the mobile learner completes the preliminary negotiated in the Learning Agreement training programme.

During this period both training providers in the home- and host institutions stay in touch directly or through the mobile learner for further clarifications on the training process. If necessary, the training programme specified in the Learning Agreement may be amended officially. Thus the mobility activities will be monitored in order to assure the highest possible quality of the training and communication to the mobile learners when they are abroad so that they have a reference point for any professional or personal issue.

Upon completion of the training period, the training provider in the host country is responsible to issue a Competence-based Certificate for the newly acquired Learning Outcomes during the stay abroad. At the end of the stay, this Competence-based

Certificate is sent to the training provider in the home country. The latter remains responsible for the quality, the contents and the recognition of the mobility period, i.e. for the assessment procedures that are used in validating and recognising the learning outcomes incl. non-formal and informal experiences and unplanned but achieved learning outcomes.

Final Phase

After completion of the stay abroad, the mobile learner returns to his/her home institution. The home institution training provider verifies whether all formal clauses in the Memorandum of Understanding and learning Agreement have been minded. The Competence-based Certificate is examined for the new competences achieved by the mobile learner. The newly acquired LO are accumulated and integrated as a part of the Mobile Learner current qualification. If certain competences are missed their compensation is organised according to the clauses stipulated in the Learning Agreement.

Memorandum of Understanding template

<http://www.ecvet-team.eu/system/files/documents/18/draft-memorandum-understanding.pdf>

Learning Agreement frame

<http://www.ecvet-team.eu/system/files/documents/19/draft-learning-agreement.pdf>

Sending body specific documents

- EUROPASS language passport:
(<https://europass.cedefop.europa.eu/en/documents/european-skills-passport/language-passport>)
- EUROPASS Diploma supplement:
(<https://europass.cedefop.europa.eu/en/documents/european-skills-passport/diploma-supplement>)
- EUROPASS Certificate supplement:
(<https://europass.cedefop.europa.eu/en/documents/european-skills-passport/certificate-supplement>)

Training provider specific documents

- Competence-based mobility Certificate: EUROPASS mobility:
(<https://europass.cedefop.europa.eu/en/documents/european-skills-passport/europass-mobility>)

Mobile learner Personal Qualification Record (see Annex 1 for assembly instructions)

PART A: basic documents:

- Title page: general information about the owner of the record
- Table of contents
- Professional mission statement and professional goals: Motivation letter

- Professional CV: information about education completed, chemical engineering and other relevant work experience; special skills (EUROPASS CV: <https://europass.cedefop.europa.eu/en/documents/curriculum-vitae>)
- Individual professional profile: Indicating the stage of competence development the trainee has reached at a certain point in the training, as well as the already acquired ones.
- Documents for international VET placement already performed: comprising Learning Agreement, Sending body and Training provider specific documents.
- Competence-based Mobility Certificates already gained: representing both the organizational and individual professional profiles and including the certificate owner name, the training provider name and the date the certificate was issued

PART B: additional documents

- Experience in chemical engineering: documents and evidence of commitment and experience in Chemical Engineering (a chronological list of any paid, volunteer, fieldwork, etc. experience)
- Other (optional): certificates; honours, awards, etc.; leadership activities; conferences attendance; non-credit courses attendance; specific competences attained outside the Chemical Engineering area, etc.

ANNEX 1: STRENGTH Qualification Record - Principles for Creation

1. Key terms to be considered

Competences

In a broad sense “competence” means cognitive competences (knowledge), functional competences (skills) as well as social competences (behaviour).

Competence areas

A competence area comprises various forms of competences necessary for completing core work tasks in a certain occupational field. Based on core work tasks, a varying number of competence areas can be defined, depending on the complexity, range of activities or job opportunities within a certain occupation.

In STRENGTH project 5 competence areas are defined per occupational field.

The process of developing competences

For each competence area, 8-9 steps of the competence development process are described. The nature of the competence area determines whether it makes sense to differentiate more or fewer steps of competence development. Therefore, no concrete number of steps can be pre-determined. As a consequence, this means that the steps only make sense within one single competence area, and that the numbers of steps of competence development for one different competence area does not necessarily correspond to the steps for any other area. This “flexibility” of the steps also makes it possible to integrate already-existing descriptions of steps for competence development.

Description of competences development

The competences depend on a variety of characteristics and may be localized in different dimensions (e.g. in the degree of independence or the assessment of the complexity of a task).

Those dimensions have to be expressed in relation to core work tasks.

The following principles have to be taken into account:

- The description of a step of competence development includes not only the degree or specification of one or more dimensions, but must be related to the work context and in STRNGTH model – to the green-job related context.
- The description should not be restricted to competences that can be formulated analytically (e.g. part-competences, isolated tasks), yet cannot be identified in the work context.
- Exemplary dimensions:
 - Ability to perform independent work tasks;
 - Ability to deal with a certain complexity;
 - Ability to deal with quality standard demands;
 - Ability to deal with dynamic situations;
 - Ability to deal with in transparency.

Description of competences in relation to the green jobs context

The description of the competences on the various steps of competence development takes place in a context-related manner.

STRENGTH model core work tasks are comprehensive tasks within the **green jobs** context a person with the respective occupational profile has to deal with.

Thus, the descriptions of the competences are designed to form a clear picture of how they can be applied in the green jobs context. The descriptions include green jobs-related categories to clarify the work activities in the Chemical Engineering field.

Green jobs are jobs related to preserving or restoring the environment. They include the following main categories: producing energy from renewable sources, improving energy efficiency, preventing and cleaning up pollution and greenhouse gases, and conserving natural resources. They can be classified as:

- Jobs in businesses that produce goods or provide services that benefit the environment or conserve natural resources.

- Jobs in which workers' duties involve making their establishment's processes more environmentally friendly or use fewer natural resources

STRENGTH model green jobs-related categories are those measured through:

- the so called 'output approach'. These green jobs concern production units within the field of Chemical Engineering that manufacture green goods and/or provide green services, *i.e.* goods or services that benefit the environment or conserve natural resources. These are research and development, installation, and maintenance services.
- the so called 'process approach'. These green jobs concern production units within the field of Chemical Engineering that use environmentally friendly manufacturing processes and practices. In them workers' duties involve making the manufacturing processes more environmentally friendly or use fewer natural resources. It means to research, develop, or use technologies and practices to lessen the environmental impact of the establishment, or train the establishment's workers in these technologies and practices. For example, a chemical engineer who develops a chemical manufacturing process resulting in lower air pollution emissions or a chemical technician, who tests air samples for pollution emissions levels.

Style of language used to describe competences

Use of complete sentences (e.g. "He/she is able to").

2. Qualification Record – 'W' questions

2.1 WHAT does it mean?

- Set of documents certifying the accomplishments a trainee has achieved during defined study/training period;
- Tool for tracking and accumulation in a common location trainee's work results;

- Show-case of trainee's efforts, progress, achievements, responses, (self)assessment;
- Means for bringing together interrelated knowledge and experience with green job-related competences in Chemical Engineering.

2.2. **WHY** is it necessary?

The Record serves the following main functions:

- To demonstrate that a trainee has attained certain-level competencies in the core Chemical Engineering areas;
- To offer information that can be used by the competent authorities responsible for Chemical Engineering education to assess curricula's effectiveness in providing trainees with the knowledge, skills and wider competence necessary to become proficient in the core Chemical Engineering areas.
- To provide potential employers an organized and well-selected information for an employee professional development, skills and experience showcasing her/his accomplishments and capabilities.
- To demonstrate the paths one has taken and to assist in determining her/his future career directions and prospects, since learning and development are irrevocable part of professional life.
- To serve as a means of self-assessment indicating how a trainee achieved specific and wider competencies through training courses, fieldwork, community service, and paid work experience.

2.3. **WHEN** is it useful?

- When a trainee applies to continue and finish his/her study at a host institution;
- When a trainee applies for a mobility exchange within a defined study period;
- When one applies for promotion at her/his work place;
- When one applies for new job position.

2.4. **WHO** is it foreseen for?

The Record is a multipurpose instrument that can be used by:

- The trainee to track her/his own progress on achievement of certain competences during a training period, to define the areas that are missing in a certain training programme, and to select those learning experiences that will strengthen the target competence in Chemical Engineering areas;
- The trainer to mainstream the training process and focus it on those knowledge, skills and wider competence that will fit the target qualification;
- The potential employer to evaluate nominations for a target job position.

2.5. **HOW** is it assembled and **WHAT** information, documents it contains?

The Record comprises the following key sections, organized in two parts.

PART A: basic documents:

- Title page: general information about the owner of the record (full name, contact information, area of specialization, date of matriculation, etc.)
- Table of contents
- Professional mission statement and professional goals: statement and reflection, stage of mission realization and goals achievement
- Professional CV: information about education completed, chemical engineering and other relevant work experience; special skills
- Individual professional profile: Indicating the stage of competence development the trainee has reached at a certain point in the training, as well as the already acquired ones
- International VET placement documents: comprising Memorandum of Understanding, Learning Agreement, Sending body and Training provider specific documents.

- Competence-based Mobility Certificate: representing both the organizational and individual professional profiles and including the certificate owner name, the training provider name and the date the certificate was issued

PART B: additional documents

- Experience in chemical engineering: documents and evidence of commitment and experience in Chemical Engineering (a chronological list of any paid, volunteer, fieldwork, etc. experience)
- Other (optional): certificates; honours, awards, etc.; leadership activities; conferences attendance; non-credit courses attendance; specific competences attained outside the Chemical Engineering area, etc.

3. STRENGTH Qualification Record: the 'Common & Green Competence' elements

The common competences describe what a trainee, completed a full training programme in Chemical Engineering area should be able to do. The green competences specify the knowledge and skills trainees in a defined Chemical Engineering area should have in green-jobs related context. Both types of competences are covered through the accomplishment of specific study courses. Each competence is linked to the specific learning objectives of the relevant study courses. As the Chemical Engineering specific competencies are interdisciplinary by nature, for many of them one and the same specific course is required to be covered.

Competence consists of three basic elements:

- **KNOWLEDGE**: acquisition, understanding and memorizing of specific content (theoretical considerations, facts, phenomena, postulates, concepts, etc.). The knowledge ensures '*knows what ...*' and '*knows how to ...*', i.e. ability to understand objects, events, situations, processes, structures, and to know how to operate with them.
- **SKILLS**: basic and specific in a defined professional context and directly related to a defined professional role. The skills ensure '*shows how to ...*'.

The basic ones represent a basis for professional upgrading and define individual potential. The green job-related skills are applied as an indicator for individual differentiation, necessary in certain specific operations, typical for a given profession in green jobs context.

- **WIDER COMPETENCE:** general skills and attitudes, individually related to the process of learning, thinking and self-training; presentation in social life and at job.

In the record each Chemical Engineering competence area contains its own matrix. This matrix comprises:

- Bank of cognitive information that help the trainee to attain the '**Knowledge**' part of a competence, relevant to defined core work tasks;
- Bank of practical knowledge that help the trainee to attain the '**Skills**' part of a competence, relevant to defined core skills;
- '**Wider Commences**' required for the defined area.

The competence elements can be described either as a whole (holistically) or separately (atomistically). When described holistically, they comprise unified narrative presentation of cognitive, technical and other abilities. This is the approach used by STRENGTH model for description of **common competencies**. The other approach is used for description of the **green competences** and here, for each competence area, the three basic elements are defined separately.

The **STRENGTH common competences** are as follows:

1. Apply the core functions of assessment, policy development, and assurance to the analysis of Chemical Engineering problems and their solutions
2. Find, use, interpret and critically evaluate methods, analyses and findings commonly found in the Chemical Engineering literature
3. Apply basic informatics techniques (e.g. bibliographic, database management, graphical and statistical software) to retrieve, analyze and summarize Chemical Engineering information

4. Apply principles of effective communication in presenting Chemical Engineering information in various media and formats to professional and general audiences
5. Apply appropriate principles and methods to the collection, management and analysis of Chemical Engineering data and to answer research questions
6. Apply ethical principles to Chemical Engineering activities and endeavours (e.g. use of information technology; assessment and research; program development, implementation and evaluation; and policy development and analysis).
7. Understand the importance of and demonstrate collaborative engagement with diverse communities, sectors and/or constituencies (e.g. researchers, practitioners, community organizations) to achieve Chemical Engineering goals.
8. Describe basic theories, concepts, models and methods and their limitations from a range of core and related disciplines that inform Chemical Engineering research and practice
9. Describe legal bases and interrelationships between the Chemical Engineering and other systems at national level (e.g. health care, environmental protection)
10. Differentiate among and utilize key planning constructs (e.g. values, vision, mission, goals, objectives and outcomes) in planning, implementing and evaluating Chemical Engineering programs.
11. Apply research methods to understanding Chemical Engineering issues; determine the priorities for R & D areas; ability to transform the complex Chemical Engineering problem into an answerable research question

Additional common competences will be formulated after specification of the competence areas.

The key competence areas, on which the **STRENGTH Green Competences** are concentrated are the following:

1. Agricultural Engineering;
2. Biotechnology;
3. Food Science & Technology;
4. Pharmaceutical Technology;
5. Environmental Health and Safety.