



Co-funded by
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BIO-Save

Competence Catalogue

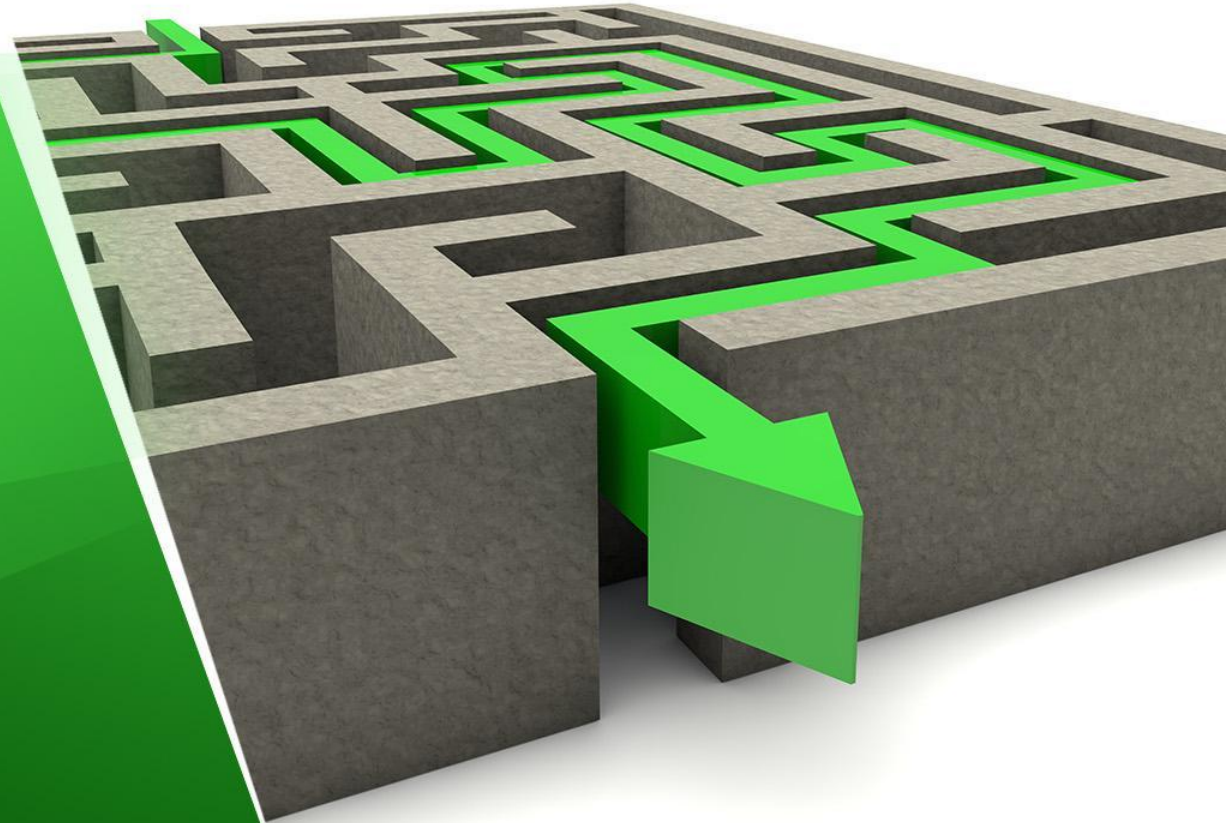
Part II

career profiles

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*BIO-Save
career profiles
in
Genomics /
Genetic
Counselling*





Qualification Dossier of

-
 - Owner's Name



General information about the owner of the dossier

- Full name:

.....

- Area of specialization:

-

.....

- **(Selected from BIO-Save project qualification list)**



Contact information

mail address

telephone

email address.....



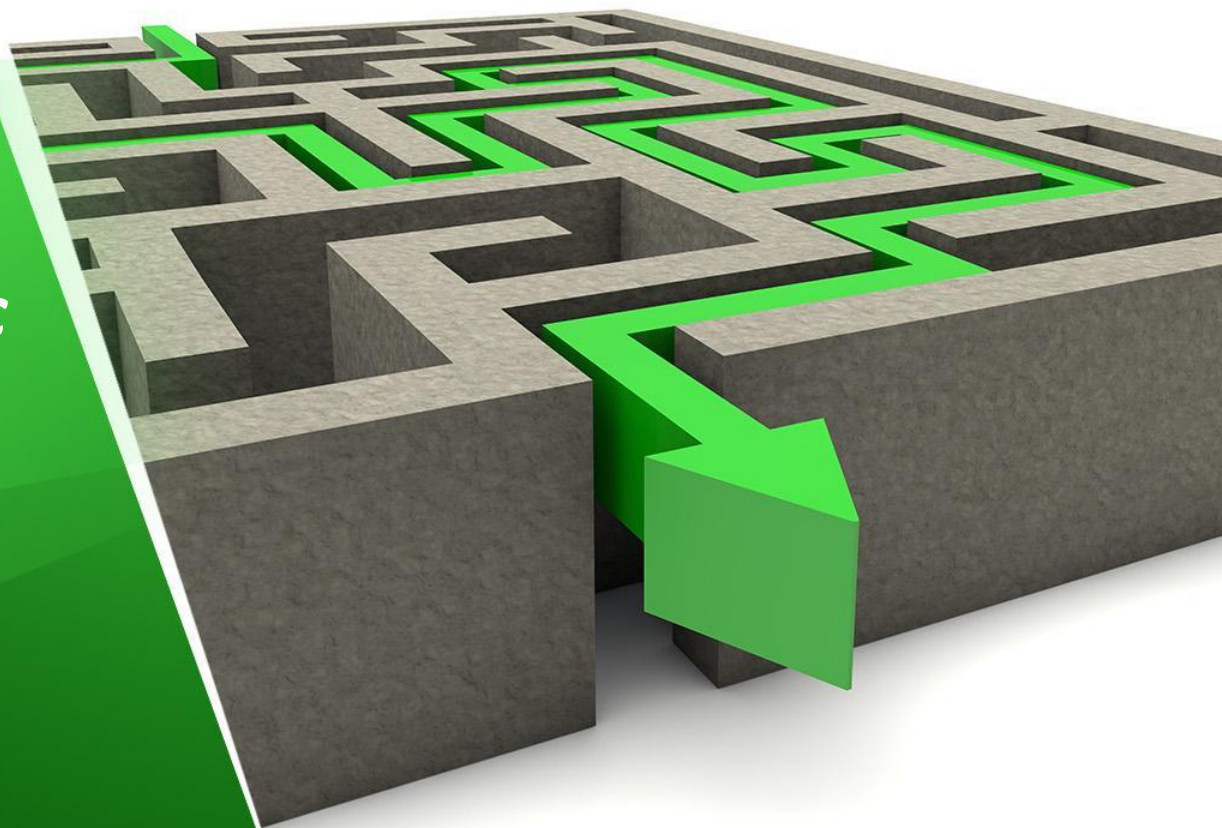
Professional CV EUROPASS

http://europass.cedefop.europa.eu/sites/default/files/cvtemplate_6.doc

Follow the instructions provided in the form above to provide information about your education completed, and work experience

BIO-Save
career profiles *in*
Genomics / Genetic
Counselling

For level EQF 6



BIO-Save Professional profiles

Genomics / Genetic Counselling

EQF 6

Knowledge

Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles

Skills

Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study

Responsibility and autonomy

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



EQF 6

B.Sc. Degree professional

Professional Profile for:	Geneticists - ESCO 2131.4.8
General abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Understand concepts and techniques of gene expression<input type="checkbox"/> Practice analyses that use exploration of the genome at the DNA, RNA, protein and even epigenome levels<input type="checkbox"/> Apply effectively lab experiments biological setting, RNA/DNA isolation, libraries preparation, sequencing<input type="checkbox"/> Performs transcriptomic analysis<input type="checkbox"/> Follow accurately genetic procedures and keep records<input type="checkbox"/> Anticipate new knowledge<input type="checkbox"/> Possess self-motivation, determination and dedication<input type="checkbox"/> Implement innovation activities without being supervised
Green abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Monitor laboratory repetition to identity bio-safe requirements.<input type="checkbox"/> Implements green laboratory practices like waste reduction and recycling<input type="checkbox"/> Manages energy and water conservation in every day working methods<input type="checkbox"/> Introduces technics for climate change mitigation
Digital abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Utilize efficiently Office suit software<input type="checkbox"/> Operate with Internet browser software<input type="checkbox"/> Uses frequently electronic mail software<input type="checkbox"/> Practices desktop communication software

EQF 6

Project manager

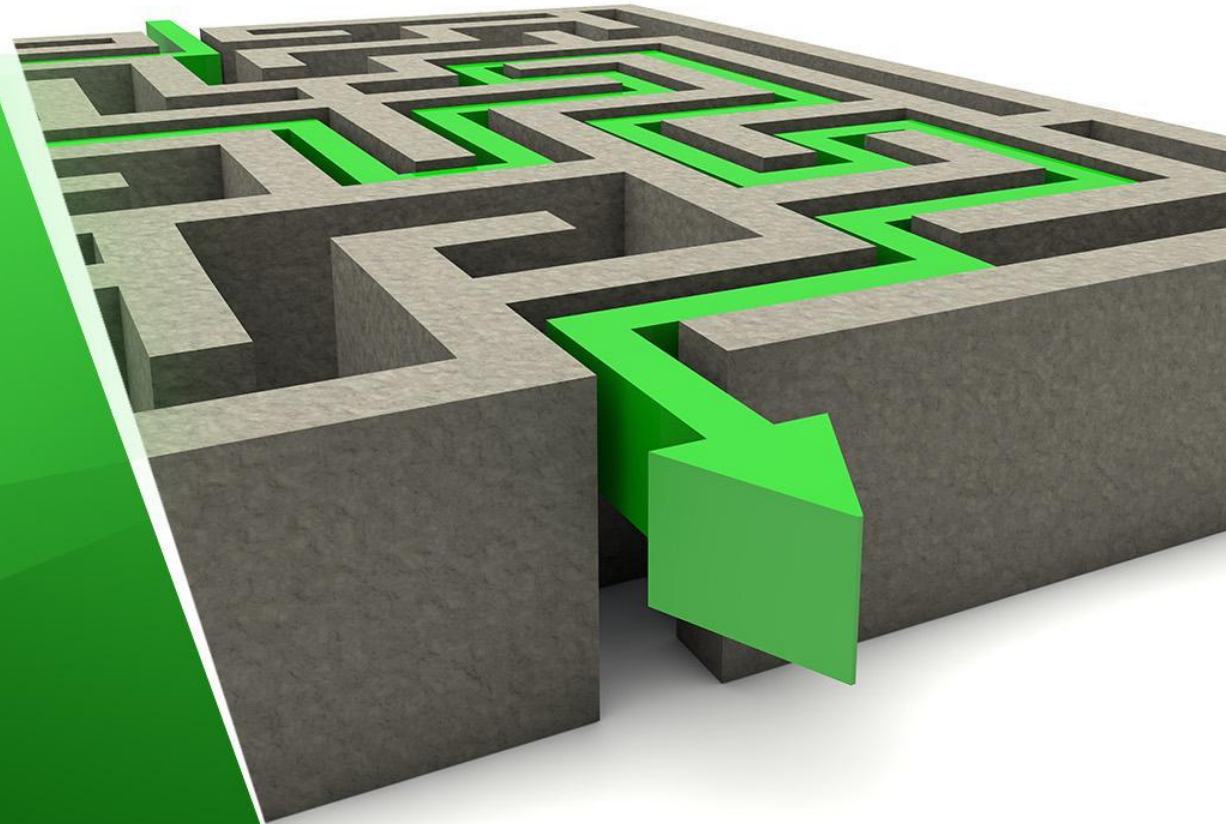
<i>Professional Profile for:</i>	ICT documentation managers - ESCO 1330.4
General abilities (knowledge & skills)	<ul style="list-style-type: none"> <input type="checkbox"/> Performs PCR, gel electrophoresis <input type="checkbox"/> Possess animal tissue culture experience <input type="checkbox"/> Plan, direct and coordinate production in genetic operations <input type="checkbox"/> Monitor production outputs, costs, quality and quantity <input type="checkbox"/> Develop and implement technics to improve production efficiency <input type="checkbox"/> Knowledge of safety standards and maintenance of specialized equipment. <input type="checkbox"/> Explain role of various regulatory agencies, and demonstrate understanding of compliance requirements related to approvals required by those agencies <input type="checkbox"/> Self-motivated, proactive, works well under pressure and deadlines, detail oriented
Green abilities (knowledge & skills)	<ul style="list-style-type: none"> <input type="checkbox"/> Support skilling and reskilling of workers to promote green employment <input type="checkbox"/> Anticipate changes in workplaces of the future <input type="checkbox"/> Introduce green technologies in practice to increase environmental protection <input type="checkbox"/> Implement the national and international policies and regulations for sustainable development
Digital abilities (knowledge & skills)	<ul style="list-style-type: none"> <input type="checkbox"/> Utilize efficiently production planning software <input type="checkbox"/> Introduces specific professional area software <input type="checkbox"/> Operate calendar and scheduling software <input type="checkbox"/> Uses staff scheduling software

Autonomy and responsibility

- ✓ Recognize, classify recall, and put in order
- ✓ Reflecting on the impacts of science and provide examples
- ✓ Determine, implement models
- ✓ Excellent observational skills specific skills
- ✓ Asking questions based on observation
- ✓ Accuracy in following procedures and keeping records
- ✓ Work with data
- ✓ Ability to manage time and prioritize tasks
- ✓ Interpersonal skills with ability to work well with others
- ✓ Ability to continually update knowledge in the specialist area

BIO-Save
career profiles *in*
Genomics / Genetic
Counselling

For level EQF 7



BIO-Save Professional profiles

Genomics / Genetic Counselling

EQF 7

Knowledge

Highly specialized 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

Skills

Specialized problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields

Responsibility and autonomy

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



EQF 7

M.Sc. Degree professional

<i>Professional Profile for:</i>	Biomedical scientist advanced - ESCO 2131.8
General abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Understand genome structure, function, annotation, and sequence analysis<input type="checkbox"/> Explain the theory and practice of basic and advanced molecular genomic technologies<input type="checkbox"/> Apply bioinformatics, statistics and data interpretation in genomic analysis<input type="checkbox"/> Use technology for information gathering and be able to assess scientific literature and genetic test results<input type="checkbox"/> Design an experimental setup to address genomics issues<input type="checkbox"/> Demonstrate critical thinking, reflection, and problem solving in relation to current issues in genomics<input type="checkbox"/> Critically analyze and apply ethical considerations to complex issues and dilemmas in genomics research<input type="checkbox"/> Provide information about how genetic conditions might affect individuals
Green abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Understand next generation genomics as an important technology-related sustainability issue for HEIs<input type="checkbox"/> Apply greening-with-ICT approaches of learning: machine learning, data analytics and cloud computing, and virtual image processing for virtual and experiential environments
Digital abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Use information retrieval or search software<input type="checkbox"/> Utilize online resources for research genomics<input type="checkbox"/> Use of bioinformatics software<input type="checkbox"/> Operate with presentation software<input type="checkbox"/> Practice spreadsheet and word processing software

Environmental Health & Safety Professional

<i>Professional Profile for:</i>	Environmental scientist - ESCO 2133.7
General abilities (knowledge & skills)	<ul style="list-style-type: none"> <input type="checkbox"/> Use of technology, tools and information required for the planning, development and interpretation of high-throughput genomic studies. <input type="checkbox"/> Possess DNA sequencing and computational capabilities to address environmental issues <input type="checkbox"/> Apply approaches to study the effects of environmental stressors on genome function and expression. <input type="checkbox"/> Distinguish and interpret at molecular level the adaptation events that living organisms trigger to obtain homeostasis <input type="checkbox"/> Use genomics in the evaluation of the environment quality <input type="checkbox"/> Apply genomics approaches in pollution biomonitoring programs
Green abilities (knowledge & skills)	<ul style="list-style-type: none"> <input type="checkbox"/> Understand next generation genomics as an important technology-related sustainability issue for HEIs <input type="checkbox"/> Apply greening-with-ICT approaches of learning: machine learning, data analytics and cloud computing, and virtual image processing for virtual and experiential environments <input type="checkbox"/> Research environmental impact of genomics activities
Digital abilities (knowledge & skills)	<ul style="list-style-type: none"> <input type="checkbox"/> Use information retrieval or search software <input type="checkbox"/> Use of bioinformatics software <input type="checkbox"/> Utilize online resources for research genomics <input type="checkbox"/> Possess computational skills required to analyze environmental DNA sequence data

Biotech SME Manager

<i>Professional Profile for:</i>	ICT information and knowledge manager - ESCO 1330.1.1
General abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Demonstrate knowledge of principles of human, medical, and public health genetics and genomics and their related sciences.<input type="checkbox"/> Understand genetic principles and comprehend how they affect pathophysiology, recurrence risk, management and prevention, differential diagnosis, genetic testing and test report interpretation.<input type="checkbox"/> Provide counseling to patient and family members by providing information, education, or reassurance.<input type="checkbox"/> Write detailed consultation reports to provide information on complex genetic concepts to patients or referring physicians.<input type="checkbox"/> Identify and discuss the potential benefits, risks, limitations, and costs of genetic/genomic testing.<input type="checkbox"/> Develop and execute a case management plans that include case preparation and follow-up.
Green abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Understand the role of green skills in SMEs.<input type="checkbox"/> Design sustainability strategies and action plans.<input type="checkbox"/> Demonstrate an understanding of psychosocial, ethical, and legal issues related to genomics / genetic counseling.<input type="checkbox"/> Identify and integrate relevant information about environmental and lifestyle factors into the risk assessment.<input type="checkbox"/> Apply principles of environmental management.
Digital abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Use of analytical or scientific software.<input type="checkbox"/> Use of data base user interface and query software.<input type="checkbox"/> Operate with medical software — Benetech PRA; Prognosis Innovation Healthcare ChartAccess; SynDiag;

In-company Training Professional

Vocational Education Teachers - ESCO 2320

Professional Profile for:

General abilities (knowledge & skills)

- Assess and determine the educational goals and learning objectives based on the needs and characteristics of the audience.
- Utilize a range of tools to enhance the learning process such as handouts, visual aids, and other educational technologies.
- Plan and execute a thorough search and review of the literature.
- Summarize information derived from a literature review to utilize in genomics / genetic counseling trainings.
- Communicate both orally and in writing using a style and method that is clear and definite.
- Assess one's own teaching style and use feedback and other outcome data to refine future educational activities.

Green abilities (knowledge & skills)

- Teach new knowledge in relation to the sustainability values, principles and objectives of genomics / genetic counseling.
- Understand the concept for Green Training and Development.
- Help to introduce and manage the measurable standards for social and environmental impact of the training process.

Digital abilities (knowledge & skills)

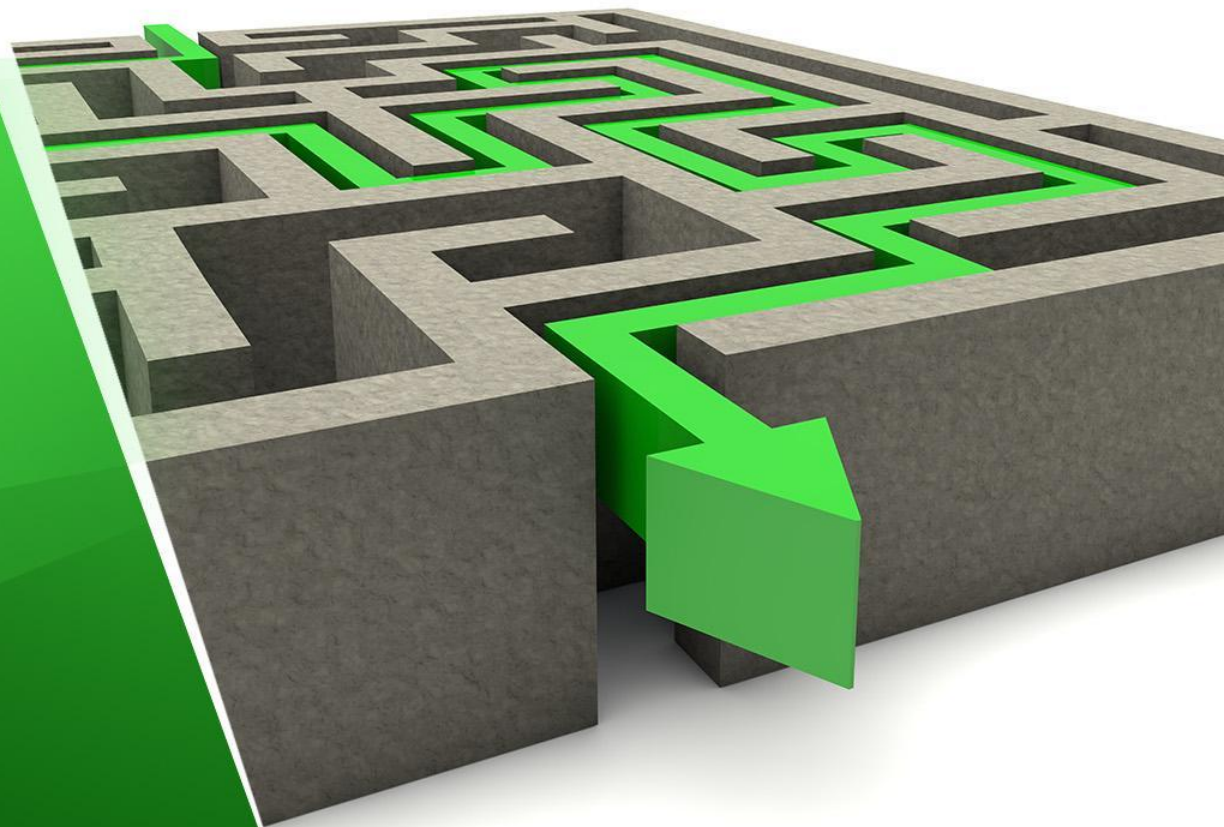
- Use of computer-based training software — Blackboard Learn; Course management system software; Learning management system LMS; etc.
- Use of video conferencing and presentation software.
- Operating with spreadsheet software.

Autonomy and responsibility

- ✓ Compare/contrast, relate, and use models
- ✓ Compute, retrieve, measure
- ✓ Processing evaluating, interpret information, and explain
- ✓ Reasoning and argument/ Inquiring and Designing
- ✓ Generating evidence
- ✓ Intellectual energy and independent thinking to address questions through research
- ✓ Thorough attention to details
- ✓ Critical-thinking and analytical skills
- ✓ Problem-solving skills
- ✓ Skills and experience to work independently and manage own workload

BIO-Save
career profiles *in*
Genomics / Genetic
Counselling

For level EQF 8



BIO-Save Professional profiles

Genomics / Genetic Counselling

EQF 8

Knowledge

Knowledge at the most advanced frontier of a field of work or study and at the interface between

Skills

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

Responsibility and autonomy

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



Ph.D. Degree professional

<i>Professional Profile for:</i>	Bioinformatics scientist - ESCO 2131.3
General abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Expertise on recombinant DNA cloning techniques, primer design and, nucleic acid extraction and purification<input type="checkbox"/> Experience with cell culture, DNA/RNA transfection, bacterial culture<input type="checkbox"/> Perform DNA/RNA transfections and/or viral transductions<input type="checkbox"/> Quantify genome editing events using various molecular assays<input type="checkbox"/> Improve the state of the art in CRISPR/Cas9 guided precision genome editing<input type="checkbox"/> Maintain a thorough and detailed electronic lab notebook<input type="checkbox"/> Possess NGS library prep, immunostaining, and flow cytometry experience<input type="checkbox"/> Demonstrated aptitude to perform experimental protocols and procedures, including detailed data collection, and analysis, and operation and maintenance of specialized equipment.
Green abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Knowledge of green plant genomes.<input type="checkbox"/> Implements programs for genome sequencing programs and in setting quality standards.<input type="checkbox"/> Connect knowledge into environmental protection policy, programme design and implementation<input type="checkbox"/> Demonstrate understanding of quality assurance, quality control, and regulatory practices for environmental protection
Digital abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Analyses biological / health data<input type="checkbox"/> Performs bioinformatics analysis and reads mapping, counts, and statistics.<input type="checkbox"/> Perform genomics analysis<input type="checkbox"/> Use of signal / noise ratio filtering and regulation

Academic professional

<i>Professional Profile for:</i>	University and Higher Education Teachers - ESCO 2310
General abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Expertise in synthetic biology, bioengineering, genetics or expertise in genetics and genomic manipulation<input type="checkbox"/> Solid understanding of current precision editing techniques<input type="checkbox"/> Design, innovate and iterate DNA assembly, integration, editing and screening<input type="checkbox"/> High throughput screening experience and on automation methods<input type="checkbox"/> Current experience with next-generation precision editing tools<input type="checkbox"/> Coordinate surveys and consultations on genetic issues<input type="checkbox"/> Plan and direct educational programs in genetic sector<input type="checkbox"/> Implements a variety of teaching techniques, as work simulation, group discussions, and video-lectures<input type="checkbox"/> Contributes to the development of European and national policy in the field of genetics
Green abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Promotes the conservation, protection, and regeneration of biodiversity;<input type="checkbox"/> Encourages green management plans<input type="checkbox"/> Implement programs to complete reference-quality genomes for all green plants<input type="checkbox"/> Spread good practices and success stories gathered across European programmes
Digital abilities (knowledge & skills)	<ul style="list-style-type: none"><input type="checkbox"/> Execute image and sequencing data analysis<input type="checkbox"/> Ability in networks building<input type="checkbox"/> Implements in every day practice computer based training soft wares and presentation software<input type="checkbox"/> Use course management system software and video conferencing<input type="checkbox"/> Promotes contemporary learning management system (LMS)

Autonomy and responsibility



- ✓ Analyze, synthesize, formulate hypothesis
- ✓ Predict, design investigation, evaluate,
- ✓ Draw conclusions, generalize, justify
- ✓ Making an argument from evidence
- ✓ Answering research questions and investigating patterns
- ✓ Explain phenomena scientifically
- ✓ Evaluate and design scientific enquiry
- ✓ Creativity and initiative to develop new ideas
- ✓ Strong written and verbal communication skills
- ✓ Seeking to foster fruitful collaborations

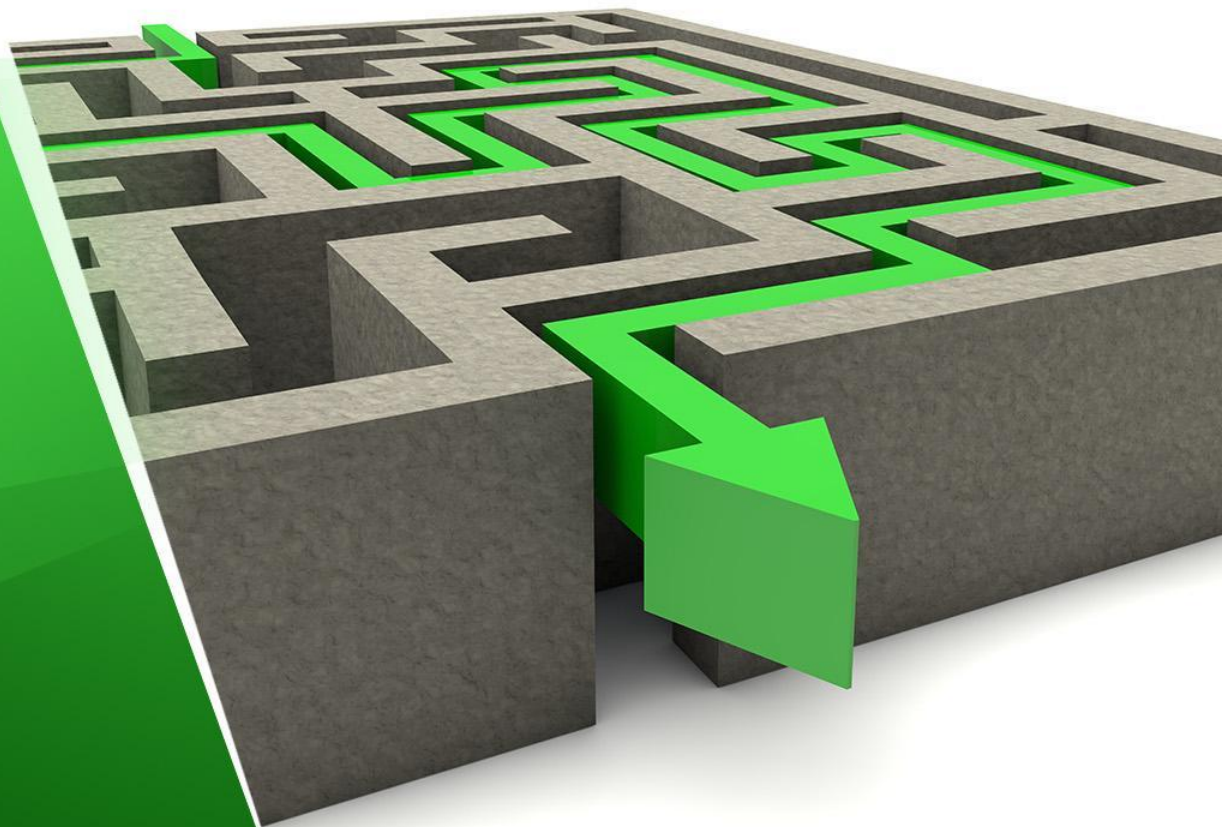
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Competence Catalogue

Part III

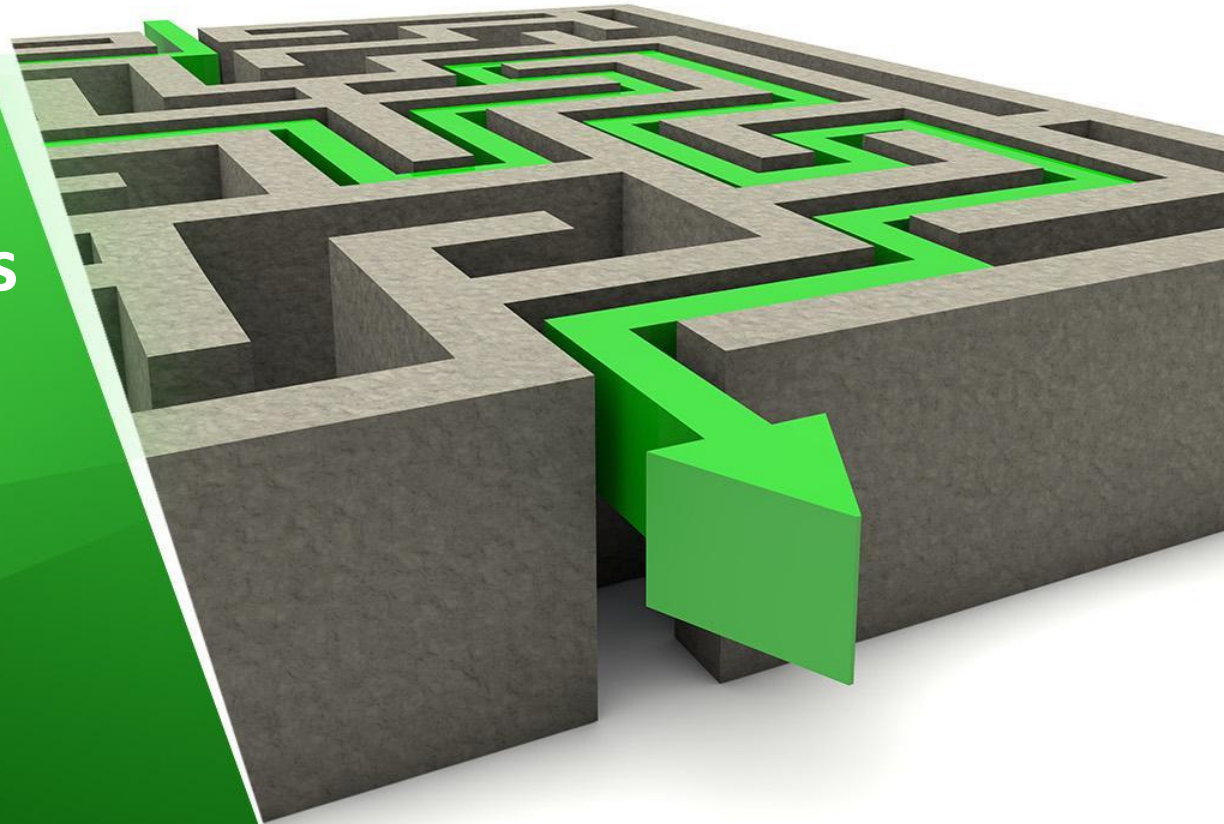
Competence records



*Genomics /
Genetic
Counselling*



**Knowledge & skills
gained through
BIO-Save learning
resources**



Conservation and exchange of plant genetic resources

Upon completion of this course the graduate will be able to:

- To present the objectives of plant genetic resources conservation for maintenance of intra-specific genetic diversity to be exploited nowadays and in future;
- To explain the principles and procedures of in-situ and ex-situ conservation of active and base collections;
- To disclose the management approaches of genetic resources conservation centers;
- To discuss the procedures/regulations of plant introduction and exchange;
- To support the educational concept and content with ppts, videos, and project work materials.

Adaptation to abiotic stresses and evaluation of adaptation measures

Upon completion of this course the graduate will be able to:

- To provide an overview and describe the abiotic factors and abiotic stress tolerance, tools and associated data commonly used in the vulnerability and adaptation evaluation;
- To provide some background information on the vulnerability and to quantify the improved adaptation to abiotic stress of the living cells;
- To make a causal link between adaptation and evolution;
- To support the educational concept and content with ppt, videos and project work materials.

Enhancing adaptive capacity of crops

Upon completion of this course the graduate will be able to:

- To present how climate change factors interact with each other and with biotic pressures to alter evolutionary processes;
- To outline the breeding progress in major crops and highlight the impact of long-term, conventional breeding on climate adaptation and yield stability under abiotic stress constraints;
- To describe how mating system variation influences population persistence under rapid environmental change;
- To discuss how spatial and temporal mismatches between plants and their mutualists and antagonists could affect adaptive responses to climate change.
- To support the educational concept and content with ppt, videos, and project work materials.

**BIO-Save
Individual profile**

Create your Future here



Individual profile

✓ Skills in
.....
(BIO-Save Horizon)

✓ Competence in
.....
(BIO-Save Horizon)

✓ Experience in
.....
(BIO-Save Horizon)

- **Indicate**
the skills and competences
you have reached in the
current training

- **Present**
the Credit Points gained

Individual profile



Individual profile :

✓ *Experience in*

.....

(BIO-Save Horizon)

- *Provide any documents and evidence of experience in BIO-Save Horizon*
- *Provide a chronological list of any paid, volunteer, fieldwork, etc*

Individual profile



Individual profile :

- ✓ *Competence profile certificate (CPC)
(BIO-Save Horizon)*

Present the CPC you have been awarded on the basis of the individual profile(s) you have obtained upon completion of BIO-Save training programme

Digital Competence



- ✓ *Use the grid to assess your digital competence*
- ✓ *Describe your digital knowledge, skills and competence*
- ✓ *Provide Certificates that you have*

DIGCOMP self-assessment grid

<https://www.reactivatejob.eu/multimedia/uploads/documents/DigitalCompetences-en.pdf>

Language Competence



- ✓ *Use the grid to assess your linguistic competence*

Common European Framework of Reference for Languages – Self-assessment grid

[https://www.cedefop.europa.eu/files/europass - european language levels - self assessment grid.pdf](https://www.cedefop.europa.eu/files/europass_-_european_language_levels_-_self_assessment_grid.pdf)

- ✓ *Describe your language knowledge, skills and competence*
- ✓ *Provide Certificates that you have*

Individual profile



Other certificates:

- ✓ *Conferences*
- ✓ *Seminars*
- ✓ *Courses*

Provide: Honors or awards you received

Individual profile



Professional goals statement:

- ✓ *Describe your ideas for the tasks and mission realization and achievement of your goals*

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(max. one page or 500 words)