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| <b>BEM content<br/>(for all partners)</b> | <b>Title/name of the credential</b>                | Structured Query Language (SQL) Fundamentals and Advanced Querying                                                                                                                                                                                                                                                                                                    |               |                    |
|                                           | <b>Function of the micro-credentials / purpose</b> | This microcredential aims to give learners basic to intermediate training on SQL, needed to design, manage, and query relational databases. By the end of this course, learners will acquire the skills necessary to function properly in a database environment and will successfully be prepared for careers in data management, analysis and software development. |               |                    |
|                                           | <b>Possible target groups</b>                      | Individuals of all backgrounds and ages interested in starting their career as data scientists                                                                                                                                                                                                                                                                        |               |                    |
|                                           | <b>Branch/sector of application</b>                | Information Technologies<br>Data Management                                                                                                                                                                                                                                                                                                                           |               |                    |
|                                           | <b>Fields of application / work environment</b>    | Database Administration<br>Data Manipulation and Analysis<br>Business Intelligence                                                                                                                                                                                                                                                                                    |               |                    |
|                                           | <b>Typical work/professional tasks</b>             | Designing and creating relational databases;<br>Execute simple and complex SQL queries to insert, update and delete data, as well as to produce joins, subqueries, and grouping of data;<br>Combine and manipulate data from multiple tables;<br>Generate reports and conduct data analysis;<br>Integrate data from different sources.                                |               |                    |
|                                           |                                                    | <b>Knowledge</b>                                                                                                                                                                                                                                                                                                                                                      | <b>Skills</b> | <b>Competences</b> |

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|            | <p>Learning outcomes<br/>(personal and job related)</p> | <p><b>Knowledge:</b><br/><u>Understanding</u> the core principles of Relational Database Management System (RDBMS) – the architecture, functionality and purpose, including concepts like tables, relationships, and primary/foreign keys.<br/><u>In-depth knowledge</u> of SQL commands, joins, subqueries, data combination techniques, functions for grouping data, calculating aggregates and of advanced SQL functions for more complex data analysis.</p> <p><b>Skills:</b><br/>Ability to:</p> <ul style="list-style-type: none"><li>- <u>Design and structure databases</u>, including defining tables, specifying appropriate data types, and establishing relationships between tables;</li><li>- <u>Write and execute basic SQL queries</u> to retrieve and manipulate data;</li><li>- <u>Conduct more complex SQL operations</u>, such as performing joins, writing subqueries, and combining data from different tables;</li><li>- Use SQL to group data, compute aggregates and perform advanced calculations.</li></ul> <p><i>Learning outcomes should be formulated in commonly accepted way, see the link:<a href="https://eurspace.eu/ecvet/pedagogicalkit/framework-for-defining-learning-outcomes-knowledge-skills-competence/">https://eurspace.eu/ecvet/pedagogicalkit/framework-for-defining-learning-outcomes-knowledge-skills-competence/</a></i><br/><i>Can be used the formulation format of National Qualification Framework descriptors, adjusting and applying that format for relevant job.</i></p> |
| Validation | criteria                                                | procedures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

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|                                         |                                                 | <p>Validation will be conducted through a practical assignment.</p> <p><b>Procedure:</b><br/>Students will be given a task to design and create a functioning relational database, where they will also define relationships and carry out basic and complex database functions, such as: insertion, updating, deletion of records, joins, subqueries, grouping and data manipulation.</p> <p><b>Criteria:</b><br/>Fully operational database with correct table structures, relationships, and data manipulation using SQL.</p> |
|                                         | Recognised/accepted (documented by MoU)         | <p style="text-align: right;">Name of companies</p> <p>Target Group</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                         | Provider(s)                                     | Private EduTech companies, Vocational-Educational schools                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Additional information (if needed)      | Entry level / prerequisites                     | <p>No pre-knowledge needed</p> <p>20 hours (10 theoretical + 10 practical)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                         | Possible duration (recommendation)              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Specific content (national) (if needed) | Position in the chain of educational programmes | 1st out of 2 micro credentials on SQL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                         | Reference to NQF                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                         | Credits                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |