

# Training methodology and a set of e-Business strategies for construction SMEs

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PEACOC

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**Cooperation for innovation and the**  
**exchange of good practices within the**  
**Strategic Partnerships for vocational**  
**education and training.**

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## **1 ECVET PRINCIPLE**

### **1.1 European credit system for vocational education and training (ECVET)**

The European Union (EU) has several common tools to help individuals transfer, recognise and accumulate their assessed learning outcomes, gain a qualification or participate in lifelong learning. The European Credit System for Vocational Education and Training (ECVET) is one of these tools; it uses flexible and individualised learning pathways, including transnational mobility.

FORMULATION OF LEARNING OUTCOMES FOR PEACOC "e- Business Manager": A "manager" is a person who, according to national legislation and requirements, is entitled to manage a construction company. The learning outcome is linked to the following qualifications which relate to managerial construction qualifications in 6 project countries (Table 2).

Table 1 Learning outcomes in all 6 PP countries occupations based on ISCO CLASSIFATION, Source <https://ec.europa.eu/esco/portal/occupation> – manager no.1 -1323, 216 Architects, Planners, Surveyors and Designers, 2161 Building Architects

2162 Landscape Architects, 2164 Town and Traffic Planners  
2165 Cartographers and Surveyors)

	EQF4	EQF5	EQF6	EQF7
SLOVENIA	NQF4-5 stonemason, hydrotechnician, bricklayer, floor layer, carpenter, road inspector, painter, asphalt layer, floor layer, iron worker, caver - ceramic floor layer, tinsmith - roofer, water infrastructure manager, contractor, builder, heavy equipment operator. 5 construction technician construction foreman, water, protection supervisor, road facilities inspector, different masters	NQF6 Construction engineer	NQF7 1st CYCLE STUDY PROGRAMME S: civil engineering (BA), construction management (BA), water science and environ. engineering (BA), geodesy and geoinformati on (BA), TEchnical real estate management (BA)	NQF8-10 2ndCYCLE STUDY PROGRAMMES: civil engineering (MA), buildings (MA), water science and environ. engineering (MA), geodesy and geoinformation (MA), spatial planning (MA), 3rdCYCLE STUDY PROGRAMMES: built environment (PhD), environmental protection (PhD)
UK	Construction Contracting Operations: Estimating  Construction Contracting Operations: General  Constructing Contracting Operations: Site Technical Support  Construction Contracting Operations: Surveying	Construction Site Supervision: Residential Development  Construction Site Supervision (Construction): Highways Maintenance and Repair	SVQ Built Environment Design Management at SCQF level 9  Construction Contracting Operations Management : Estimating  Construction Contracting Operations Management : General	SVQ 5 - Construction Senior Management

	Construction Supervision: Building and Engineering	Site Civil	Construction Contracting Operations Management : Planning	Construction Contracting Operations Management : Quantity Surveying
PORTUGAL	<b>NQF4</b>	<b>NQF5</b>	<b>NQF6</b>	<b>NQF7</b>
	<ul style="list-style-type: none"> <li>- Topography Technician;</li> <li>- Construction Technician/Conductor;</li> <li>- Measurement and Budget Technician;</li> <li>- Civil Construction and Public Works Testing Technician;</li> <li>- Photovoltaic Solar Systems Installer Technician;</li> </ul>	<ul style="list-style-type: none"> <li>- Higher Technician in Civil Construction;</li> <li>- Technician Specialist in Energy Rehabilitation and Infrastructure Conservation-Buildings;</li> <li>- Technician/Specialist in Energy Management and Control;</li> <li>- Technician Specialist in Quality, Environment and Safety Management;</li> <li>- Technician/a Specialist in Construction Conduct;</li> <li>- Production Team Manager/Supervisor;</li> <li>- Renewable Energy Technician;</li> </ul>	<ul style="list-style-type: none"> <li>- Civil Engineering;</li> <li>- Environmental Engineering;</li> <li>- Mechanical Engineering;</li> </ul>	<ul style="list-style-type: none"> <li>MsArc in Architecture;</li> <li>MsC in Civil Engineering with specialization in: <ul style="list-style-type: none"> <li>- Construction;</li> <li>- Structures;</li> <li>- Geotechnics;</li> <li>- Hydraulic, water resources and Environment;</li> <li>- Urbanism, Transport and systems;</li> <li>- Management, Maintenance and Rehabilitation ;</li> <li>- Adaptation to Climate Change.</li> </ul> </li> <li>MsC in Environmental Engineering with specialization in: Territory and Sustainable Cities</li> <li>MsC in Mechanical Engineering</li> </ul>
				<b>NQF8</b>
				PhD in Civil Engineering;

				PhD in Architecture;  PhD in Environmental Engineering
SPAIN	<p><b>NQF1- Vocational Training Advanced Technician</b></p> <p>Construction Technician:</p> <ul style="list-style-type: none"> <li>- Certificate of Professionalism in Formwork</li> <li>- Construction Technician</li> </ul> <p>Construction manager:</p> <ul style="list-style-type: none"> <li>- Higher Technician in Organisation and Control of Construction Work</li> <li>- Higher Technician in Building Projects</li> </ul>	<p><b>NQF2- Bachelor's Degree</b></p> <p>(BA) Building Engineering</p> <p>(BA) Building Science and Technology</p> <p>(BA) Technical Architecture.</p> <p>(BA) Public Works Engineering gives access to the profession of Technical Engineer in Public Works in one of its specialities: Civil Construction, Hydrology, and Urban Transport and Services.</p> <p>(BA) Engineering in Geodesy and Cartography.</p> <p>(BA) Technical Engineering such as Forestry, Industrial, Topography, Mining, Public Works, Aeronautics, Naval and Telecommunications</p>	<p><b>NQF3 - Master's Degree, BA of at least 300 ECTS credits including at least 60 ECTS credit at Master's level.</b></p> <p>- Architecture : (BA) Architecture + Master's degree to practise the regulated profession of Architect</p> <p>- Civil Engineering : BA in Civil Engineering or e in Public Works Engineering + Master's in Civil Engineering.</p> <p>- Industrial Engineering: BA in Industrial Technologies Engineering, Industrial Electronics and Automation, Electrical, Mechanical, Chemical,... + Master's in Industrial Engineering.</p> <p>- Aeronautical Engineering: BA in Aeronautical Engineering + Master's in Aeronautical Engineering</p>	<p><b>NQF4 - Doctoral degree</b></p> <p>PhD in Civil Engineering;</p> <p>PhD in Architecture;</p> <p>PhD in Industrial Engineering</p> <p>PhD in Architecture, Building, Urban and Landscape Planning</p>

			- Agricultural engineering: BA in Agricultural Engineering + Master's in Agricultural Engineering,	
GREECE	<p><b>NQF 4</b></p> <p>Designers of Infrastructure Works, Cooling and Air-Conditioning Facilities, Building Works</p>	<p><b>NQF 5</b></p> <p>Historic and Traditional Buildings Repair, gas fuels technicians, HVAC installations technician, structural works technician,</p>	<p><b>NQF 6</b></p> <p>(BA) Civil Engineering with specialization in Structural E., Infrastructure E., Geoinformatics E., Surveying and Geomatics, Building Morphology and Restoration E.,</p>	<p><b>NQF 7</b></p> <p>(MA) Applied computational structural e., Energy Building Design, Politics and Applied Methods for the Protection of the Environment, Seismic and Energy Retrofit in Structure and Sustainable Development, Upgrading Buildings, Renewable Energy Systems, Management in Construction</p> <p><b>NQF8</b> Doctorate in Geography</p>
THE NETHERLANDS	<p>NLQF4 – 4+ MBO 4, HAVO, VWO (4+)</p> <p>Vocational Upper secondary education</p> <p>Pre-vocational secondary education (VMBO) to MBO</p>	<p>NLQF5 Associate degree</p> <p>Management Civil Engineering</p>	<p>NLQF6 Bachelor</p> <p>Construction Management</p> <p>Civil Engineering</p> <p>Electrical Engineering</p> <p>Architecture, Urbanism and Building Sciences</p> <p>BBA with Specialisation</p>	<p>NLQF7 Master</p> <p>MSc in Architecture, Building and Planning</p> <p>MSc in Construction Management and Engineering</p> <p>Spatial Engineering</p> <p><b>NLQF8</b> <b>PhD-Doctorate</b></p>

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in Real Estate  
Management

BBA  
Specialisation  
in  
Entrepreneurs  
hip & Digital  
Marketing

Built  
Environment

Civil and  
Environmental  
Engineering