



*Alliance for Batteries Technology, Training and Skills*

2019-2023

## **Processes Engineer**



Co-funded by the  
Erasmus+ Programme  
of the European Union



## Processes Engineer in Battery Industry

A battery process engineer is responsible for designing, developing, and optimizing the manufacturing processes for batteries. They work with a team of engineers and scientists to create efficient and cost-effective manufacturing methods for electric vehicles, consumer electronics, and other applications. They are responsible for the development, implementation and optimization of the manufacturing process for battery cells, packs, and systems.

### ESCO Occupations - [ESCO - Occupations - European Commission \(europa.eu\)](http://europa.eu)

ID	NAME	Concept URI
2141.9	process engineer	<a href="http://data.europa.eu/esco/occupation/b5eaf231-77ad-4a86-8e54-15cc4398aad2">http://data.europa.eu/esco/occupation/b5eaf231-77ad-4a86-8e54-15cc4398aad2</a>

### Context

<b>Minimum EQF</b>	6/7
<b>Value Chain</b>	Raw Materials and Processing Cell and Components Manufacturing Modules and Packs Battery Integration Operation Second Life Recycling
<b>Departments</b>	Production and Maintenance Logistics Quality Purchasing HR Finance Sales RnD Construction Intellectual/Legal Recycling Environment

	IT/Digitalisation
<b>Specialisations</b>	<p>Other job roles that are more specialised but based on this</p> <p>Cell Assembly Process Engineer</p> <p>Process &amp; Test Engineer - Battery Technology</p> <p>Battery Cell Conditioning Process Development Expert</p> <p>Process Engineer</p> <p>Process Engineer, Battery Discharge - Battery Recycling</p> <p>Process Engineer, Battery Dismantling</p> <p>Process Quality Engineer</p> <p>Quality Process Engineer</p>

### Cross-sectoral Specific Competence

Name	Type (S/K)	Description/Context	Level	ESCO
Manufacturing Engineering	K	<ul style="list-style-type: none"> <li>- Conceptualize and develop new manufacturing methods and equipment to meet the needs of both internal and external customers.</li> <li>- Design and implement testing methods, establishing standards, and confirming manufacturing methods</li> <li>- Provide guidance and instruction to assembly and quality staff for all R&amp;D cell assembly activities</li> <li>- Keep equipment operational by coordinating maintenance and repair services</li> <li>- Research, commission, and validate new equipment or modify existing equipment to prototype new battery cell formats</li> </ul>	Expert	manufacturing and processing
Process Improvement	S	<ul style="list-style-type: none"> <li>- Sustain and improve process yield</li> <li>- Lead the improvement projects</li> <li>- Role entails driving large, innovative and challenging improvement projects</li> <li>- Use data and reports to develop and implement continuous improvement plan for capability, cost, and efficiency of existing techniques and equipment.</li> <li>- Analysis of errors that occur and development of suggestions for fault rectification and optimization measures</li> </ul>	Expert	identify process improvement
Product Testing		<ul style="list-style-type: none"> <li>- Design and implement testing methods, establishing standards, and confirming manufacturing methods</li> <li>- test set-up and test execution</li> <li>- Localization and establishing contacts with potential</li> </ul>	Expert	perform product testing

		<ul style="list-style-type: none"> <li>service providers for testing battery cells</li> <li>- Assist in adjusting / updating machine settings and parameters for various product lines</li> <li>- testing of ongoing projects</li> <li>- support battery production activities of pilot and R&amp;D cell assembly lines by supervising, maintaining, and improving manufacturing equipment and methods</li> </ul>		
Analysis Methods	K	<ul style="list-style-type: none"> <li>- Create and maintain PFMEAs and control plans</li> <li>- Prepare Failure Mode Effect Analysis (FMEA)</li> <li>- Analysis of process and testing of ongoing projects</li> <li>- Analysis of errors that occur and development of suggestions for fault rectification and optimization measures</li> </ul>	Expert	analysis methods

### Sector Specific Competence

Name	Type (S/K)	Description/Context	Level	ESCO
		-		

### Soft Competence

Name	Type (S/K)	Description/Context	Level	ESCO
Teamwork	K	<ul style="list-style-type: none"> <li>- work in team within and across different departments</li> <li>- provide engineering support to other teams</li> </ul>	Practitioner	Teamwork
Adaptation	S	- adapt to the work environment, issues, and changes in organisation and on the market	Practitioner	Adapt to change
Communication	K	<ul style="list-style-type: none"> <li>- Work and communicate with external stakeholders</li> <li>- Communicate with team members and across different department teams</li> </ul>	Practitioner	Communication

### General Transversal Competence

Name	Type (S/K)	Description/Context	Level	ESCO
Documentation	S	<ul style="list-style-type: none"> <li>- Use data and reports to develop and implement continuous improvement plan for capability, cost, and efficiency of existing techniques and equipment</li> <li>- facilitate both quality trainings and new product training with necessary training materials</li> </ul>	Practitioner	use technical documentation; observe documents

Customers/Stakeholders	S	- Attend non-conformances meetings with customer and translate requirements into systems and procedures for LeM	communicate with customers
------------------------	---	---	----------------------------

### Academic Competence (can be taken from University programme)

Name	Type (S/K)	Description/Context	Level	ESCO
Electrochemistry	K	- Acquisition and project processing in the electrochemical and mechanical process technology of battery cell manufacturing	Expert	electrochemistry
Mechanical Engineering	K	- Assist in adjusting / updating machine settings and parameters for various product lines - Acquisition and project processing in the electrochemical and mechanical process technology of battery cell manufacturing - Analysis of errors that occur and development of suggestions for fault rectification and optimization measures - focused on Mechanical & Electrical Design - Conceptualize and develop new manufacturing methods and equipment	Expert	mechanical engineering
Electrical Engineering	K	- Development of new ideas on measurement technology and methodology for electrical, geometric and thermal test methods - establishing standards, and confirming manufacturing methods	Expert	electrical engineering

