

Maintenance Technician

The Maintenance Technician plays a vital role in the automotive industry by ensuring the continuous and safe operation of mechanical, electrical, and electronic systems across production and support facilities. They perform preventive maintenance to minimise breakdowns, troubleshoot and repair faults, and optimise equipment performance to meet operational targets. Their activities include conducting inspections, interpreting technical documentation, replacing or repairing components, calibrating systems, and documenting interventions in maintenance management systems.

Key responsibilities involve applying mechanical, electrical, and diagnostic knowledge to keep production lines, auxiliary systems, and specialised automotive equipment in optimal condition. They collaborate closely with engineering, production, and quality teams to address operational issues, implement improvements, and maintain compliance with safety and environmental regulations. Essential competences cover digital skills (e.g. maintenance ICT systems, diagnostics software), green competences (e.g. EV systems, emerging drivetrain technologies), sector-specific skills (e.g. mechanical/electrical systems, safety compliance, diagnostic tools), and soft/transversal abilities (e.g. problem-solving, adaptability, teamwork).

Their role directly impacts production efficiency, product quality, operational safety, and the lifespan of equipment within the automotive value chain.

ESCO Mapping

<https://esco.ec.europa.eu/select-language?destination=/node/1>

ID	NAME	Concept URI
2141.8	Maintenance and repair engineer	http://data.europa.eu/esco/occupation/615920c5-4f63-4eb3-8b60-afaaed3ab1ff

Context

EQF Level	4
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Departments	Production and Maintenance
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Green Competences

ID	Name	Type	Description	Level	ESCO
C00 6	Electric vehicle systems	Knowledge	Describe the key components, operation, and maintenance requirements of electric vehicle (EV) systems to ensure performance, safety, and longevity. ▪ Identify main EV system components (battery, motor, inverter, BMS, charging infrastructure) ▪ Explain standard failure modes and related diagnostic methods ▪ Apply safe maintenance and repair procedures for EV systems ▪ Use specialised diagnostic tools for electrical and mechanical troubleshooting ▪ Recommend upgrades or routine maintenance to optimise performance	2	Link
C00 7	Emerging drivetrain technologies	Knowledge	Understand recent developments in drivetrain technologies, including hybrid and electric systems, and their impact on maintenance practices. ▪ Describe components and operation of hybrid and electric drivetrains ▪ Explain the function of elements such as regenerative braking, electric motors, and inverters ▪ Apply diagnostic procedures for advanced drivetrain systems ▪ Adapt maintenance techniques to support innovative drivetrain solutions ▪ Select modern repair tools and methods suitable for new drivetrain technologies	2	

Digital Competences

ID	Name	Type	Description	Level	ESCO
C16 4	Maintenance ICT systems	Knowledge	Understand the use of digital systems and tools to plan, execute, and document maintenance activities. ▪ Operate Computerised Maintenance Management Systems (CMMS) to schedule and track interventions ▪ Enter technical and economic data into digital records accurately ▪ Access and interpret maintenance instructions, checklists, and equipment information using software tools ▪ Use mobile devices, tablets, or terminals for real-time reporting of work ▪ Ensure digital maintenance data is consistent and compliant with internal procedures	2	

Soft Skills

ID	Name	Type	Description	Level	ESCO
C12 7	Communication	Knowledge	Apply effective communication techniques to convey maintenance information accurately to different audiences. ▪ Report equipment issues and proposed solutions clearly to supervisors and colleagues ▪ Interpret technical information for non-technical personnel ▪ Coordinate with other departments to optimise maintenance scheduling ▪ Provide concise updates on equipment status, repairs, and maintenance activities ▪ Use active listening to ensure correct understanding of maintenance tasks	2	Link
C12 8	Work in teams	Skill	Collaborate effectively with colleagues to complete maintenance tasks efficiently and safely. ▪ Assist team members during complex repairs	2	Link

ID	Name	Type	Description	Level	ESCO
			▪ Share knowledge and best practices with colleagues ▪ Coordinate with other technicians to avoid workflow interruptions ▪ Support team troubleshooting activities ▪ Maintain a cooperative and solution-focused attitude		
C12 9	Solve problems	Skill	Identify, analyse, and resolve maintenance issues to restore equipment functionality and prevent recurrence. ▪ Perform inspections to detect faults and root causes ▪ Troubleshoot complex mechanical, electrical, or plumbing issues ▪ Propose practical, time-efficient solutions ▪ Implement preventive measures to avoid recurring failures ▪ Adapt to unexpected challenges with innovative approaches	2	Link
C13 3	Adapt to change	Skill	Adjust to changing maintenance priorities, schedules, and equipment conditions. ▪ Respond promptly to urgent maintenance requests ▪ Update work plans based on equipment status and production needs ▪ Learn new tools, technologies, and methods as required ▪ Adapt repair approaches to different machinery types ▪ Manage multiple tasks effectively in dynamic environments	2	
C13 4	Manage time effectively	Skill	Prioritise and organise maintenance tasks to maximise efficiency and minimise downtime. ▪ Plan work schedules based on urgency and operational impact ▪ Meet deadlines for inspections, repairs, and preventive maintenance ▪ Allocate time appropriately for troubleshooting and repairs ▪ Coordinate with teams to avoid delays ▪ Adjust priorities when unexpected issues arise	2	

ID	Name	Type	Description	Level	ESCO
C135	Follow up maintenance tasks	Skill	Ensure maintenance tasks are completed to standard and within schedule. ▪ Prepare tools, materials, and documentation before interventions ▪ Verify completion of maintenance activities as per procedures ▪ Support junior technicians through mentoring ▪ Report issues to supervisors ▪ Document interventions for traceability	2	

Sector Specific

ID	Name	Type	Description	Level	ESCO
C228	Mechanical systems	Knowledge	Understand the operation, inspection, and repair of key mechanical systems in automotive environments. ▪ Describe functions and components of pumps, motors, conveyors ▪ Inspect machinery to identify wear, malfunctions, or potential failures ▪ Apply repair techniques such as lubrication, alignment, or part replacement ▪ Diagnose root causes of mechanical failures and propose corrective actions ▪ Apply preventive maintenance to extend equipment lifespan	3	Link
C229	Electricity principles	Knowledge	Basic electrical theory and its practical application in maintenance operations. ▪ Identify components such as fuses, motors, and relays ▪ Explain current flow and voltage in simple circuits ▪ Read and interpret wiring diagrams ▪ Apply lockout-tagout and electrical isolation procedures safely	2	Link
C230	Electrical systems	Knowledge	Describe the principles, inspection, and repair of electrical systems in industrial and vehicle contexts. ▪ Explain electrical circuits, wiring, and control system principles	3	Link

ID	Name	Type	Description	Level	ESCO
			▪ Inspect breakers, switches, motors, and connections for wear or faults ▪ Perform safe repair of wiring and devices ▪ Troubleshoot malfunctions using diagnostic tools ▪ Apply preventive checks and system upgrades for reliability		
C23 1	Safety and environmental compliance	Knowledge	Apply safety standards and environmental rules in maintenance activities. ▪ Use PPE correctly according to maintenance tasks ▪ Follow procedures from safety management systems ▪ Recognise hazards and apply preventive measures ▪ Ensure compliance with environmental regulations during maintenance work	2	
C23 2	Use diagnostic and repair tools	Skill	Use and maintain tools and diagnostic equipment to identify and resolve faults. ▪ Operate tools such as multimeters, wrenches, and power tools safely ▪ Use diagnostic equipment for mechanical, electrical, and plumbing systems ▪ Calibrate and maintain tools to ensure accuracy ▪ Select appropriate tools for each task ▪ Ensure correct handling and storage of tools	2	
C23 3	Execute maintenance plans	Skill	Perform scheduled maintenance activities according to defined procedures and safety requirements. ▪ Follow work instructions and standard procedures ▪ Apply risk assessment methods before interventions ▪ Identify roles and responsibilities within team-based maintenance ▪ Execute planned interventions safely and efficiently	2	
C23 4	Prepare tools and materials	Skill	Prepare and manage tools, materials, and spare parts required for maintenance activities.	2	

ID	Name	Type	Description	Level	ESCO
			▪ Select and prepare tools based on technical specifications ▪ Ensure spare parts are available and suitable before work ▪ Handle and store materials safely and correctly ▪ Apply calibration and maintenance to work instruments		
C23 5	Ensure maintenance quality follow-up	Skill	Verify that maintenance tasks are performed according to quality standards and operational requirements. ▪ Inspect and test equipment after interventions ▪ Report irregularities or deviations from procedures ▪ Ensure equipment is restored to operational condition ▪ Document interventions and support continuous improvement	2	