

<b>1. TITLE OF THE CERTIFICATE (DE) <sup>(1)</sup></b>
<b>Lehrabschlussprüfungszeugnis Mechatronik – Hauptmodul Automatisierungstechnik</b>
<sup>(1)</sup> in original language

<b>2. TRANSLATED TITLE OF THE CERTIFICATE (EN) <sup>(2)</sup></b>
<b>Certificate of Apprenticeship 'Mechatronics Specialising in Automation Engineering' (f/m)</b>
<sup>(2)</sup> This translation has no legal status.

<b>3. PROFILE OF SKILLS AND COMPETENCES</b>
<p><b>Specialist areas of competence:</b></p> <p><b>Professional profile basic and main module automation engineering:</b></p> <p>The professional is able to</p> <ol style="list-style-type: none"> <li>1. Carry out installation, commissioning and testing of metrological facilities, of parts and components in control and feedback control systems, of bus systems, of mechatronic machinery and devices, as well as of parts and components used in pneumatics and hydraulics,</li> <li>2. Carry out installation, configuration, commissioning, testing and documentation of automation systems for mechatronic installations,</li> <li>3. Carry out a systematic search, localisation and elimination of faults, defects and malfunctions on automation systems of mechatronic installations,</li> <li>4. Carry out maintenance and servicing of automation systems of mechatronic installations,</li> <li>5. Carry out optimisation and implementation of adjustments and changes to automation systems of mechatronic installations,</li> <li>6. Implement changes and extensions to mechatronic installations based on specifications and plans,</li> <li>7. Perform the work taking into consideration relevant safety regulations, standards, environmental and quality standards.</li> </ol> <p>Training courses in one of the following special modules can be provided in addition to the basic and main module, with the aim of offering more in-depth know-how and specialisation.</p> <p><b>Professional profile special module robotics:</b></p> <p>The professional is able to</p> <ol style="list-style-type: none"> <li>1. Carry out programming of robots,</li> <li>2. Carry out installation, configuration, commissioning, testing and documentation of robots and mobile robotic systems and their peripheral facilities,</li> <li>3. Carry out a systematic search, localisation and elimination of faults, defects and malfunctions on robots and mobile robotic systems and their peripheral facilities,</li> <li>4. Carry out maintenance and servicing of robots and mobile robotic systems and their peripheral facilities,</li> <li>5. Carry out optimisation as well as implementation of adjustments and changes to robots and mobile robotic systems and their peripheral facilities,</li> <li>6. Provide advisory services to customers on issues related to the use and operation of robots.</li> </ol> <p><b>Professional profile special module SPS-technics:</b></p> <ol style="list-style-type: none"> <li>1. Carry out planning of the structured programming of programs for programmable logic controllers (PLCs) independent of the controller type,</li> <li>2. Carry out advanced programming according to IEC 61131-3 in all of the following programming languages: IL and ST as well as LD, FBD and SFC,</li> <li>3. Carry out a systematic search, localisation and elimination of faults, defects and malfunctions of PLC programs,</li> <li>4. Carry out programming of alternative programming systems,</li> </ol>

5. Carry out optimisation as well as implementation of adjustments and changes to PLC programs based on the special requirements of their application,
6. Provide advisory services to customers on issues related to PLC programming and optimisation.

**Professional profile special module additive manufacturing (AM):**

1. Carry out creation and optimisation of support structures for components and production processes, also using company-specific software,
2. Carry out preparation of the production processes and operation of company-specific machines and systems for additive production while observing the protective measures and safety rules,
3. Carry out and monitor the production process,
4. Carry out reworking of additively produced components (e.g. removal of support structures, surface treatment, heat treatment, mechanical processing) as well as testing of the components.

**Professional profile special module digital manufacturing engineering:**

1. Select and use appropriate software or other digital applications from the software system landscape in the digital manufacturing environment,
2. Run machining simulations for the entire flow of a final program (e.g. using post-processor output),
3. Save and load programs to control robots or cobots and create simple programs,
4. Perform simple positioning or gripping tasks with robots or cobots.

**Professional profile special module railway electrical engineering:**

1. Perform recurrent testing of electrical engineering systems of railways (power engineering and traction energy),
2. Compile error diagnoses of electrical engineering systems of railways,
3. Accept failure reports and implement emergency measures,
4. Perform the work by taking the special risks of railway operations into account.

**Professional profile special module railway security technology:**

1. Perform recurrent testing of safety installations (e.g. signals, switches, signal boxes, etc.),
2. Carry out servicing and maintenance of safety installations,
3. Search for and eliminate faults and defects on safety installations,
4. Accept failure reports and implement emergency measures,
5. Perform the work by taking the special risks of railway operations into account.

**Professional profile special module railway vehicle technology:**

1. Perform testing, disassembly and assembly work on freight cars or railway carriages,
2. Carry out servicing and maintenance of freight cars or railway carriages,
3. Search for and eliminate faults and defects on freight cars or railway carriages,
4. Perform work taking the special risks of freight cars or railway carriages into account.

**Professional profile special module railway transport technology:**

1. Operate traction units (electrical or diesel traction units) when railway running operations are restricted locally,
2. Apply and implement company-specific and technical regulations of standards,
3. Ensure customer-oriented behaviour and customer-oriented communication,
4. Perform the work taking the special risks of railway vehicle operations into account.

**Professional profile special module railway vehicle maintenance:**

1. Perform testing, disassembly and assembly work on railway vehicles,
2. Carry out servicing and maintenance of railway vehicles,
3. Search for and eliminate faults and defects on railway vehicles,
4. Perform the work taking the special risks of railway vehicle operations into account.

**Professional profile special module railway industrial engineering:**

1. Carry out secure operation of mechanical, electrical and electronic signal control systems, company-specific communication facilities, railway power supply systems and company-specific safety systems if necessary,
2. Apply and implement the company's regulations of standards to attain the highest security of action,
3. Ensure customer-oriented behaviour and customer-oriented communication,
4. Perform the work by taking the special risks of railway operations into account.

**Interdisciplinary areas of competence:**

1. Working in an operational and professional environment
2. Quality oriented, safe and sustainable work
3. Digital work

**4. RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE CERTIFICATE <sup>(3)</sup>****Range of occupations:**

Employment in design offices, workshops, production halls and on-site at customers' premises for the manufacture, assembly, commissioning and repair of mechatronic (mechanical, electrical and electronic) automation systems that are used, for example, in industrial machines and production plants, traffic control systems or in building technology.

<sup>(3)</sup> if applicable

**(\*) Explanatory note**

This document has been developed with a view to providing additional information on individual certificates; it has no legal effect in its own right. These explanatory notes refer to the Decision (EU) no. 2018/646 of the European parliament and the Council of 2 May 2018 on a common framework for the provision of better services for skills and qualifications (Europass).

More information on Europass is available at: <http://europass.cedefop.europa.eu> or [www.europass.at](http://www.europass.at)

**5. OFFICIAL BASIS OF THE CERTIFICATE**

<b>Name and status of the body awarding the certificate</b>  Lehrlingsstelle der Wirtschaftskammer  (Apprenticeship Office of the Economic Chamber; for the address, see certificate)	<b>Name and status of the national/regional authority providing accreditation/recognition of the certificate</b>  Bundesministerium für Arbeit und Wirtschaft  (Federal Ministry for Labour and Economy)
<b>Level of the certificate (national or international)</b>  NQF/EQF 4 ISCED 35	<b>Grading scale / Pass requirements</b>  Overall performance: Pass with Distinction Good Pass Pass Fail
<b>Access to next level of education/training</b> Access to the <i>Berufsreifeprüfung</i> (i.e. certificate providing university access for skilled workers) or a vocational college for people under employment. Access to relevant courses at a <i>Fachhochschule</i> (i.e. university level study programme of at least three years' duration with vocational-technical orientation); additional examinations must be taken if the educational objective of the respective course requires it.	<b>International agreements</b> Between Germany, Hungary, South Tyrol and Austria, international agreements on the mutual automatic recognition of apprenticeship-leave examinations and other vocational qualifications have been concluded. Information on equivalent apprenticeship occupations can be obtained from the Federal Ministry for Digital and Economic Affairs.

**Legal basis**

1. Training Regulation for mechatronics BGBl. II (Federal Law Gazette) No. 196/2019 as amended by BGBl. II No. 315/2022 (company-based training)
2. Curriculum framework (education at the vocational school for apprentices)
3. The present apprenticeship trade replaces the apprenticeship trade mechatronics (Training and Examination Regulation BGBl. II (Federal Law Gazette) No. 120/2015), which expired as of 2019, July 31.
4. The apprenticeship 'mechatronics – automation engineering' has been set up as a modular apprenticeship. Following the basic and main module automation engineering there is the option to provide training in one of the special modules (robotics, sps-technics, digital manufacturing engineering, additive manufacturing); one of the special modules of the apprenticeship 'electrical engineering' (training regulation BGBl. II No. 195/2010 as amended by BGBl. II No. 148/2018) railway electrical engineering, railway security technology, railway vehicle technology, railway transport technology, railway vehicle maintenance, railway industrial engineering. Information on the main module is provided in the Certificate of Apprenticeship.

**6. OFFICIALLY RECOGNISED WAYS OF ACQUIRING THE CERTIFICATE**

1. Training in the framework of the given Training Regulation for mechatronics – automation engineering and of the curriculum of the vocational school for apprentices. Admission to the final apprenticeship examination upon

completion of the apprenticeship period specified for the apprenticeship trade concerned. The final apprenticeship examination aims to establish whether the apprentice has acquired the skills and competences required for the respective apprenticeship trade and is able to carry out the activities particular to the learned trade herself/himself in an appropriate manner.

2. Admission to the final apprenticeship examination in accordance with Article 23 (5) of the *Berufsausbildungsgesetz* (Vocational Training Act). An applicant for an examination is entitled to sit the final apprenticeship examination without completing a formal apprenticeship training if she/he has reached 18 years of age and is able to prove acquisition of the required skills and competences by means of a relevant practical or an on-the-job training activity of appropriate length, by attending relevant courses etc.

**Additional information:**

**Entry requirements:** successful completion of 9 years of compulsory schooling.

**Duration of training:** basic and main module: 3,5 years; basic, main and special module/additional main module: 4 years.

**Enterprise-based training:** Enterprise-based training comprises  $\frac{4}{5}$  of the entire duration of the training and focuses on the provision of job-specific skills and competences according to Article 3 of the Training Regulation, BGBl. II (Federal Law Gazette) No. 169/2019, enabling the apprentice to exercise qualified activities as defined by the profile of skills and competences specified above (cf. job profile).

**Education at vocational school:** School-based education comprises  $\frac{1}{5}$  of the entire duration of the training. The vocational school for apprentices has the tasks of imparting to apprentices the basic theoretical knowledge, of supplementing their enterprise-based training and of widening their general education in the framework of subject-oriented part-time instruction.

**More information** (including a description of the national qualification system) is available at:  
[www.zeugnisinfo.at](http://www.zeugnisinfo.at) and [www.edusystem.at](http://www.edusystem.at)

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