



1. TITLE OF THE CERTIFICATE (DE) (1)

**Abschlussprüfung im staatlich anerkannten Ausbildungsberuf  
Mathematisch-technischer Softwareentwickler/ Mathematisch-technische  
Softwareentwicklerin**

(1) in original language

2. TRANSLATED TITLE OF THE CERTIFICATE (EN)(1)

**Final examination in the state-recognized training occupation Mathematical-technical  
software developer**

(1) This translation has no legal status.

3. PROFILE OF SKILLS AND COMPETENCES

- Apply mathematical models to solve problems in the areas of computing, technology, natural sciences and trade and industry
- Analyse problems and develop and describe formalised models in the field of software development
- Design and realise object-oriented and complex software systems
- Draw up user and system documentation
- Document the software development process
- Use and apply standard mathematical procedures and solution algorithms in programmes
- Assist academic researchers with the mathematical interpretation and presentation of results
- Plan and carry out quality assurance measures
- Use standard test principles and procedures and deploy test tools in a suitable manner
- Communicate mathematical problems across different specialist fields and work in inter-disciplinary teams
- Apply project management methods
- Advise and train users.

4. RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE CERTIFICATE (1)

Mathematical-technical software developers are employed at companies of various types and sizes such as commercial and industrial companies, research institutes, data processing centres and institutes of higher education.

(1) if applicable

(\*) **Explanatory notes**

This document is designed to provide additional information about the specified certificate and does not have any legal status in itself. The format of the description is based on the following texts: Council Resolution 93/C 49/01 of 3 December 1992 on the transparency of qualifications, Council Resolution 96/C 224/04 of 15 July 1996 on the transparency of vocational training certificates, and Recommendation 2001/613/EC of the European Parliament and of the Council of 10 July 2001 on mobility within the Community for students, persons undergoing training, volunteers, teachers and trainers.

More information on transparency is available at: [www.europass.cedefop.eu.int/transparency](http://www.europass.cedefop.eu.int/transparency)

## 5. OFFICIAL BASIS OF THE CERTIFICATE

<p><b>Name and status of the body awarding the certificate</b></p> <p>Chamber of Industry and Commerce</p>	<p><b>Name and status of the national/regional authority providing accreditation/recognition of the certificate</b></p> <p>Chamber of Industry and Commerce</p>
<p><b>Level of the certificate (national or international)</b></p> <p>ISCED 3B  German Qualifications Framework (DQR) level 4 (alignment is preliminary pursuant to "German Qualifications Framework for Lifelong Learning" - German EQF - Referencing report of 15 November 2012). Published by: Federal Ministry of Education and Research (BMBF), Berlin and Bonn; Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany (Conference of the Ministers of Education and Cultural Affairs - KMK), Berlin)</p>	<p><b>Grading scale / Pass requirements</b></p> <p>100-92 points = 1 = excellent  91 - 81 points = 2 = good  80 - 67 points = 3 = average  66 - 50 points = 4 = pass  49 - 30 points = 5 = poor  29 - 0 points = 6 = fail</p> <p>A total of at least 50 grade points are required to pass the examination.</p>
<p><b>Access to next level of education / training</b></p> <p>State certified technician specialised in information technology, certified senior technical clerk in computer management, business economist for information processing (trade and technical school)</p>	<p><b>International agreements</b></p> <p>In the field of vocational training, joint declarations on the comparability of qualifications obtained in the respective vocational training systems have been signed on the basis of bilateral agreements concluded between Germany and France and between Germany and Austria.</p>
<p><b>Legal basis</b>  Ordinance on Initial Vocational Education and Training in the Occupation of Mathematical-technical software developer of 03/14/2007 (Federal Law Gazette, Part I, p 326) Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany, KMK, of 18.01.2007), (Federal Gazette, No 132a of 19.07.2007)</p>	

## 6. OFFICIALLY RECOGNISED WAYS OF ACQUIRING THE CERTIFICATE

<p>Final examination administered by the competent body:</p> <ol style="list-style-type: none"> <li>1. after completion of dual training in a company and at part-time vocational school (normal procedure)</li> <li>2. after retraining in a recognized training occupation</li> <li>3. as an external examination for working people without formal vocational qualifications or persons who have been trained at full-time vocational schools or other vocational training institutions</li> </ol>
<p><b>Additional information</b></p> <p><b>Entry requirements:</b> Entry requirements are not governed by legislation; as a rule, young people are admitted after completing (nine or ten years of) general education.</p> <p><b>Duration of training:</b> 3 years.</p> <p><b>Training in the "dual system":</b>  Teaching of the knowledge, skills and competences needed for an occupation is based on the typical requirements of work and business processes and prepares the trainees for a specific job. <b>The training is provided in a company and at part-time vocational school:</b> In the company, the trainees acquire practical skills in a real working environment. On one or two days per week, the trainees attend part-time vocational school, where they are taught general and vocational knowledge related to their training occupation.</p> <p><b>More information</b> is available at:  <a href="http://www.berufenet.arbeitsagentur.de">www.berufenet.arbeitsagentur.de</a></p> <p><b>National Europass Centre</b>  <a href="http://www.europass-info.de">www.europass-info.de</a></p>