

## 1. Title of the certificate <sup>(en)</sup>



### City & Guilds Level 5 Diploma in Mechanical Engineering (9209-11)

<sup>(1)</sup> In the original language

## 2. Translated title of the certificate <sup>(1)</sup>

<sup>(1)</sup> If applicable. This translation has no legal status.

## 3. Profile of skills and competences

A typical holder of the certificate is able to:

- Explain advanced mathematical techniques and apply analytical skills to the solution of engineering problems, including matrix algebra, vector methods of analysis, calculus, numerical analysis techniques and statistical tests.
- Apply basic fluid mechanics
- Apply the mechanics of flowing fluids
- Determine the performance of incompressible fluid turbo-machines
- Solve problems in engineering applications of fluid mechanics
- Apply thermodynamic principles to engineering power and refrigeration cycles
- Perform design calculations for compressible fluid turbo-machines
- Determine the practical performance of internal combustion engines
- Determine the practical performance of reciprocating compressors
- Apply the theory of elastic and plastic loading of materials to different types of structures
- Analyse the effect of different types of loading upon the structure or structural component
- Explain different modes of failure including fatigue, stress rupture and creep
- Analyse and solve problems related to loading
- Explain the atomic structure of engineering materials
- Explain the effects of additional processing on the properties of metals
- Explain the engineering applications of non-ferrous metals and their alloys
- Explain the engineering applications of composite materials
- Explain how the behaviour of a material is affected by the physical properties of the material
- Evaluate the performance of machine systems
- Explain the kinematics of mechanisms
- Explain the dynamics of machines
- Explain the need for machine balancing
- Explain the vibration of machines

and has successfully completed **two** of the following areas:

- **Engineering project**
- **Project management**
- **Instrumentation and control principles**
- **Modelling engineering designs**

## 4. Range of occupations accessible to the holder of the certificate <sup>(1)</sup>

- Senior Technician
- Engineering Management

*Note: the above are examples only, other occupations may also be accessible to holders of the certificate.*

<sup>(1)</sup> If applicable

## 5. Official basis of the certificate

<p><b>Name and status of the body awarding the certificate</b></p> <p>City &amp; Guilds 1 Giltspur Street London EC1A 9DD United Kingdom T +44 (0)20 7294 2800 F +44 (0)20 7294 2400 <a href="http://www.cityandguilds.com">www.cityandguilds.com</a></p> <p>City &amp; Guilds was established in 1878 as a registered charity (no. 312832) and received Royal Charter (RC117) in 1900.</p> <p>City &amp; Guilds is accredited as an awarding body by the Office of the Qualifications and Examinations Regulator (Qfqual) and the Scottish Qualifications Authority (SQA) to offer qualifications.</p>	<p><b>Name and status of the national/regional authority providing accreditation/recognition of the certificate</b></p> <p>The international engineering qualifications are a unique set of qualifications designed by City &amp; Guilds mainly for international use.</p> <p>They are subject to global quality assurance rules and regulations set by City &amp; Guilds. These policies are based on the quality assurance practices which have been approved by Qfqual.</p>
<p><b>Level of the certificate (national or international)</b></p> <p>Level 5* – National Qualifications Framework of England, Wales and Northern Ireland (NQF)</p> <p><i>*broad comparability</i></p>	<p><b>Grading scale/Pass requirements</b></p> <p>Units that make up the qualification are graded 'Pass', 'Credit', 'Distinction' or 'Fail'.</p> <p>The overall qualification is not graded. A certificate will only be awarded on successful completion of the required number of units.</p>
<p><b>Access to next level of education/training</b></p> <p>We consider the following options to be a relevant progression routes from this qualification:</p> <ul style="list-style-type: none"> <li>• Level 6 Graduate Diploma in Mechanical Engineering (9210-01)</li> <li>• ILM qualifications</li> <li>• University</li> <li>• Employment.</li> </ul>	<p><b>International agreements</b></p>
<p><b>Legal basis</b></p> <p>Not applicable.</p>	

## 6. Officially recognised ways of acquiring the certificate

<p>This qualification can only be offered by an institution/provider ('centre') that has been approved by City &amp; Guilds and therefore meets its quality requirements for staff and centre resources and is subject to regular checks.</p> <p>The following assessment methods are used:</p> <ul style="list-style-type: none"> <li>• Written tests set and marked by City &amp; Guilds</li> <li>• Practical assessments set by City &amp; Guilds and marked by the centre</li> <li>• Practical assessments set and marked by the centre</li> </ul> <p>All assessment practice is quality assured by City &amp; Guilds verifiers.</p> <p>A typical learner will study for 1200 hours to achieve this qualification, but the duration of the training will vary depending on optional units chosen.</p> <p><b>Entry requirements</b></p> <p>City &amp; Guilds exercises a policy of open access and does not set formal entry requirements for its qualifications. Centres are however required to ensure that learners are registered for a programme of study and examination at the appropriate level.</p> <p><b>More information (including a description of the national qualifications system) available at:</b> <a href="http://www.naric.org.uk">www.naric.org.uk</a>.</p> <p><b>National reference point:</b> <a href="http://www.uknqp.org.uk">www.uknqp.org.uk</a>.</p>
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**(<sup>1</sup>) Explanatory note**

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 available at: <http://europass.cedefop.eu.int>.  
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