General Overview

School Year and Grading System

School System

Chemistry Curriculum

Teacher Resource
Germany, officially the Federal Republic of Germany (German: Bundesrepublik Deutschland) is a federal parliamentary republic in western-central Europe.

- Germany includes 16 constituent states covers an area of 357,021 square kilometres (137,847 sq mi).
- The capital and largest city is Berlin.
Müller

penggiling
The responsibility for the German education system lies primarily with the states (Länder) while the federal government plays only a minor role.

The German primary and secondary school system is rather complicated one in which there are many different kinds of secondary school
The school year starts after the summer break (different from state to state, usually end/mid of August) and is divided into two terms. There are typically 12 weeks of holidays in addition to public holidays.

- Eastern holidays -> 2 weeks
- Summer holidays -> 6 weeks
- Autumn holidays -> 2 weeks
- Winter holidays -> 2 weeks
THE GRADING SYSTEM

• The German grading scale runs from 1 to 6, with 1 being the best grade (A) and 6 being the worst (F).

• Poor grades in several subjects can result in a student having to repeat an entire school year.
From cradle to secondary education

- nursery school (1-3)
- kindergarten (3-6)
- elementary/primary school (7-10)
• legal right for each child to get a half-day service in a kindergarten (children age 3 – when they start school)

• pre-school child programs
Primary Education-Grundschule

- from the age of 6
- first compulsory school
- transfer to secondary schools after 4th grade
- goals: preparation for secondary schools
  » social education
  » basic knowledge
  » interests and abilities
Primary Education-Grundschule

- homeschooling not allowed.
- all children who are 6 years old before Sep 30th can start school in Grundshule
Primary Education-Grundschule

– Gymnasium:
  • 2.33 combined and a 2.0 in Math and German
– Realschule/Wirtschaftsschule:
  • 2.66 combined and a 2.5 in Math and German
– Hauptschule:
  • 3.00 and higher

– also possible: probation period
Secondary Education I - Hauptshule

- Basic general education
- Application for jobs
- Focus on practical experience
- Activity-orientated
- Transfer to schools for further education possible
Secondary Education I-Hauptshule

• In Bavaria: possible transfer to Realschule after 5\textsuperscript{th} or 6\textsuperscript{th} grade if grades are good enough
Secondary Education II - Realschule

- Medium general education
- Basic knowledge in job oriented subjects
- Basis for a practical career
- Transfer to further education possible
- in Bavaria: possible transfer to Gymnasium after 6th grade
- High general education
- Wide range of subjects / Courses:
  - Focus on language and arts
  - Focus on science and technology
  - Focus on social studies
- At least two languages obligatory
- Ended with final exams
  → Abitur (~ A-levels)
  → required for access to university
Secondary Education IV-Gesamtschule

- comprehensive school

- Gesamtschule:
  → pupils choose courses according to their skills
TERTIARY LEVEL

- Fachhochschule (FH)
- Universität (UNI)
FACHHOCHSCHULE

• Fachhochschule concern in applied science
UNIVERSITY

Admission Requirement:
Abitur/Allgemeine Hochschulreife

Financing:
tuition fees
Bafög
scholarships
Heidelberg University is the oldest of Germany's universities and among its best ranked. It was established in 1386.

Wendelstein 7-X, a research facility at the Max Planck Institute of Plasma Physics in Greifswald. Much of Germany's academic research is done in independent institutes.

Germany is the destination for the Engineering students. The exposure for them is much higher than any other country.
CHEMISTRY CURRICULUM

Grade 7
• Acid reaction
• Combustion
• Waste
• Earth material

Grade 8
• Chemistry Reaction
• Element
• Combustion
• Rocks/ ores
CHEMISTRY CURRICULUM

Grade 9
• Acid Reaction
• Metal Reaction
• Research Project

Grade 10
• Polymer and Ethanol
• Vegetable Oil
• Earth and Atmosphere

Grade 11
• Sub-atomic Particle
• Reaction Rate
• Acid and Base
CHEMISTRY CURRICULUM

Grade 12

➤ General Chemistry
  • Atomic Structure
  • Number of Substance
  • Chemical Bonding
  • Periodicity

➤ Chemical Reaction
  • Chemical Kinetic
  • Equilibrium
  • Entalphy
  • Redox
  • Halogen
  • Metal Extraction
Grade 13

- Physical Chemistry and Organic Chemistry
  - Chemical Kinetic
  - Equilibrium
  - Acid and Base
  - Isomery
  - Carbon Compounds
  - Aromatic Compounds
  - Amine and Amine Acid
  - Organic Analysis and Synthesis

- Thermodinamics and Inorganic Chemistry
  - Thermodinamic
  - Redox Equilibrium
  - Periodicity
  - Metal Transition
Teacher Resource

How Germany train their teachers?
• Each federal state in Germany has its own plan for the education of teachers.
• German teachers are prepared to teach between two and three school subjects. There is a precise combination of subjects which can be taken. For example in Bavaria it would not be possible to teach Chemistry, Latin and Sport.
• Having finished the studies, there has to be done a teacher training program. This program varies in time and effort, again depending in which federal state you are applying.

• The teacher training can take between one or two years. The trainee can be send to any public school of his federal state. Sometimes the trainees have to change schools several times during the program.
The Countries Where Teachers Get Paid The Most

Annual average salary of lower secondary school teachers with 10 years experience in 2013*

<table>
<thead>
<tr>
<th>Country</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luxembourg</td>
<td>$99,900</td>
</tr>
<tr>
<td>Germany</td>
<td>$65,843</td>
</tr>
<tr>
<td>Canada</td>
<td>$63,557</td>
</tr>
<tr>
<td>Australia</td>
<td>$56,315</td>
</tr>
<tr>
<td>Netherlands</td>
<td>$55,697</td>
</tr>
<tr>
<td>United States</td>
<td>$53,758</td>
</tr>
<tr>
<td>Ireland</td>
<td>$53,257</td>
</tr>
<tr>
<td>Denmark</td>
<td>$51,640</td>
</tr>
<tr>
<td>England</td>
<td>$45,595</td>
</tr>
<tr>
<td>Norway</td>
<td>$44,538</td>
</tr>
<tr>
<td>New Zealand</td>
<td>$44,509</td>
</tr>
<tr>
<td>Spain</td>
<td>$44,124</td>
</tr>
</tbody>
</table>

*OECD countries

Source: OECD
Dankeschön