BASIC INFORMATION

about the Czech Republic and Brno University of Technology

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The Czech Republic

Located just at the middle of Europe, surrounded from 3 sides by mountains and from the fourth side by river Morava.
Czechoslovakia  

The first independent state of the Czechs and Slovaks

Founder of Czechoslovakia:

Tomáš Garrigue Masaryk  
1850 - 1937  
1\textsuperscript{st} president of Czechoslovakia  
Czech scientist, philosopher, teacher, politician, newspaperman  
2\textsuperscript{nd} Greatest Czech

Important data in the existence of Czechoslovakia:

28.10.1918: Establishment of Czechoslovakia (1\textsuperscript{st} Republic)  
29.9.1938: Munich agreement was signed (Hitler, Chamberlain, Daladier, Mussolini)

14.3.1939: Occupation of Czechoslovakia by Nazi Troops, establishing of Protektorat Böhmen und Mähren and Slovak State
Czechoslovakia


Important data in the existence of Czechoslovakia:

- 9.5.1945: End of WWII – Prague was deliberated by Red Army
- 28.2.1948: Victory of Communist Party in elections
- 14.5.1955: Czechoslovakia became member of Warsaw Pact
- 21.8.1968: Occupation of Czechoslovak Socialistic Republic by Soviet, Polish, Hungarian and Bulgarian army
- 16.11.1989: Beginning of Velvet Revolution
- 21.6.1991: Withdrawal of Soviet crews from the Czech Republic finished
- 1.1.1993: Establishment of the Czech Republic
- 12.3.1999: CR became member of NATO
- 1.5.2004: CR became member of EU
- 21.12.2007 CR signed Schengen treaty

Undertakers of common state of Czechs and Slovaks:

Václav Klaus
* 19.6.1941

Vladimír Mečiar
The Czech Republic

Area: 78 866 km²
10 264 000 inhabitants

Established: 1.1.1993

Václav Havel
5.10.1936 – 18.12.2011
1st president of the CR
History

King Charles 4th
14.5.1316 – 29.11.1378

The Most Important Person in the History of the Czech nation
The Crown of Bohemia and the Roman Empire
Charles University, Prague

Founded: April 7, 1348 by Czech King Charles IV
Prague: Carolinum Today
Prague: Charles Bridge

Laying of foundation stone:
9.7.1357 at 5:31

The palindromic combination of odd numbers (1357-9-7-5:31) had to bring happiness to the building.
The Oldest Stone Bridge in the CR

The Town of Písek, South Bohemia, Otava River
End of 13th century
Educational Tradition in the CR

John Amos Comenius
(March 28, 1592 – November 4, 1670)

• „Teacher of the Nations“
• Considered as father of modern education

Most famous Comenius book:
*Didactica Magna* (Great Didactic) – written in 1633–1638

Proposal of educational system:
• Kindergarten
• Elementary school
• Secondary school
• College, University

*His motto: Schola ludus*
Jaroslav Heyrovský

1890 – 1967
Chemist

1959 – Nobel Prize for Chemistry
(polarography)

Drawing by Zdeněk Herman
Institute of Analytical Chemistry, Czech Academy of Sciences

Jaroslav Janák (*1924)
1953: Discovery of gas chromatography on molecular sieves
1956: Foundation of the IACH
1991: New building finished
Otto Wichterle

1913 – 1998
Chemist

1941 – synthetic polyamide fiber (Silon)
1956 - Rigid contact lenses
1958 – Soft contact lenses based on polyethylacrylate, which are used all over the world

Setup for centrifugal casting of soft contact lenses
Jan Jánský

Classification of Blood Groups:

<table>
<thead>
<tr>
<th>Landsteiner</th>
<th>Jánský</th>
<th>Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>II</td>
<td>A</td>
</tr>
<tr>
<td>B</td>
<td>III</td>
<td>B</td>
</tr>
<tr>
<td>C</td>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>---</td>
<td>IV</td>
<td>AB</td>
</tr>
</tbody>
</table>
František Křižík

(1847-1941)

Inventor in the area of electrotechnics

1880: Arc-discharge lamp with auto regulation of electrode distance

Hydroelectric power station put into operation in 1888 in the town of Písek for powering the city's electric lighting - still in operation
Josef Ressel

1773-1857

1826: Propeller
Johan Gregor Mendel

1822 - 1884
Abbot of the Augustinian monastery in Old Brno
1865 - discovery of the laws of heredity
Leoš Janáček

1854 - 1958
Most famous regional composer

Statue of Leoš Janáček close to Janáček’s Theatre in Brno
Viktor Kaplan

1876-1934

1910 – 1912: Kaplan’s Turbine

Professor at the Brno University of Technology
Lump Sugar

Jacob Christoph Rad
1799 – 1871
Director of sugar refinery in Dačice

Proposal of lump was initiated by Rad’s wife

Memorial in the City of Dačice
Jaromír Vejvoda

1902 - 1988
Musician, Composer

1929:
• Škoda lásky (The shame of love)
• Hvor er min kope
• Rosamunde (Germans)
• Beerbarrel-polka (USA)
• Ut i naturen
• Roll out the Barrels (English)
• Here Comes the Navy (US Navy)

Interpreted by: Andrews Sisters, Glenn Miller Orchestra, Benny Goodman or Billie Holiday.
After WWII: Lawrence Welk, Liberace, Frank Yankovic, The Grateful Dead, Bobby Vinton, Willie Nelson, Frank Sinatra, Mitch Miller, Southside Johnny & The Asbury, Luciano Pavarotti...
Škoda lásky

• **Dwight Eisenhower:**
  • This song helped the Allies to win the Second World War.

**Bill Jones:**
• in 1964 during trip to Czechoslovakia he vehemently defended the English origin of the song
• He bet: if this is not true, he will arrive to Czechoslovakia with his London double-decker
• Lost this bet
• Realized trip to Czechoslovakia with family and friends on double-decker (probably the first documented occasion when this bus left British territory)

**Hans-Dietrich Genscher** (minister of foreign affairs, BRD):
• in 80’ies during state visit to Czechoslovakia he vehemently defended the German origin of the song
• also lost a bet
Madelene Korbel Albright

• 1st women in this function
• Born in Prague (Malá Strana)
• Madlenka Korbelová
City of Brno

Number of inhabitants (31. 12. 2017): 379 527

Men: 183 300
Women: 196 227

Brno – educational centre
- 1 state university
- 5 public universities
- 5 private universities

Total number of university students in the town of Brno:
- More than 75 thousands
Universities in the Brno City

Masaryk University (1919)
9 faculties, 30 000 students

Brno University of Technology (1899)
8 faculties, 24 000 students

Mendel University of Agriculture and Forestry (1919)
4 faculties, 8 000 students

University of Veterinary and Pharmaceutical Sciences (1918)
3 faculties, over 2000 students

Janáček Academy of Music and Performing Arts (1947)
2 faculties, over 500 students

University of State Defence (2004)
3 faculties
Universities in the Brno City

PRIVATE UNIVERSITIES

- Sting Academy (2000)
- Newton College (1994)
- Brno International Business School
- Rašín University (2002)
- University of Karel Engliš (2003)
Brno University of Technology

Established in 1911 as „Technical University of Emperor Franz Joseph“

4 Faculties:
• Civil engineering
• Mechanical & electrical engineering
• Cultural engineering (hydraulic structures, amelioration)
• Chemical engineering

Since 1937 entitled as „Dr. Edvard Beneš Czech Technical University“

1951: Splitting into Military Technical Academy and Brno University of Technology
Brno University of Technology

1992: Re-establishing of the Faculty of Chemistry at BUT
Brno University of Technology

BUT Today:
8 faculties, 2 institutes
- Faculty of Architecture - FA
- Faculty of Electrical Engineering and Communication - FEEC
- Faculty of Chemistry - FCH
- Faculty of Information Technology - FIT
- Faculty of Business and Management - FBM
- Faculty of Civil Engineering - FCE
- Faculty of Mechanical Engineering - FME
- Faculty of Fine Arts - FFA
- Institute of Forensic Engineering - IFE
- Centre of Sports Activities - CESA

World university ranking:
BUT is among the 400 to 600 best universities of the world
(Quacquarelli Symonds Limited (QS) prestigious world university rankings)

BUT holds ECTS and DS labels (for 2009 - 2013)
Brno University of Technology

**Number of students**
*Data from the 31\textsuperscript{st} of December 2012*

<table>
<thead>
<tr>
<th>Fakult</th>
<th>Počet studentů</th>
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<tr>
<td>FAST</td>
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<tr>
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<tr>
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<tr>
<td>FaVU</td>
<td>278</td>
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Total 23 996
Number of foreign students
In years 2005 to 2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>3558</td>
</tr>
<tr>
<td>2011</td>
<td>2776</td>
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<tr>
<td>2010</td>
<td>2583</td>
</tr>
<tr>
<td>2009</td>
<td>2326</td>
</tr>
<tr>
<td>2008</td>
<td>2166</td>
</tr>
<tr>
<td>2007</td>
<td>1853</td>
</tr>
<tr>
<td>2006</td>
<td>1542</td>
</tr>
<tr>
<td>2005</td>
<td>1258</td>
</tr>
</tbody>
</table>
Structured education

Number of students in various types of study programs

Bc. 14,635
NMgr. 7,259
Ph.D. 2,102
Total 23,996

BACHELOR study programs / 3 to 4 year, title Bc., BcA.
CONTINUING MASTER study programs / 1.5 to 2 year, title Ing., Ing. arch., MgA.
DOCTORAL study programs / 3 to 4 year, title Ph.D.
Faculty of Chemistry today:

- 1100 students
- 4 institutes:
  - Institute of Chemistry and Technology of Environmental Protection
  - Institute of Materials Chemistry
  - Institute of Physical and Applied Chemistry
  - Institute of Food Science and Biotechnology
- 1 research centre
  - Centre for Material Research
Institute of Materials Chemistry

Study programs:

- Bachelor study program Chemistry and Chemical Technologies, specialization Chemistry, Technology and Properties of materials (3-year, Bc.)
- Follow-up master study program Chemistry, Technology and Materials Properties (2-year, Ing.)
- Doctoral study program Chemistry, Technology and Materials Properties (4-year, Ph.D.)

Research:

- Section of Polymers: physics and chemistry of polymers (biomaterials, polymer composites, nanocomposites, …)
- Section of Anorganic materials: Ceramics, advanced ceramics, inorganic and non-traditional adhesives, geopolymer materials, composites, metal materials
Institute of Physical and Applied Chemistry

Study:
- Bachelor study program Chemistry and Chemical Technologies, specialization Consumer Chemistry (3-year, Bc.)
- Follow-up master study program Consumer Chemistry (2-year, Ing.)
- Doctoral study program Physical chemistry (4-year, Ph.D.)

Research:
- Physical, surface and colloid chemistry
- Plasmochemistry
- Molecular materials and nanomaterials for electronics
- Photochemical processes
- Photography, polygraphy and image engineering
- Textile chemistry
Institute of Food Chemistry and Biotechnology

Study:

- Bachelor study program Food Chemistry and Technology specialization Biotechnology, Food Chemistry (3-year, Bc.)
- Follow-up master study program Food Chemistry and Technology (2-year, Ing.)
- Doctoral study program Food Chemistry and Technology (4-year, Ph.D.)
- Bachelor study program Chemistry for Medicinal Applications (3-year, Bc.)
- Follow-up master study program Chemistry for Medicinal Applications (2-year, Ing.)

Research:

- Production of biofuel from waste substrates
- Application of molecular biologic methods for identification and characterization of lactic fermentation bacteria in food
- Analysis of food, based mainly on application of separation techniques liquid chromatography and capillary electrophoresis
- Application of molecular – biological methods (PCR) for identification of microorganisms
Institute of Chemistry and Technology of Environmental Protection

Study:
• Bachelor study program Chemistry and Chemical Technology, specialization Chemistry and Technology of Environmental Protection (3-year, Bc.)
• Follow-up master study program Chemistry and Technology of Environmental Protection (2-year, Ing.)
• Doctoral study program Chemistry and Technology of Environmental Protection (4-year, Ph.D.)

Research Orientation:
• Fate and analysis of pollutants in the environment
• New technologies and processes of drinking and waste water treatment
• Waste management, reuse, circular economy
• Renewable energy sources
Centre of Materials Research

Research orientation:
Research program Inorganic materials

• inorganic binders
  • cement
  • concrete
  • composites

• ceramic materials
  • technical and construction ceramics
  • elektrotechnical ceramics
  • non-oxide ceramics
  • refractory materials
  • bioceramics...

• metal materials
  • corrosion
thank you for your attention

www.fch.vut.cz