



POLITECNICO
MILANO 1863

**SCHOOL OF CIVIL, ENVIRONMENTAL
AND LAND MANAGEMENT ENGINEERING**

Civil Engineering

Open Days 2024

Civil Engineering Works



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Pyramids 2700 – 2500 B.C.



Great Wall
≈ 470 B.C.



Pont-du-Gard 17 B.C.



Viaduc de Garabit 1884



Tour Eiffel
1889

Central Station Milan 1931



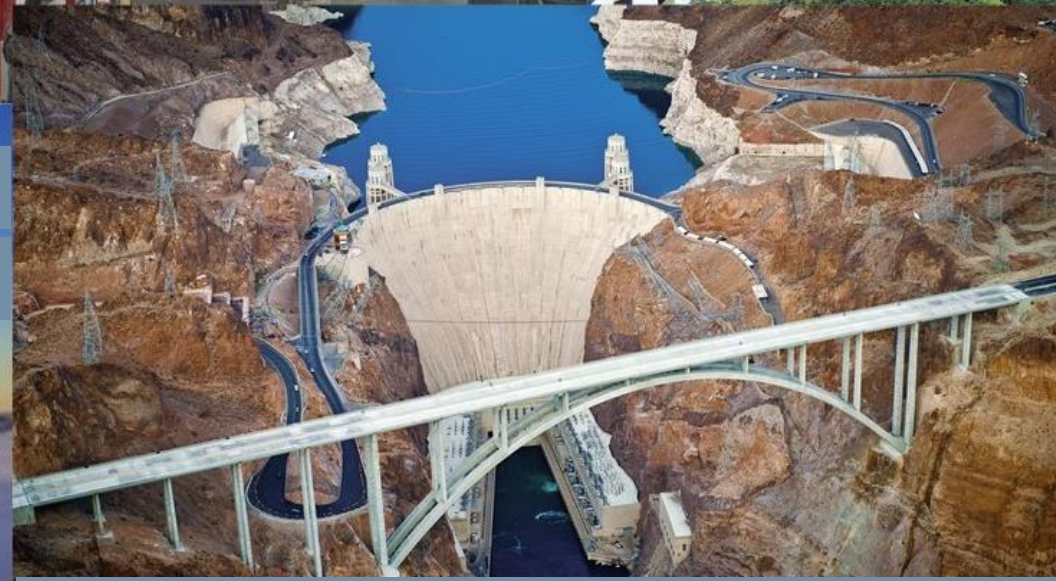
Burj-Khalifa 2010



Golden Gate
1936



Hoover Dam 1935

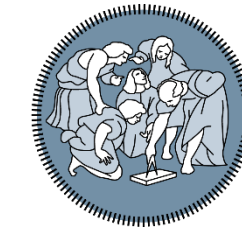


Panama Canal 1914



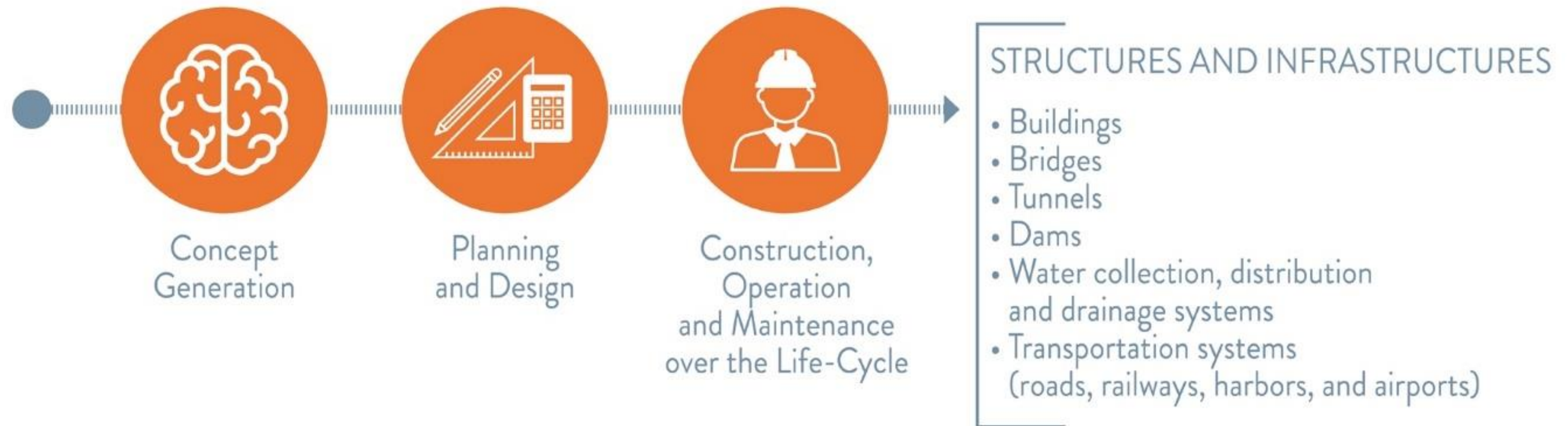
Civil Engineering works developed along with the progress of humanity. Civil structures and infrastructure systems are the backbone of modern society and among the major drivers of the economic growth and sustainable development of countries.

What does a Civil Engineer do?



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Civil Engineering deals with planning, design, construction, assessment, monitoring, maintenance and management of **structures and infrastructures**.



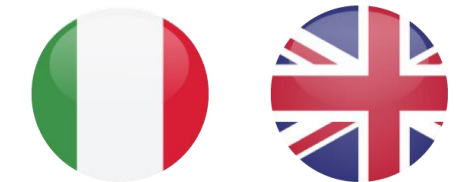
Civil Engineers play a fundamental role in everyday life imprinting the backbone of our society with buildings, bridges, tunnels, dams, water collection, distribution and drainage systems, transportation systems such as roads, railways, harbors, and airports.

Laurea (Bachelor of Science)



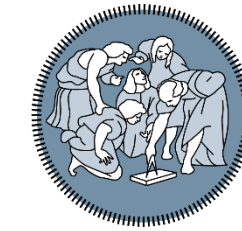
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A **track** entirely taught **in English** is established also at the **Bachelor level**, and offered jointly with the existing track in Italian. *Elective* courses both in Italian and English will be available.











The first year of the Bachelor Degree program is devoted to basic engineering subjects. The second and third years cover the core subjects of Civil Engineering.

What will you study?

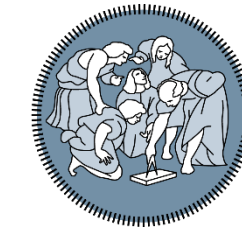


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The English track includes courses of high topicality related to diagnostics, monitoring, maintenance and management of **existing structures and infrastructures**.

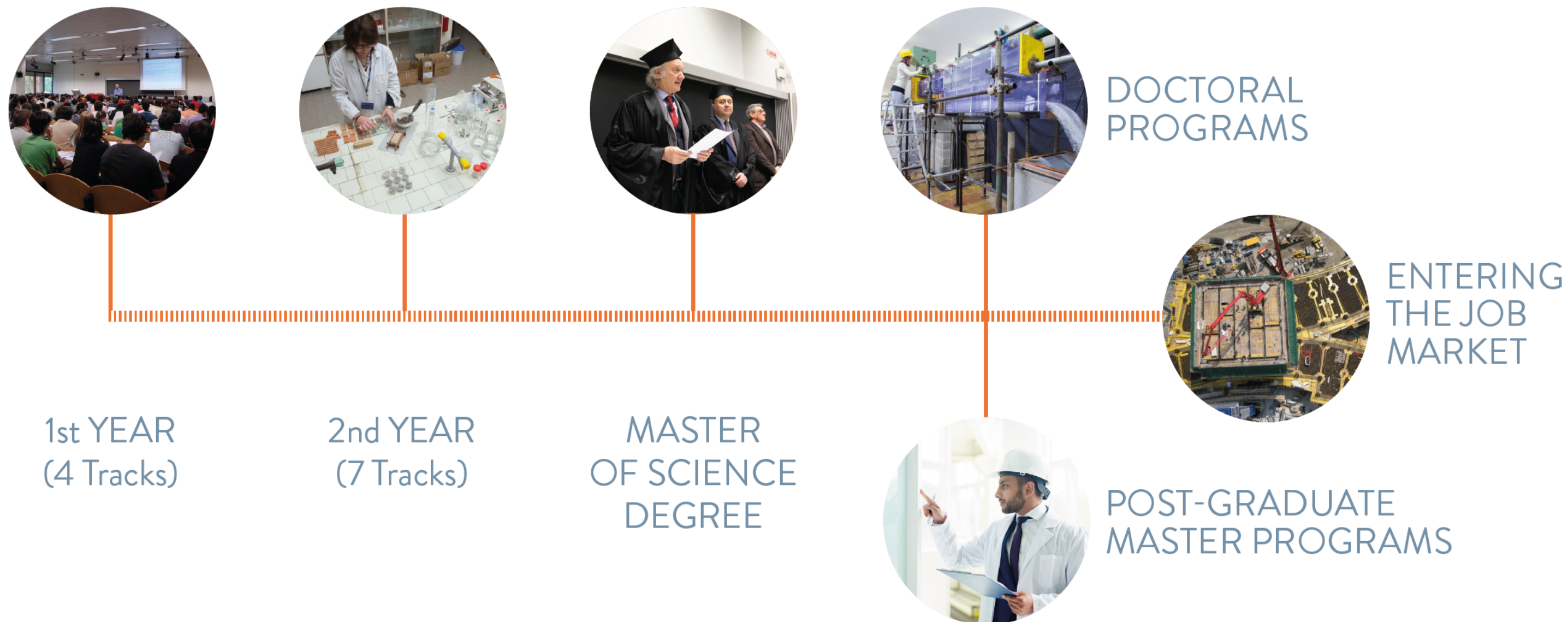
| 1st Year  | 2nd Year  | 3rd Year  |
|---|--|--|
| MATHEMATICAL ANALYSIS I AND GEOMETRY | DIFFERENTIAL EQUATIONS | STRUCTURAL DESIGN |
| CHEMISTRY | RATIONAL MECHANICS | GEOTECHNICS |
| PHYSICS I AND PHYSICS IIA | SURVEYING AND DATA PROCESSING | HYDRAULIC ENGINEERING |
| MATHEMATICAL ANALYSIS II | HYDRAULICS | CONSTRUCTION OF ROADS, RAILWAYS, AND AIRPORTS |
| CONSTRUCTION MATERIALS | STRUCTURAL MECHANICS | NON DESTRUCTIVE TESTING |
| ENGINEERING GEOLOGICAL SURVEY | PROJECT MANAGEMENT: PRINCIPLES & TOOLS # | STRUCTURAL MONITORING |
| FUNDAMENTALS OF COMPUTER SCIENCE AND TECHNICAL DRAWING | FISICA TECNICA (ING. CIVILE) #  | ENVIRONMENTAL ENGINEERING # |
| | | DURABILITA' DEI MATERIALI E TECNOLOGIE PER IL RESTAURO DELLE STRUTTURE #  |
| | | ELETTROTECNICA #  |
| | | TECNICA DEL CANTIERE #  |
| | # <i>Elective courses</i> | FONDAMENTI DI ECONOMIA E VALUTAZIONE ECONOMICA DEI PROGETTI  |

Laurea Magistrale (Master of Science)



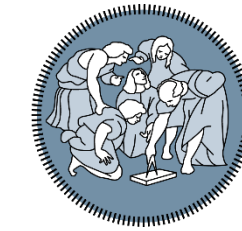
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The 2-year Master of Science programme aims at strengthening the basic education provided by the Bachelor programme and, at the same time, achieving advanced knowledge of the Civil Engineering **core subjects**.



The Civil Engineering education at Politecnico di Milano is founded on a long-standing and well-established tradition, that is one of the key factors in the successful work placement in the job market. At the same time, continuous updates and innovations make our Civil Engineering degree programmes highly topical and future-oriented.

MSc Tracks



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The 2-year Master of Science programme offers **seven tracks** within four main areas, which allow graduate students to **specialize** in different sectors.



STRUCTURAL ENGINEERING

structural design and assessment of civil and industrial buildings, large structures, bridges, structural components for industrial plants

- Design of New Structures
- Assessment of Existing Structures
- Advanced Structural Design
- Earthquake Engineering

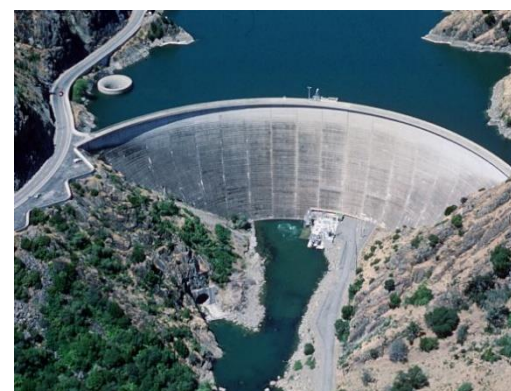


GEOTECHNICAL ENGINEERING

foundations, retaining structures, tunnels, embankments, underground services, slopes and excavations, renewable energy sources and disposal



AMBASSADOR ^{POLIMI}
SMART INFRASTRUCTURES



WATER ENGINEERING

free surface water and groundwater, use and management of water resources, land hydraulic protection, civil and industrial plants.



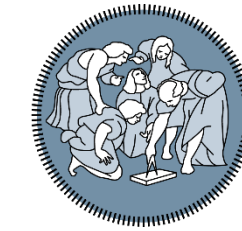
TRANSPORTATION INFRASTRUCTURES

design, construction, and management of roads, railways, harbours, airports.



The seven tracks – most of them entirely taught in English – allow graduate students to specialise in Structural Engineering, Geotechnical Engineering, Water Engineering, or Transportation Infrastructures. A new training programme allows students to obtain the certification of *PoliMi Ambassador in Smart Infrastructures*.

Professional opportunities



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Civil Engineers work in the field of constructions and infrastructures, which may require **advanced methodologies** to fulfill particular safety levels (large bridges and roofs, tall buildings, large tunnels and excavations, off-shore structures, and structures for energy production).

PROFESSIONAL FIRMS AND COMPANIES operating in the design, construction and maintenance of civil structures and infrastructure systems

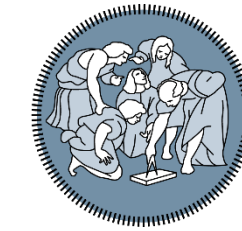
UNIVERSITIES and higher education research institutions

PUBLIC OFFICES responsible for design, planning and control of urban and land management

COMPANIES, BOARDS, CONSORTIA AND AGENCIES dealing with management and control of structural and infrastructural facilities

Graduates from Civil Engineering degree program (Master of Science) must pass a professional examination in order to be included in the Italian Professional Register of Civil and Environmental sectors.

International excellence



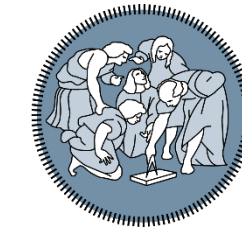
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According to the prestigious 2022 **QS World University Ranking**, in the field of Civil & Structural Engineering, Politecnico di Milano is ranked as the **1st in Italy**, **6th in Europe**, and **11th in the world**.



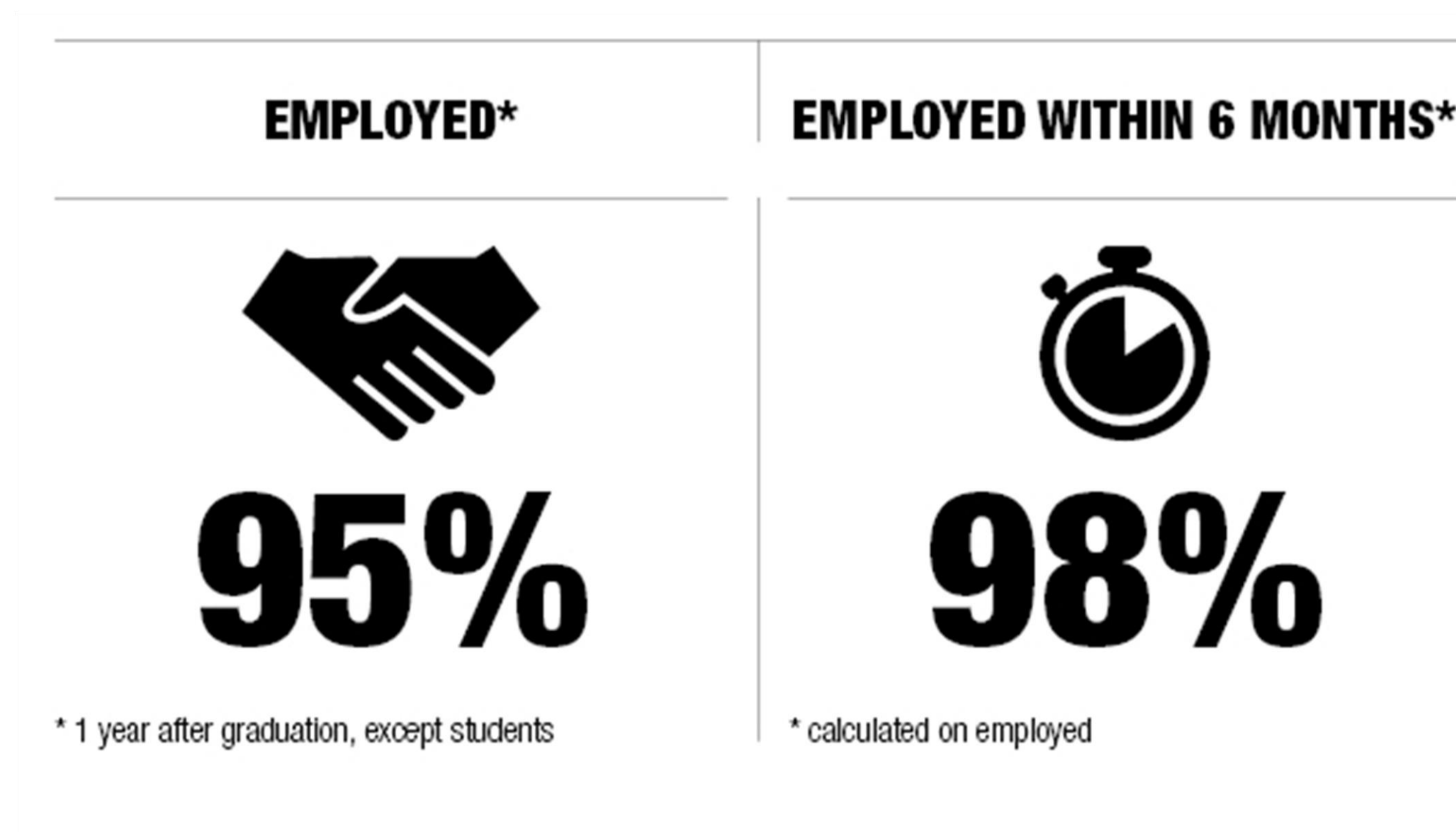
The appreciation of our Civil Engineering graduates in the job market is particularly high, being Politecnico di Milano ranked among the top universities in the world.

Employment rate in 2023



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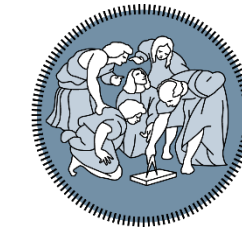
The Civil Engineer is **highly considered in the job market** and employment rates of graduates from Politecnico di Milano are very high.



Career Service – Politecnico di Milano (2023)

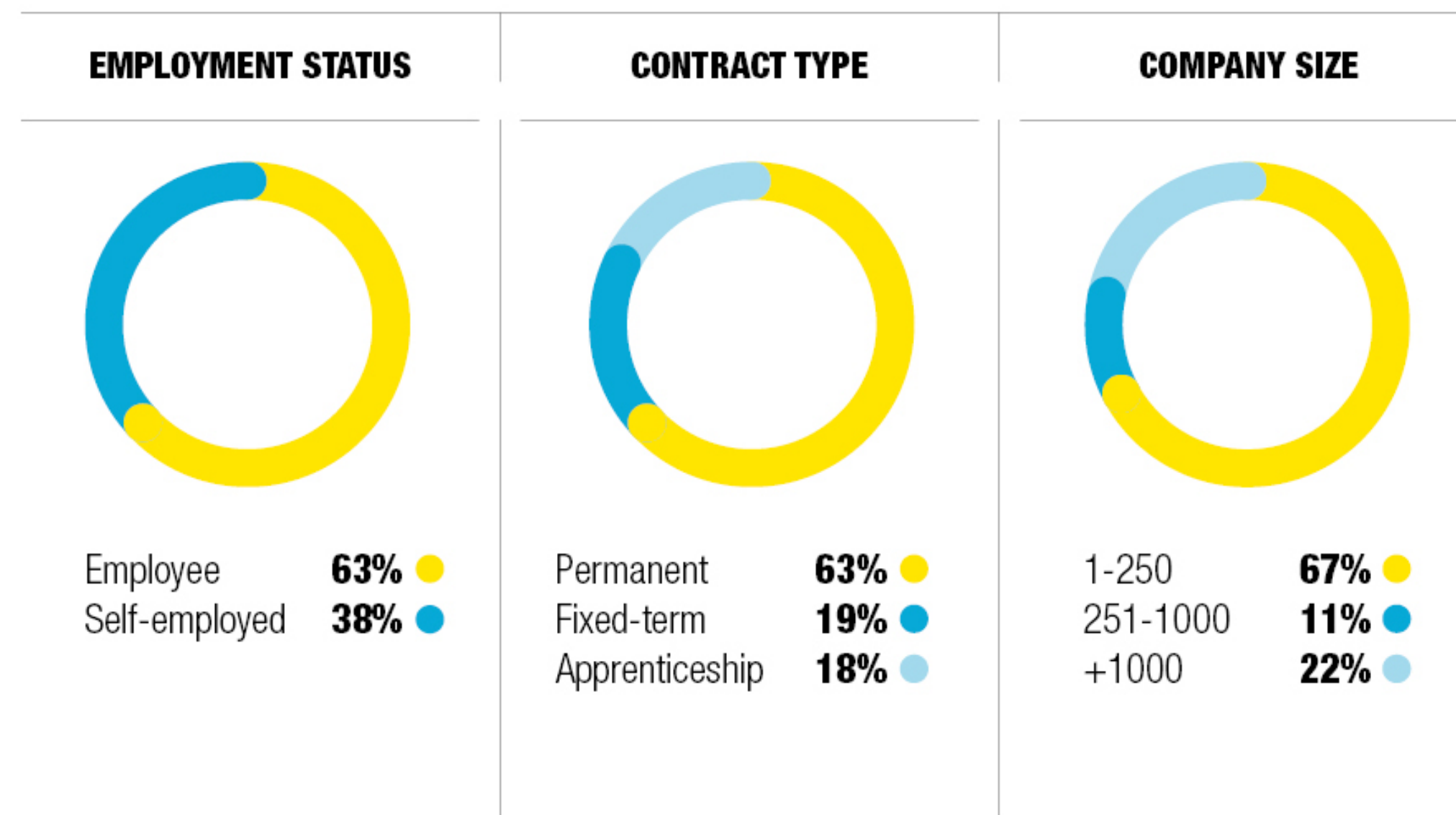
The enhancement of the educational offer, with the English track, strengthens the aptitude of graduates from Politecnico di Milano to effectively work in an international context.

Contracts and companies



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The employment statistics of Civil Engineering graduates at Politecnico di Milano prove the **excellent working positions** in companies of various type and size.



Career Service – Politecnico di Milano (2023)

Graduates from Politecnico di Milano work both in the private (95% Master of Science degree - 98% Bachelor of Science degree) and public sector (5% Master of Science degree - 2% Bachelor of Science degree).



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CIVIL ENGINEERING

<http://www.ingciv.polimi.it/en>