



**POLITECNICO
DI TORINO**

For over 150 years,
Politecnico di Torino has
been one of the most

prestigious public institutions at both national and international levels in the field of education, research, technology transfer and services in all sectors of Architecture and Engineering. Its long history demonstrates how the University has grown into a focal point for education and research in Italy and in Europe.

Today, Politecnico di Torino is an internationally recognized Research University which attracts students from 120 countries and runs about 800 projects per year in cooperation with businesses, public and private institutions, local organizations. The Specializing Master's Programmes and Lifelong Learning School is a centre of excellence which defines ground-breaking educational policies and addresses the demands of the economic context. The School's programmes are designed to meet the need for high-level technical training that boosts the knowledge base already acquired by students during the traditional degree paths. The programmes also actively address the constantly changing requirements of the world of work, support and develop students' competitiveness and entrepreneurial skills.

The School addresses the needs of scientific and technological innovation expressed by industry and the service sector. It designs and implements tailor-made training programmes for recent graduates, newly employed staff and senior professionals. To this end, the School has built partnerships with other Italian and international universities, as well as with public bodies and major corporations.

The programmes allow participants to acquire on-the-job training thanks to the opportunity to gain experience in a company, in Italy or abroad. The Master's programmes and training courses are intended for Italian and international students, since they are consistent with the University's internationalization process and preserve its traditional connection with the local community.



2nd Level Specializing Master's Programme in Sports Engineering



**POLITECNICO
DI TORINO**

In collaboration with



Certified by





The Specializing Master's Programmes and Lifelong Learning School of Politecnico di Torino presents the 2nd level Specializing Master's Programme in "Sports Engineering".

The programme is offered in collaboration with "Scuola dello Sport – Sport e Salute S.p.A." and "Città Studi S.p.A" and it is certified by "Johan Cruyff Institute".

Sports engineering is a multidisciplinary science which requires expertises in different fields: from materials science to meteorology, from ICT to biomechanics, from sensors development to statistics, from nutrition to sports medicine.

To achieve outstanding performance, an athlete needs the contributes of an entire team, which must successfully communicate by speaking a common language.

The purpose of the programme is to train experts that can successfully face the multidisciplinary science represented by *sports engineering*.

The learning objectives of this programme can be classified in two main categories:

- 1) **Material and processes:** the students will learn how to select materials and processes for state-of-the-art sportswear and sportsgear and they will be able to identify new needs and develop new products and services to improve athletes performance and safety;
- 2) **Products and services:** the students will develop their skills for sports performance analysis. They will learn how to design data management and sports analysis systems to support managers, coaches and athletes with the most advanced training systems and to improve audiences experience.

The teaching programme is structured as follows:

- 10 courses - compulsory (38 credits - 380 hours);
- Internship - compulsory (22 credits - 550 hours);
- 1 online course in "Sport Management Fundamentals" certified by Johan Cruyff Institute - optional (60 hours);
- 1 week at "Giulio Onesti" Olympic Center in Acqua Acetosa with CONI experts
- 4 Top Seminars - optional (20 hours)

Duration: 12 months

Language: English

ECTS (European Credit Transfer System): 60 (including classes, practical training and project work).

Format: full time

Campus: The programme will be hosted by the campus of Citta Studi in Biella and by the Campus of Politecnico di Torino, Lingotto.

Who can attend: The programme is addressed to graduate students having completed a Master's degree programme (or equivalent title) in the areas of studies of Engineering, Biology, Physics, Chemistry, Medicine, Mathematics, Sport science, Economics, Environmental science, Statistics, Geology and Geography .

COURSES	ECTS	HOURS
Sport Research Methods	4	40
Sport Psychology and Sport Development	4	40
Sensors and Measurements for Sport Engineering	2	20
Sport Biomechanics	4	40
Sport Physiology	2	20
Materials and Design for Sportswear and Sports Equipment	4	40
Sport Meteorology & Environmental Physics for Sports	3	30
Sport Bioengineering	4	40
Sport Performance Analysis	5	50
Bio-fluid Mechanics & Computational Fluid Mechanics for Sport	4	40
Internship	22	550
Totals	60	930

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