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Governance & Upskilling for a  
Stronger Bioeconomy

# Case Studies in Bioeconomy education, training and skills development

Case study sample: Higher technical  
Institutes (ITS)

ITALY

UNIBO



Funded by  
the European Union

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[info@biogov.net](mailto:info@biogov.net)

[www.biogov.net](http://www.biogov.net)



## 1 Abstract

The Higher Technical Institutes (ITS) are specialized schools offering two-year post-diploma courses as an alternative to university education. These programs aim to train higher technicians capable of entering strategic sectors within the economic-productive system, bringing with them highly specialized skills and innovation capacity. Notably, 40% of the total course hours are dedicated to internships in companies.

## 2 Target Groups

High school post-diploma students.

## 3 Case Study Category

Bioeconomy education, training and retraining in Vocational Education and Training (VET).

## 4 Training Provider

ITS foundations, ITS Academy.

## 5 Region

All Italian regions.

## 6 Language

Italian.

## 7 Objectives of the education Format

Complementing education for professionals.

## 8 Final objective of the education format

ITS courses are created in collaboration with companies, universities, research centres and local bodies. The goal is to develop new skills in technological areas considered strategic for the country's economic development and competitiveness.

## 9 Scope and context of the education format

The I.T.S. constitute the non-university tertiary training segment that responds to the demand of companies for new and advanced technical and technological skills to promote innovation processes. The courses are usually divided into 4 semesters (1,800/2,000 hours) and can last up to 6 semesters.

The courses are skill-oriented rather than subject-based, focusing on the ability to apply knowledge effectively towards achieving practical goals. ITS emphasizes learning-by-doing, project work, problem-solving, and design thinking as key teaching approaches.

At least 50% of lecturers are industry professionals made available by companies that collaborate with ITS, bringing their daily work skills and technologies directly into the classroom.

The model draws inspiration from successful frameworks in other European countries, such as the German Fachhochschulen, Swiss Universities of Applied Sciences, and the French Brevet Technicien Supérieur or Diplôme Universitaire de Technologie.

## 10 Specific Skills and competencies addressed

Technical competencies

Valorisation competencies

Transversal competencies

The ITS courses are divided into 6 areas defined at national level, considered strategic for the development of our country:

- Energy efficiency
- Sustainable mobility
- New technologies of life
- New technologies for Made in Italy
- Innovative technologies for cultural assets and activities – Tourism
- Information and communication technologies

## 11 European Qualification Framework level/s

Level 5.

## 12 Main benefit of the participant

The primary benefit for participants is the attainment of the Diploma of Higher Technician upon completing the course, which is certified at the V level of the European Qualifications Framework (EQF). To facilitate recognition at both national and European levels, the qualification is complemented by the EUROPASS diploma supplement. These diplomas are issued by the I.T.S. reference institution following a national model.

## 13 Main cost categories considered

The financing of ITS courses has historically been supported by annual programs and co-funded through the Regional Operational Program (Por) of the European Social Fund (ESF) for the period 2014-2020. Moving forward, funding will be sourced from the Higher Technological Education Fund and distributed to the Regions, which, in turn, will

allocate it among individual Institutes. A 5% share of the fund will be dedicated to the implementation of national system measures, including monitoring and evaluation. In 2022, a total of EUR 48,355,436.00 was allocated, with Regions co-financing 30% of the costs to cover logistics, personnel, and the production of contents and materials.

## 14 Importance and impact

Since its foundation, 19,137 students have been enrolled in active courses. ITS partnership is composed of 3260 partners, among which are 1330 companies and 146 business associations.

## 15 Relevance (of the format)

ITS courses are created in collaboration with companies, universities, research centers and local bodies to develop new skills in technological areas considered strategic for the country's economic development and competitiveness.

## 16 How can it inspire BioGov.net (Why was it designed in this specific way / what are the success factors?)

ITS courses are operational in all Italian regions, comprising a network of 130 ITS with a total of 726 active courses.

As of the estimates in 2022, the ITS Academy achieved its highest-ever employment rate at 86.5%, showcasing a remarkable consistency of over 93%. This achievement is marked by growth in permanent contracts and apprenticeships.

The ITS model offers an integrated approach closely aligned with the economic and productive sectors, contributing to the enhancement of human capital and bolstering the national and local production systems

As the monitoring shows, ITS confirm their strength in terms of employability, training and from a social point of view. This is possible thanks to a dynamic model characterized by organizational and didactic flexibility, by a governance network built together with companies, by the ability to intercept innovation, in particular in terms of the use of enabling technologies specific to the Industry 4.0 plan, by coherent research on learning methodologies and acquiring skills for new jobs.

## 17 Data sources

- **Online resources:** <https://www.miur.gov.it/percorsi-its/>  
<https://www.indire.it/progetto/its-istituti-tecnici-superiori/numeri-its/>
- **Resource persons:** -
- **Other sources, if any:** -

