

1. Title of the certificate ^(A)

Diploma di Istruzione Tecnica
Indirizzo CHIMICA, MATERIALI E BIOTECNOLOGIE
Articolazione "CHIMICA E MATERIALI"

^(A) In the original language

2. Translated title of the certificate ^(B)

Upper secondary education diploma – Technical schools
CHEMISTRY, MATERIALS AND BIOTECHNOLOGIES
Specialization: "CHEMISTRY AND MATERIALS"

^(B) If applicable. This translation has no legal status.

3. Profile of skills and competences (**)

On completion of the education/training pathway, the holder of the certificate is able to:

Skills common to all technical schools

- use the vocabulary and expressions of the Italian language based on communication needs in different contexts: social, cultural, scientific, economic, technological;
- establish links between local, national and international cultural traditions, in a cross-cultural perspective and for the purposes of study and work mobility;
- use the cultural tools and methodologies acquired to take on a rational, critical, creative and responsible attitude towards reality, the phenomena and problems encountered, also for lifelong learning purposes;
- use and develop visual communication and multimedia tools also with reference to the expressive strategies and technical tools of online communication;
- command the English language and, if applicable, another EU language and use the sectorial language related to the education pathway in order to interact within various communicative and professional contexts, at level B2 of the Common European Framework of Reference for Languages (CEFR);
- use the language and methods of mathematics to organise and adequately evaluate qualitative and quantitative information;
- identify and apply project management methods and techniques;
- write technical reports and document individual and group activities with regard to specific work situations;
- identify and use communication and team-working tools as appropriate to the sector organizational and professional contexts.

Skills of the *Chemistry and Materials* specialization

- collect and analyse data of an observed phenomenon and express the results thereof quantitatively and qualitatively using fundamental and derived quantities;
- find and manage information to carry out experiments;
- use the concepts, principles and models of chemistry and physics to interpret systems and their transformations;
- be aware of the technology potentials and limits in the cultural and social fields of application;
- take part in planning of work and quality control activities related to chemical and biotechnological processes;
- prepare chemical and biotechnological projects and manage laboratory activities;
- check projects and activities applying environmental protection and safety regulations in force.

The "Chemistry and Materials" specialization enables students to acquire thorough knowledge and skills, via laboratory activities, of the methods of preparation and characterisation of chemical systems. It also focuses on topics like development, creation and control of chemical and biotechnological projects, and design, management and control of chemical plants.

4. Range of occupations accessible to the holder of the certificate

The certificate holder can work as a mid-level employee in chemical-industrial engineering companies and pharmaceutical companies, businesses engaged in chemical treatment of materials, companies or local bodies working in the chemical-industrial or chemical-biological sectors, environmental control and monitoring and the application of decontamination techniques and technologies and related biotechnologies, in the following positions:

- chemical analysis laboratory technician
- scientific and research laboratory operator in several sectors (chemical, pharmaceutical, cosmetics, food, petrochemical)
- pharmacy technician in public and private hospitals;
- technician working in forensic laboratories (anti-adulteration unit and criminal police);
- water control and purification technician;
- analysis lab technician in the biochemical, bromatological (food analysis), chemical, chemical-clinical, pharmaceutical-cosmetics and galvanic (for the eyewear industry, etc.) fields;
- quality control/R&D laboratory technician in the chemical, pharmaceutical, cosmetics, food, petrochemical industry;
- analysis and control technician in the field of cultural heritage and restoration;
- chemical plant management and safety technician;
- process quality technician;
- sales and customer care operator of chemical products and scientific equipment.

Furthermore, he/she can work as a freelancer, in compliance with the applicable law, as:

- consultant in environmental, noise, air, water, gas, liquid and solid production waste pollution, accident prevention and reclamation of the environment surrounding factories and outdoor job sites

5. Official basis of the certificate

Name and status of the body awarding the certificate (***)	Name and status of the national/regional authority providing accreditation/recognition of the certificate Ministry of Education, University and Research www.istruzione.it
Level of the certificate (national or international) EQF level 4	Grading scale / Pass requirements State examination. Final grade out of 100. The full scale is used. Minimum passing grade to obtain the certificate: 60/ 100 A final grade of 100/100 cum laude can also be obtained.
Access to next level of education/training <ul style="list-style-type: none">• Higher Technical Education and Training (IFTS)• Higher Technical Education (ITS)• Universities• Military Academies• Higher Level Arts and Music Education (AFAM)	International agreements
Legal basis Decree of the President of the Republic no. 88 of 15 March 2010	

6. Officially recognised ways of acquiring the certificate

Description of education/ vocational training received	Percentage of total education/ training programme (%)	Duration (hours/weeks/months/years)
School-/training centre-based		Standard learning: 1056 hours/year for 5 years
Workplace, internship / work placement / apprenticeship or school-work alternation		The certificate holder can have completed school-work alternation, internship, work placement or apprenticeship pathways and activities documented and officially recognised for the acquisition of the certificate.
Accredited prior learning		
Total duration of the education/training leading to the certificate		5 years
Entry requirements Lower secondary school leaving diploma.		
Additional information Yearly school hours are divided into mandatory subjects and activities and optional subjects if provided for in the Educational Plan drawn up by each school. Schools can allocate a percentage of the total hours of the national study plans (up to 20% in the first two years, 20% in the third and fourth years and 20% in the fifth year) to tailor curricula to local needs. Schools can set up a scientific committee made up of teachers and work experts. During the 5 th year, a non-language-related subject is taught in English. Activities and modules related to "Citizenship and Constitution" are envisaged in the historical-geographical and historical-social fields.		

Details regarding the School/Certificate holder

School awarding the certificate:

PDTF02000E - ITI MARCONI-PADOVA

Name of the holder of the certificate:

Attachment of certificate no.:

(*) Explanatory note

This document is designed to provide additional information about the specified certificate and does not have any legal status in itself. The format of the description is based on the following texts: Council Resolution 93/C 49/01 of 3 December 1992 on the transparency of qualifications, Council Resolution 96/C 224/04 of 15 July 1996 on the transparency of vocational training certificates, and Recommendation 2001/613/EC of the European Parliament and of the Council of 10 July 2001 on mobility within the Community for students, persons undergoing training, volunteers, teachers and trainers.

More information available at: <http://europass.cedefop.europa.eu>

© European Communities 2002

() The present document does not constitute/replace certification of the competencies of the certificate holder**

(*) The reference data of this supplement are indicated in the last box**