



## INDUSTRIAL CHEMISTRY, POLYMERS AND BIOPOLYMERS

**Study Program location:** Bergamo

**Duration:** 2000 Hours

**Goal of the program:**

The Industrial Chemistry, Polymers and Biopolymers program trains a proficient specialized in chemical processes applied to the development of products in the field of materials, construction, textiles, paints, plant engineering with a particular focus on the polymer and biopolymer sector. The courses stem from the collaboration with the Sebino Gasket Manufacturers Association to meet the employment needs of the Sebino rubber district, named in 2019 as the best district for growth performance and profitability in Italy (source: Eleventh Annual Report on the economy and finance of industrial districts 2019 – Intesa San Paolo).

**Career opportunities (Possible Departments):**

- Laboratory
- Research and Development
- Quality control of rubber compounds
- Raw material control
- Commercial
- Mechanical testing laboratory
- Tests
- Compound production
- Technical drawing and product industrialization
- Product Release Tests
- PTFE extrusion laboratory



<b>SUPERIOR SPECIALIST FOR INDUSTRIAL CHEMICAL PRODUCTION, POLYMERS AND BIOPOLYMERS</b>			
REALIGNMENT	<b>Name of the discipline</b>	<b>Hours</b>	
	GENERAL CHEMISTRY STOICHIOMETRIC FUNDAMENTALS	32	
	ORGANIC CHEMISTRY	32	
	MATHEMATICAL PHYSICS	48	
	ETHICS, SOFT SKILLS OF BUSINESS COMMUNICATION	12	
	ENGLISH LANGUAGE	40	
	FUNDAMENTALS OF COMPUTER SCIENCE	48	
<b>Total realignment hours</b>	<b>212</b>		
MODULES	<b>Name of the discipline</b>	<b>Hours</b>	
	<u>ECONOMICS AND BUSINESS ORGANIZATION</u>		
	MARKETING	32	
	BUSINESS PLANNING	16	
	CIRCULAR ECONOMY AND TECHNOLOGY TRANSFER	48	
	BUSINESS ORGANIZATION, LEAN PRODUCTION	42	
	SAFETY AND ENVIRONMENTAL LEGISLATION	16	
	<u>BASIC CHEMISTRY</u>		
	GENERAL CHEMISTRY	30	
	METAL CHEMISTRY	30	
	ORGANIC CHEMISTRY	40	
	CHEMISTRY OF ORGANIC AND INORGANIC INGREDIENTS OF FORMULATIONS	40	
	INSTRUMENTAL CHEMICAL ANALYSIS AND MATERIAL CONTROL	48	
	<u>MATHEMATICS AND APPLIED PHYSICS</u>		
	MECHANICAL AND ELECTRICAL PROPERTIES OF MATERIALS	48	
	MATHEMATICAL METHODS FOR CHEMISTRY	50	
	CHEMICAL PLANT CONTROL INSTRUMENTS	72	
	LINEAR SYSTEMS	48	
	THERMODYNAMICS	40	
	HEAT TRANSFER	32	
	TRANSPORT PHENOMENA	48	
	<u>INDUSTRIAL CHEMISTRY</u>		
	CHEMISTRY OF POLYMERS AND THEIR ADDITIVES	30	
	CHEMISTRY OF RUBBER AND PLASTICS	30	
	CHEMISTRY AND SURFACE TREATMENT PROCESSES	44	
	BIOPOLYMERS	36	
	CHEMISTRY OF PAINTS AND THEIR FORMULATIONS	24	
	ENHANCEMENT OF SECONDARY RAW MATERIALS	36	
	<u>TECHNOLOGIES 4.0</u>		
	2/3D CAD/CAM	48	
	INDUSTRIAL AUTOMATION	48	
	FINITE ELEMENTS AND THEIR APPLICATIONS	46	
	CHEMICAL PLANTS 4.0	72	
	CHEMICAL TECHNOLOGIES OF RUBBER AND PLASTICS	42	
	PHASES, PROCESSES AND TECHNOLOGIES FOR THE PROCESSING OF TECHNO POLYMERS	30	
	APPLICATIONS OF ELASTOMER IN INDUSTRIAL SECTORS	12	
	<b>Total</b>	<b>1.178</b>	
	<b>TRAINING</b>	<b>822</b>	
	<b>Total with training</b>		<b>2.000</b>