UNIVERSITÀ
DEGLI STUDI
DI MILANO

Master's degree programme in

Safety assessment of xenobiotics and biotechnological products

FACOLTÀ DI

Scienze del Farmaco

Applications and admissions

Open, subject to entry requirements.

Admission requirements

- Graduates with an Italian degree (ex. DM 270/04 or equivalent ex. DM 509/99) from one of the following classes: Biotechnologies (L-2) and Pharmacy (L-29).
- Graduates from areas other than the above listed provided they have earned a certain number of credits in specific scientific-disciplinary sectors specified in the Manifesto degli Studi (https://safetyassessment.cdl.unimi.it/en/enrolment)
- Students with foreign qualification recognised as equivalent may access to the Master of Science in Safety assessment of xenobiotics and biotechnological products if they can demonstrate background knowledge and skills in biology, chemistry, biochemistry, pharmacology, toxicology and physiology, equivalent to those listed above.

Students meeting the above minimum requirements are invited to an interview for admission (in English) with the Commission for Admittance to the Master, composed by teaching members appointed by the Teaching Board. The interview, done remotely via electronic devices if necessary, is aimed at verifying the above mentioned skills and the knowledge of the English Language equivalent to B2 level.

Objectives

The Master course in Safety assessment of xenobiotics and biotechnological products provides specific knowledge in the analysis and the assessment of risk, taking into account the current international regulations. The students will acquire the knowledges necessary to initiate research on the novel methodologies to be applied in the field of risk assessment. The Master provides the methodological background, knowledge and skills necessary to apply current methodologies and generate novel protocols, to acquire competence in problem-solving, to assess risks arising from production and use of chemicals and biotechnological products, through integrated training in legislation, chemistry, toxicology and pharmacology, biotechnology, and risk analysis.

The master degree in Safety Assessment of Xenobiotics and Biotechnological Product (SAXBi) is the only master degree certified at the European level for becoming risk assessors according to the Standard UNI EN 16736 and to the AICQ SICEV Regulation RG 06-1 that well define the formation for risk assessors.

Career prospects

The professional profiles generated will be employed by:

- public administrations, for control, implementation and management of human health and environmental protection;
- industry Associations (Food, Cosmetics, Pharma, Chemicals);
  - pharma Companies in the sector of drug development;
  - biotech Companies;
  - food and Chemical Companies in Quality Control divisions;
  - bioremediation Companies;
  - innovative energy plants;
- contract research organization (CRO) for drug and chemical toxicity testing;
- public and private companies for implementation of appropriate risk assessment procedures;
- private sectors as consultants for risk assessment of chemicals, food contaminants, water and air pollutants;
- public and private research institutions;
- Universities and secondary schools.

Degree syllabus

I year

COMPULSORY LEARNING ACTIVITIES	ECTS PARTIAL	ECTS TOTAL
I semester		
Functional, Metabolic and Epigenetic Biochemistry		6
Methods of analysis of chemicals in water, air, biological fluids, tissues, food - Module: Methods of analysis of chemicals - Module: Physical-chemical characterization, identity	 3 3	6
Organ Physiopathology and Histopathology - Module: Organ Physiology and Pathology - Module: Lab of Comparative Histopathology	 7 3	10
II semester		
Bioremediation - Module: Environmental Microbiology and Biotechnological Remediation - Module: Laboratory of Cell Biology	 3 4	7
Biotechnology and pharmacotoxicology - Module: Biotechnology and Pharmacology - Module: Genotoxicology, Cancerogenicity, Immunotoxicology, Reproductive and Developmental Toxicity	 5 5	10
Regulatory aspects in toxicology - Module: Regulatory Aspects of Medicaments, Medical Devices and Health Products - Module: Legislation in European Union	 3 3	6
Annual		
Development Biology and Differentiation		6

II year

COMPULSORY LEARNING ACTIVITIES	ECTS PARTIAL	ECTS TOTAL
I semester		
Databases and Exposure scenarios - Module: Informatics and Database - Module: Statistics applied to Epidemiology	3 3	6
System Toxicity and Risk Assessment - Module: Risk Assessment - Module: System Toxicity	4 3	7
II semester		
Pharmacogenetics and Epigenetics in Toxicology		6
Annual		
Quantitative Chemical Structure and activity relationship - Module: In silico methods in toxicology - Module: Structural bioinformatics	5 5	10
Optional course		8
Other training activities		3
Additional language skills: Italian (it replaces other training activities for foreign students)		3
Thesis		29

INFO

Disciplinary classification: Pharmaceutical, veterinary and medical biotechnologies (LM-9)

Duration: 2 years (120 ects)

Attendance: recommended to the course, mandatory to the labs.

Location:
- via Golgi, 19 - Milan

For information:
saxbi@unimi.it

Websites:
safetyassessment.cdl.unimi.it
www.unimi.it/en

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For other information: www.unimi.it - Education