

First cycle degree in

# Biology of Human and Environmental Health

**Class:** L-13 - Biology



## CLINICAL AND MOLECULAR BIOLOGY



UNIVERSITÀ  
DEGLI STUDI  
DI PADOVA



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# Who am I?

- Master degree in Industrial Biotechnology
- PhD in Medical, Clinical, and Experimental Sciences
- Postdoctoral experience in molecular research at the Rheumatology Unit.
- Assistant professor in Clinical Pathology and Clinical Biochemistry at the Laboratory Medicine Unit





# Prerequisites

The student must have followed the courses and acquired the preparatory notions of Biology and Molecular Biology, Biochemistry, and Physiology.

## Target skills

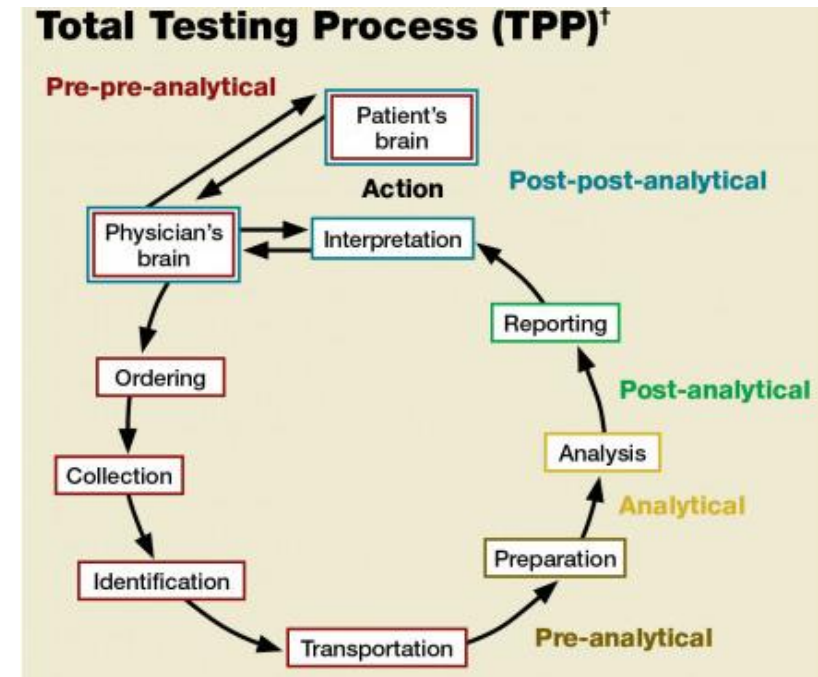
At the end of the course the student should know:

- how to deal with the quality processes of the clinical diagnostic;
- how and which molecular abnormalities can cause physiological disruptions that lead to several disease, with particular reference to the inflammatory and autoimmune response and neoplastic transformation;
- how to molecular research can help the clinicians in the clinical practice.



# Course Topics

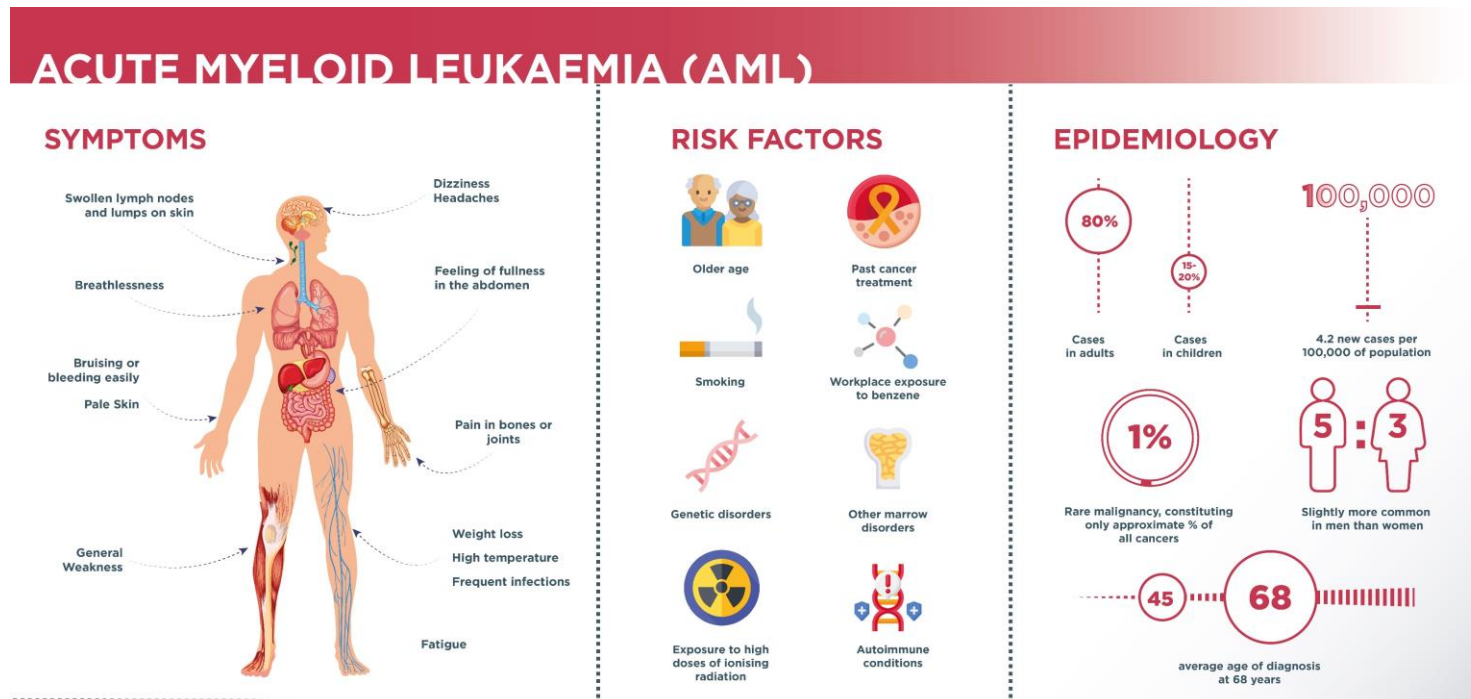
- Regulation of clinical diagnostics
  - **Main topic:** quality control processes



- Diagnostic techniques at the molecular level
  - **Topics Covered:** fluorescence in situ hybridization (FISH), ddPCR, next-generation sequencing, SIMOA (Single Molecule Array), ..

# Course Topics

- Molecular diagnostics of different human diseases
  - **Topics Covered:** Mechanisms of diseases and the integration of molecular biology into clinical diagnosis of inflammatory, autoinflammatory and autoimmune disorders and blood-related cancer.





# Teaching Approach

- Interactive Lectures with Multimedia Support
- Hands-on Data Analysis Experiences
- Case Studies and Group Discussions





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