Course: Introduction Medical Diagnostics — credits: 5

Course code	ELVH20GIMD
Name	Introduction Medical Diagnostics
Study year	2024-2025
ECTS credits	5
Language	English
Coordinator	J. Zijlstra
Modes of delivery	Education
Assessments	Introduction Medical Diagnostics - Written, organised by STAD examinations

Learning outcomes

Student
* Recognize the chemical structure and describe the biological properties and function of important macromolecules (saccharides, lipids, proteins, nucleic acids)
* Understand the central biological dogma of DNA – RNA – protein, and evaluate the benefits and restrictions of DNA versus protein analysis
* Explain the principles of elementary separation techniques (extraction, centrifugation, electrophoresis, chromatography)
* Explain the principles of bio-specific recognition of macromolecules (staining, enzymatic assays, immunoassays, hybridizing DNA probes)
* Describe the common used detection techniques and principles (spectrometry, fluorescence, chemiluminescence, radiography)
* Summarize important immuno-assays, and construct a flow-chart for the detection of a hormone with ELISA technique
* Summarize important molecular assays (including DNA sequencing), and construct a flow-chart for the detection of a genetic mutation with PCR technique

Content

Introduction in the principles of biochemical and molecular biological techniques for the measurement of molecules and cells in patients

Included in programme(s)

Exchange Biomedical Engineering (autumn)
Minor Biomedical Engineering

School(s)

Institute of Engineering

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