

## Faculty of Medicine



### HEMA3100 Methods in Haematological Biology

[20h+10h exercises]

**Teacher(s):** Bernard Chatelain, Véronique Deneys, Jean-Marie Scheiff (coord.)  
**Language:** French  
**Level:** Third cycle

#### Aims

Explanation of the methods used in morphology, immuno-haematology, blood transfusion and haemostasis. Teaching interpretation of the results in relationship with the clinical situations. Quality control and general organization in a Haematology Lab.

#### Main themes

Morphology (5 hours) :

- Automated counting of the blood cells
- Errors in an Haematological Morphology Lab
- Quality control (including the evaluation of an automated haematology counter)
- Microscopy : principles, special optical systems, electron microscopy
- General morphological methods : harvesting, fixation, differentiation,#
- Special morphological methods : cytochemistry, cytoenzymology, immunocytochemistry, autoradiography

Immuno-haematology (5 hours) :

- Blood groups
- Irregular anti-erythrocyte allo-antibodies
- Anti-erythrocyte auto-antibodies
- Pretransfusion cross-matching
- Flow cytometry : principles and applications

Transfusion (4 hours) :

- Blood donation
- Organization in a blood transfusion centre
- Red cell transfusion
- Labile and stable blood components
- Transfusion complications

Haemostasis (6 hours) :

- Routine tests in coagulation
- Specific quantitative analysis of factor VIII, von Willebrand, IX, XI, XII, and prenatal diagnosis of haemophilia and von Willebrand disease
- Specific quantitative analysis of factor I, II, V, VII, X
- Dysfibrinogenemia evaluation
- Thrombophilic evaluation
- Activation markers in haemostasis
- Screening and quantitative analysis of natural and pathological coagulation inhibitors
- Control of the efficacy of anticoagulant and anti-aggregation treatment
- Evaluation of the fibrinolysis and control of thrombolytic treatment

#### Content and teaching methods

Lecture and practice.

Practical teaching of the medical doctors and pharmacists in training, about the medical supervision of the emergency tests (haemostasis, blood transfusion and morphology)

**Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)**

Evaluation :

- written and oral examination (theory)
- practical evaluation after a 6 months training period