

## Course: Hematology en Clinical Immunology

credits: 5

|                     |                                   |                          |                                                                |
|---------------------|-----------------------------------|--------------------------|----------------------------------------------------------------|
| <b>Course code</b>  | BOVH26MDHEMAKLIN                  | <b>Modes of delivery</b> | Guest lecture                                                  |
| <b>Name</b>         | Hematology en Clinical Immunology |                          | Lecture                                                        |
| <b>Study year</b>   | 2026-2027                         |                          | Tutorial                                                       |
| <b>ECTS credits</b> | 5                                 | <b>Assessments</b>       | Clinical Immunology - Computer, organised by STAD examinations |
| <b>Language</b>     | Dutch, with parts in English      |                          | Hematology - Computer, organised by STAD examinations          |
| <b>Coordinator</b>  | P.A. Oude Weernink                |                          |                                                                |

### Learning outcomes

You explain in detail how the various white blood cells develop from stem cells, what functions the different cell types perform in the body, and what morphological and functional abnormalities are observed in patients.

You describe how a number of important chromosomal mutations (deletions, inversions, translocations) are involved in the development of acute and chronic leukaemias, which techniques and parameters are used for diagnosis, and what treatment options are available, including stem cell transplantation.

You explain which blood groups and screening procedures are important when preparing for and carrying out a blood transfusion, and apply this knowledge to real-world examples.

You explain the main characteristics, causes and mechanisms of autoimmune diseases, autoinflammatory diseases, and primary and secondary immunodeficiencies, and link this knowledge to the role of the immune system.

### Content

In Haematology, the focus will be on the function and abnormalities of white blood cells. Considerable attention will be paid to the molecular aetiology, diagnosis, classification and subsequent treatment of leukaemias. The recently introduced CAR T-cell therapy will be presented in a guest lecture by the UMCG. In addition, the practical aspects of blood transfusion will be discussed, including transfusion testing during pregnancy and childbirth.

The Clinical Immunology submodule offers an in-depth overview of conditions in which the immune system plays a central role, through lectures, seminars and a guest lecture. It covers autoimmune diseases, in which the immune system attacks the body's own tissues, and autoinflammatory diseases arising from an improperly regulated immune system. In addition, primary immunodeficiencies are covered: congenital abnormalities of the immune system and secondary immunodeficiencies, which arise due to external factors such as infections, medication or malignancies.

### Included in programme(s)

Major Medical Diagnostics

### School(s)

Engineering, Life Sciences & ICT