



Faculty of Health, Science and Technology  
Clinical Medicine

## Syllabus

### Methods in hematology, morphological cell biology and transfusion medicine

<b>Course Code:</b>	BLG004
<b>Course Title:</b>	Methods in hematology, morphological cell biology and transfusion medicine <i>Metoder inom hematologi, morfologisk cellbiologi och transfusionsmedicin</i>
<b>Credits:</b>	7.5
<b>Degree Level:</b>	Undergraduate level
<b>Progressive Specialisation:</b>	First cycle, has less than 60 credits in first-cycle course/s as entry requirements (G1F)

**Major Field of Study:**  
BLA (Biomedical Laboratory Science)

#### Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2026-01-30, and is valid from the Autumn semester 2026 at Karlstad University.

#### Prerequisites

At least 30 credits completed in the Biomedical Scientist Programme, including the course Introduction to the biomedical scientist profession (4 credits) and registered for the course Transfusion medicine (3.5 credits). An equivalence assessment can be made.

#### Learning Outcomes

The aim of the course is for students to acquire the ability to explain, apply, and interpret results from the laboratory techniques used in hematology, morphological cell biology, and transfusion medicine.

Upon completion of the course, students should be able to:

##### Knowledge and understanding

- describe basic blood group serological analysis methods,
- reflect upon how different erythrocyte antibodies affect the choice of analysis method, and
- describe the preparation of tissue samples for histopathological analysis.

##### Competence and skills

- use a microscope to quantify and morphologically identify hematological cells,
- use a counting chamber and microscopy to quantify hematological cells,
- demonstrate the ability to section and mount microscopic tissue samples,
- perform cytochemical staining and immunohistochemistry, and
- identify antigens on erythrocytes and alloantibodies against erythrocytes using immunohematological methods.

##### Judgement and approach

- critically evaluate and interpret analysis and examination results from both technical and medical perspectives, and
- reflect upon quality assurance, including how pre-analytical errors affect the quality of test results.

#### Content

Instruction is in the form of laboratory sessions and lectures.

The laboratory sessions include methods in hematology, morphological cell biology, and transfusion medicine. The laboratory sessions cover:

- Blood smear for identification of hematologic cells
- Quantification of cells using a counting chamber
- Sectioning and staining of tissue samples
- Microscopy with identification of cells
- Immunohematological methods for identifying antigens on erythrocytes and alloantibodies against erythrocytes

#### **Reading List**

See separate document.

#### **Examination**

Assessment is based on mandatory attendance and active participation in the laboratory sessions, written individual lab reports, and seminars.

If students have a decision from Karlstad University entitling them to Targeted Study Support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

#### **Grades**

One of the grades Pass with Distinction (VG), Pass (G), or Fail (U) is awarded in the examination of the course.

#### **Quality Assurance**

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

#### **Course Certificate**

A course certificate will be provided upon request.

#### **Additional information**

The local regulations for studies at the Bachelor's and Master's levels at Karlstad University stipulate the obligations and rights of students and staff.