| CLINICAL HAEMATOLOGY | |
|---|---|
| **GENERAL INFORMATION** | |
| Course teacher | Asst. Prof. Vlatka Periša, MD, PhD |
| Associates | Asst. Prof. Maja Bogdan, MD, PhD<br>Asst. Prof. Jasminka Rajc, MD, PhD<br>Asst. Prof. Mirjana Suver Stević, PhD<br>Marija Milić, MMedBiochem, PhD<br>Stefan Mrđenović, MD, PhD<br>Danijela Mjeda, MD<br>Zdravka Krivdić Dupan, MD |
| Study programme | Graduate University Study of Medical Laboratory Diagnostics |
| Course status | mandatory |
| Year of study, semester | 1st year, 1st semester |
| ECTS credits | **5** |
| Form of teaching (number of classes) | Lectures: 30; Seminars: 30 |
| Expected number of students attending the course | 20 |

**COURSE DESCRIPTION**

**Course objectives**

To train the student to be able, based on modern knowledge in hematology, to critically evaluate and select an appropriate hematological examination in diagnosing diseases, solving differential diagnostic problems, following therapeutic protocols and scientific research work.

**Course entry requirements and competencies needed for the course**

Completed courses at the Undergraduate Study Programme of Medical Laboratory Diagnostics or equivalent bachelor's degree (baccalaureate)

**Learning outcomes at study programme level**

**1.1, 1.2, 2.1, 2.2, 2.3, 2.6, 2.7, 3.1, 3.2**

**Expected learning outcomes at course level**

After attending lectures, seminars, independent study, and passing the exam, students will be able to:

1. recommend different hematological tests in diagnosing diseases, solving differential diagnostic problems and monitoring therapeutic protocols.
2. critically assess the changes in the function of individual organs and systems and the diagnostic procedures used to monitor them.
3. choose the laboratory analysis required for a specific diagnostic procedure.
4. recommend an adequate method of laboratory hematological analysis.
5. organize work in hematology and oncology clinical or research laboratories.

**Course content**

**Lectures:** Normal haematopoiesis. Bone marrow structure and function. Immune system structure and function. Laboratory tests in haematology. Flow cytometry. Cytological and histological diagnostics. Laboratory testing of haemostasis. Immunological tests. Cytogenetics in haematology. Nuclear haematology. Cell cultures *in vivo*. Role of viruses in haematology. Haematopoietic stem cells disorders. Granulocyte disorders. Monocyte and macrophage disorders. Lymphocyte and plasma cells disorders. Leukaemia. Laboratory techniques used in diagnosing lymphoproliferative disorders. Laboratory monitoring of cytostatic treatment. Diseases caused by haemostasis disorders. Haemorrhagic syndromes caused by thrombocytopenia and coagulopathy. Haemophilia.
**Seminars**: Immunophenotyping; Basic divisions of malignant hematopoiesis tumors; Diagnosis of chronic myeloproliferative disease; Laboratory examination of hemolytic anemias. Diagnosis of

chronic lymphocytic leukemia; Microscopic diagnosis of malaria, Leishmeniasis, trypanosomiasis, babesiosis.

**Forms of teaching**

Lectures and seminars

**Students' responsibilities**

Attendance is obligatory throughout all course forms, and the student has to attend all the exams. Student absence of up to 30% is considered acceptable in each teaching form. Practical work and seminars that were not completed have to be taken in the form of colloquiums.

**Monitoring students' work *(Connecting learning outcomes, teaching methods and evaluation)***

Seminar paper, Written exam, Oral exam

| Teaching activity | ECTS | Learning outcome | Student activity | Evaluation methods | Grade points | |
|---|---|---|---|---|---|---|
| | | | | | Min. | Max. |
| Attending classes (lectures, seminars) | 1.5 | 1-5 | Attendance,<br><br>Seminar paper | Attendance records<br>Writing and presenting seminar paper | 1<br><br>10 | 5<br><br>20 |
| Final exam | 3.5 | | Studying for final exam | Written exam | 20 | 45 |
| | | | | Oral exam | 19 | 30 |
| **Total** | **5** | | | | **50** | **100** |

*Evaluation of written part of final exam:*

| Percentage of correct answers (%) | Grade | Grade points |
|---|---|---|
| 60% - 70% | Sufficient (2) | 20 |
| 71% - 80% | Good (3) | 25 |
| 81% - 90% | Very good (4) | 35 |
| 91% - 100% | Excellent (5) | 45 |

*Formulating the final grade:*

Grade points achieved in classes are combined with points achieved in the final exam. Grading system involves absolute grading and represents one's final achievement. Grades are numerically expressed as follows: A – excellent (5): 80-100 grade points; B – very good (4): 70-79.99 grade points; C – good (3): 60-69.99 grade points; D – sufficient (2): 50-59.99 grade points

**Assigned reading (available in the library and in other media)**

| Title | Number of copies in the library | Availability in other media |
|---|---|---|
| Labar B et al. Hematologija. Zagreb, Školska knjiga, 2017 | 7 | |
| Mihić D, Mirat J, Včev A et al. Interna medicina. 1. izdanje. Osijek, Studio HS internet d.o.o.; 2021. | 24 | |

**Further reading**

1. Hauptman E, Črepinko I. Osnove kliničke hematologije. ŠK, Zagreb, 1991.
2. Mc Kenzie. Clinical laboratory Hematology ed E Zeibig Pearson Education, Inc. Upper Saddle River, New Jersey, 2004.

**Quality assurance methods that ensure the acquisition of exit competencies**

Anonymous, quantitative, standardised students' opinion survey on the course and teacher's work, carried out by the Quality Assurance Office of the Faculty of Medicine in Osijek.

**Note**

E-learning does not enter the course of the subject but it is used in teaching and contains links to different pages, videos and audio materials available on the web pages.