

# Clinical Chemistry

**Courses:** (winter and summer semester)

Lecture : 28 hours  
Practical course: 36 hours

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## **Content:**

### Topics of lecture and practical course:

- Clinical and chemical diagnostics of the liver: metabolic parameters, photometry
- Diagnostics of acute coronary syndromes: CK, myoglobin, troponin
- Lipid metabolism: biochemical principles, disorder in metabolism, therapy goals, determination of cholesterol, HDL, LDL, TG
- Hematology I: blood count, clinical relevance, anemia, polycythemia, thrombozytopenia, cell count, blood slide
- Hematology II: differential blood count, clinical significance of the subpopulations, leukemia, myelodysplastic syndrome, lymphomas, blood slide, staining, differentiation
- Immunology and protein chemistry: immunoassay-methods, biochemistry und disorder of serum proteines, elektrophoresis
- Endokrinology und analytics of steroid hormones: physiology of the sexual hormones, estradiol and testosterone, determination with immunoassay
- Hemostaseology I: physiology, anticoagulation, quick-test, INR, aPTT
- Hemostaseology II: factor XIII analysis, primary hemostasis and bleeding time, antithrombin-determination, diagnostics of thrombophilia, factor V Leiden (APC-resistance) und APC-sensitivity-test (APC-ratio)
- Kidney, elektolytes und proteinuria-diagnostics: principles and clinical meaning, urine strips, protein und creatinin determination in the urine
- Diabetes mellitus: blood glucose, oGTT, HbA1c-test, creatinin determination, determination of glucose level and ketone bodies in the urine
- Principles of laboratory diagnostics and quality control: indications, reference range, sensitivity and specificity, accuracy, standardisation and guidelines

### Practical course - organisation:

3 hours per week

at the beginning of every course: test (has to be prepared with the script)

repetition of the theory

control of success (result paper has to be handed in)

### **exam:**

there is no general final exam,

the final mark consists of the results of all the tests and the course protocols,

in case of failure in a certain range of points, there will be an oral exam, otherwise the course has to be repeated