



Faculty of Health and Well-being

Kupittaa Campus, MedisiinaD (address: Kiinamylynkatu 10, Turku)

**INTERNATIONAL SEMESTER IN BIOMEDICAL LABORATORY SCIENCE 2019-2020**

<b>International Semester 2019</b>	Spring	Autumn		
<b>THEORY COURSES</b>	<b>ECTS</b>	<b>ECTS</b>	<b>Course no</b>	<b>Group</b>
Specimen Collection, POCT and Client Service, 8070148, self-study, eLearning	2	2	7073067	1 <sup>st</sup> year/1 <sup>st</sup> or 2 <sup>nd</sup> semester
Hematology 1, self-study, eLearning		2	7073115	2 <sup>nd</sup> year/3 <sup>rd</sup> semester
Research, Development and Innovation Competence in Nursing (KEHI, 2 ECTS in English)	2	2/5	7031496	3 <sup>th</sup> year/5 <sup>th</sup> semester
<b>PROFESSIONAL BASICS PRACTICE IN CLASSROOM SETTINGS, PRACTICE COURSES.</b> Please choose:	<b>ECTS</b>	<b>ECTS</b>	Spring max 13 ECTS Autumn max 16 ECTS	<b>Please note: 1 ECTS = 27 hours student work</b>
Clinical Biochemistry; automated analyzers	3	3	TH00BN80- 3001	2 <sup>nd</sup> year/4 <sup>th</sup> semester
Clinical Hematology I (autumn) or II (spring)	2	2	TH00BN80- 3001	2 <sup>nd</sup> year/3 <sup>rd</sup> or 4 <sup>th</sup> semester
Clinical Immunohematology	2		TH00BN80- 3001	2 <sup>nd</sup> year/4 <sup>th</sup> semester
Blood sampling and Point-of-Care-Testing	1-2	1-2	TH00BN80- 3001	1 <sup>st</sup> year/2 <sup>nd</sup> semester
Clinical Pathology		2	TH00BN80- 3001	2 <sup>nd</sup> year/4 <sup>th</sup> semester
Clinical Microbiology	2	1	TH00BN80- 3001	1 <sup>st</sup> year/1 <sup>st</sup> or 2 <sup>nd</sup> semester
Molecular genetics		3	TH00BN80- 3001	2 <sup>nd</sup> year/3 <sup>rd</sup> semester
Clinical Physiology (ECG registration)		1	TH00BN80- 3001	1 <sup>st</sup> year/1 <sup>st</sup> or 2 <sup>nd</sup> semester
Introduction to Biomedical Laboratory Scientist's profession in Hospital Lab	1	1	TH00BN80- 3001	Exchange students
Project work, presentation; international student exchange	1	1	TH00BN80- 3001	Exchange students
<b>Common courses for all exchange students</b>				
Finnish for Exchange students	3	3		Exchange students
Get Finternational	3	3		Exchange students

## CONTENTS OF THE THEORY COURSES

### **Specimen Collection, POCT and Client Service, 2 ECTS, self study, eLearning**

Students are aware of the impact of pre-analytical factors on the results of laboratory examinations. Students know why and how to collect and handle different clinical specimen carefully and safely. Students know the principles for the safety and well-being of the client and the surrounding during the specimen collection. Students are familiar with multi-cultural issues in the client work of social services and health care. They know how to act according to the guidelines, values and ethical principles of clinical laboratory work. Students know how to act in line with the principles of good service in client work and in collaboration with other professionals. They are aware of the quality management procedures of the laboratory. Students deepen their knowledge of specimen collection and are aware of the possibility of point of care testing in clinical laboratory work. Students know ways of implementing quality management in clinical laboratory work.

### **Hematology 1, 2 ECTS (only Autumn semester), self study, eLearning**

Students know the phases of haematopoiesis and know the principles of haematological examinations. Students are familiar with the methods of diagnosing haematological diseases, and know how haemostatic system works. Students are familiar with the quality system in the haematology laboratory. Students know the principles of the laboratory examinations securing the safety of blood transfusion and are familiar with the conditions of safe blood donation.

Students know the tasks and production phases of the blood cells and know the regulation of blood cell production. Students know the phases of haemostasis and know the methods for examining the function of haemostasis. Students know the morphology of healthy, mature blood cells. Students know the methods for finding out about the production of blood cells. Students know the principles of the analysis methods in the haematology laboratory and quality management.

### **Leadership, Management and Entrepreneurship in Social and Health Care (7031497 JOSTE) 2 ECTS**

Students will know how to actively participate in research, development and innovation processes. Students will gain the ability to assess and develop the quality of all the treatment process phases and will understand the importance of effective and successful activities in service development and their professional responsibility in ensuring the quality of treatment.

### **Research, Development and Innovation Competence (KEHI 2 op)**

Objectives of research and development activities.



## PROFESSIONAL BASICS PRACTICE IN CLASSROOM SETTINGS, PRACTICE COURSES

Students learn by working in learning laboratories following quality standards and safety laboratory practices.

### **Clinical Biochemistry; automated analyzers 3 ECTS**

Students rehearse using automated analysers in clinical biochemistry and know how to apply their skills in the assessment of biochemical examination results, the errors dependent on the specimen and the reliable function of the analysers. Students know how to work according to the quality manual and the instructions in place. Students can identify the phases of pre-analytics, analytics and post-analytics in clinical biochemistry work.

### **Clinical hematology I or II**

- Hematology I (Autum semester, 2 ECTS): Students can independently prepare a technically high quality blood film and know mature, healthy blood cells. Students know how to work with microscopes independently.
- Hematology II (Spring semester, 2 ECTS): Students know immature blood cells and can assess the alterations which are seen in the blood count in connection with blood diseases. Students can identify findings in an aberrant blood film.

### **Clinical immunohematology 2 ECTS**

Students know how to use the equipment for blood transfusion serology examinations and can under supervision carry out basic examinations in blood transfusion serology. Students know how to independently get results for blood type determination analyses.

### **Blood Sampling and Point-of Care-Testing 1-3 ECTS**

Student can independently carry out the specimen collection for different clinical specimens taking into account the requirements of pre-analytics and occupational safety. Student is able to answer for the safety and well-being of the client during the specimen collection. Student knows how to guide clients and take into account in their guidance the impact of pre-analytical factors on the results of the laboratory examinations. Student knows how to serve clients from other cultures. Student knows how to apply the principles of good service in customer work and in the collaboration with other professional groups.

### **Clinical Pathology 2 ECTS**

Students know the handling process of a histological specimen in the laboratory. Students master the tissue embedding technique, the tissue sectioning and the use of a microtome. Students are familiarised with immunohistochemical staining, they can identify the tissue components and know how to carry out histological and cytological staining and make a cytocentrifuge prepare. Students can tell apart benign cell changes from normal findings.

**Clinical microbiology I (1 ECTS) or II (2 ECTS)**

- Clinical microbiology I (Autumn semester, 1 ECTS): Students have the basic knowledge of the most common pathogenic microbes, know microbiological identification methods and know the microbiological instruments. Students know the basics of specimen collection for identifying microbes and know the correct procedure for obtaining a specimen from the larynx.
- Clinical microbiology II (Spring semester 2 ECTS): Students know how to obtain a high quality specimen from the larynx, rehearse the use of microbe cultivation and identification methods and train their skills in interpreting the results. Students know how to work abiding by the occupational health instructions of the microbiology laboratory.

**Molecular Genetics 3 ECTS**

The student knows the factors affecting DNA and RNA isolation. The student is aware of the chromosomal structure, inheritance disturbances and disturbance factors. The student knows the most important methods of gene and chromosomal research so well that he can absorb new methodological information and apply it to the diagnostics of patients with hereditary diseases. VNTR analysis, chromosome examinations, G-tracks, cell culture, PCR.

**Clinical Physiology 1 ECTS**

ECG registration.

**Introduction to Biomedical Laboratory Scientist's profession in Finland 1 ECTS**

Students get familiar with the Biomedical Laboratory Scientist's career in Finland e.g. visiting the hospital laboratories.

**Project work, Presentation, International Student Exchange 1 ECTS**

Students get familiar with giving a presentation in English.