Course: Urinary System — credits: 5

Course code	BOVP23MDURINEWEG
Name	Urinary System
Study year	2025-2026
ECTS credits	5
Language	Dutch, with parts in English
Coordinator	A.I.R. Spanjer
Modes of delivery	Assignment Practical / Training Tutorial
Assessments	Urologische Diagnostiek en Statistiek - Other assessment

Learning outcomes

You will name, describe and visualise the anatomy, histology and physiology of the urinary system by working with a fellow student to develop a patient case study using self-testing and clinical chemistry methods for creatinine and protein determinations on urine samples.

You apply basic statistical skills, including normal distribution and confidence interval, to datasets on creatinine and protein determinations and visualise results using Excel to assess data quality in terms of variability and reproducibility.

You correctly perform creatinine and protein determinations according to guidelines applying the theory of redox reactions, you understand the principles of spectrophotometry and resulting calculations and explain this both orally in a work meeting and in writing in a lab journal.

You plan and evaluate your own study work and redirect your learning, giving you ownership of your learning process, and you reflect in a reflection paper on collaborating with fellow students and the importance of studying effectively.

Content

In this module, you will study the anatomy, physiology and histology of a healthy and a diseased kidney using patient case studies. You do this by dissecting a kidney (macroscopic level) and by staining and viewing cut sections (microscopic level). In addition, you look for an (image of a) histological section of a kidney patient so that you can see the differences at the histological level. You collect the results of the corresponding assignments in your anatomy portfolio.

You then assume the role of medical analyst and study the effect of kidney damage in these patients in the laboratory by performing a protein and creatinine determination. You will learn to relate the results of the experiments back to the degree of kidney damage in a patient. Using Excel, you will learn to structure and visualise the data you generate. To interpret the structured data, you apply basic statistical skills to a dataset. To conclude, you will individually demonstrate that you can create a correlated calibration line and that you can visualise, structure and apply statistical tests to a dataset. You evaluate your study behaviour at the start of the module and make conscious adjustments during the module. At the end of the module, you reflect on your collaboration with fellow students over the past quarter.

DAS competencies

Competency	Level (I-IV)
Research	I
Experimentation	I
Development	
Management	I
Advise	
Instruction	
Leadership	
Self-management	I

Included in programme(s)

Major Medical Diagnostics

School(s)

Institute for Life Science & Technology

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