### Course Specifications
Valid as from the academic year 2015-2016

**Cellular Biological and Molecular Techniques for Biomedical Research**

(G000675)

<table>
<thead>
<tr>
<th>Course size</th>
<th>Credits 3.0</th>
<th>Study time 90 h</th>
<th>Contact hrs 30.0 h</th>
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**Course offerings and teaching methods in academic year 2018-2019**

A (semester 1) Dutch lecture 30.0 h

**Lecturers in academic year 2018-2019**

Favoreel, Herman DI04 lecturer-in-charge

Offered in the following programmes in 2018-2019 credits offering

- **Master of Veterinary Medicine in Veterinary Medicine (main subject Companion Animals)** 3 A
- **Master of Veterinary Medicine in Veterinary Medicine (main subject Horse)** 3 A
- **Master of Veterinary Medicine in Veterinary Medicine (main subject Pig, Poultry and Rabbit)** 3 A
- **Master of Veterinary Medicine in Veterinary Medicine (main subject Ruminants)** 3 A

**Teaching languages**

Dutch

**Keywords**

Cell biology, molecular biology, research tools, biomedical research

**Position of the course**

To gain an overview on and an insight in the different basic tools that are being used in cell biological and molecular aspects of biomedical research. This knowledge will enable students to smoothly enter a biomedical research environment.

**Contents**

The course starts with an introduction on the state of the art of the biomedical research, and a short overview of basic concepts of cell biology and molecular biology. Afterwards, different cell biological and molecular tools that are important in current biomedical research will be discussed. These tools comprise e.g. in vitro cultivation of cells (primary cells, cell lines, stem cells, cloning), microscopical techniques and micromanipulation, cell sorting methods, DNA-RNA-protein analysis tools (e.g. PCR, sequencing, transfections, recombinant protein technology, agarose and SDS polyacrylamid gel electrophoresis, Western-Southern-Northern blotting, in situ hybridisation, RNA interference, micro-arrays, transgenic animals).

**Initial competences**

A basic knowledge in cell biology/cytology, genetics, and biochemistry is required. Subscribing for this course is only possible after obtaining a bachelor degree in veterinary medicine or when enrolled in a GIT trajectory in veterinary medicine between the third bachelor and first master year.

For students who are not currently enrolled in the UGent veterinary medicine studies is subscription for this course only possible if they comply with the majority of final competencies of the bachelor in veterinary medicine degree and after approval of the curriculum commission.

**Final competences**

The final objectives comprise a thorough knowledge of the diverse commonly used cell biological and molecular tools for biomedical research. This should aid students to successfully make the transition to a biomedical working environment.

(Approved)
Conditions for credit contract
   Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract
   This course unit cannot be taken via an exam contract

Teaching methods
   Lecture

Learning materials and price
   Learning material comprises a syllabus, course notes, notes of the practical exercises, powerpoint presentations used during the courses (available via Minerva). Cost: 15 EUR

References

Course content-related study coaching
   During the theoretical courses, students will be guided in recognizing key aspects of the course.

Evaluation methods
   end-of-term evaluation

Examination methods in case of periodic evaluation during the first examination period
   Written examination with open questions, oral examination

Examination methods in case of periodic evaluation during the second examination period
   Written examination with open questions, oral examination

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation
   Examination during the second examination period is possible

Extra information on the examination methods
   Written exam with open questions, based on teaching material provided via the syllabus and during the courses (1/2 of the points).
   Oral exam consisting of an open research question (with written preparation):
   Hypothetical research problem for which the student needs to indicate what she/he would investigate (and why) and which cell biological and molecular techniques she/he would use (and why/how) (1/2 of the points).

Calculation of the examination mark

(Approved)