

Course description template

Informing students on course requirements

(In accordance with information and study materials available on
CooSpace)

From September 2019

Program: University of Szeged, Faculty of medicine
Course: Cell Biology and Molecular Genetics
Academic year/Semester: 1/2
Educator and contact details (e-mail): Prof. Boldogkői Zsolt, boldogkoi@gmail.com
Type of course: /seminar/practice/laboratory
Weekly hours of the course: 2 (4 hours every second week)
Credit vale of the course: 0
Type of examination: practice exam
Preliminary requirements (preliminary academic performance or completed course required to fulfill the purposes and requirements of the course): none
Purpose of the course: The goal of the practices is to learn the basic techniques of cell biology and molecular genetics with special emphasis on improving the manual skills of the students. It is taught by experts, that medical doctors will be primarily data analysts in the future. In the next few years, we shall focus on improving such skills as well. During the practices we explain the most up to date techniques of molecular genetics and genomics.
Outcome requirements of the course (specific academic results to be established by the course): The students will learn and understand the following in the first semester: fire safety and labour safety rules related to the laboratory work, proper usage of laboratory equipments. The students learn to use the micropipettes, they improve they pipetting skills. The students should become acquainted with basic microscopical techniques, they learn the priciples of light-and fluorescent microscopy, they should understand the background of electron microscopy techniques. The students learn and apply the techniques of extracting nucleic acids, the laws of inheritance, the connection between genotype and phenotype. They should solve genetic problems. The students should understand the genetic regulation of bacteria. They should understand and apply different separation techniques.
Topics: Introduction Microscopy techniques Consultation I. Lactose operon Genetic Problems Consultation II. Separation techniques

Supporting methods to achieve learning outcomes:

4h in every 2 weeks.

First hour is a common seminar for two groups, thereafter each group has a practice separately in the two practical laboratory room.

Consultations are hold before the MTOs.

Bonus points can be earned during the semester.

Evaluation of the acquisition of expected learning outcomes:

Attendance in practices, seminars and consultations is compulsory

Absences from seminars and practices:

1 time: there is no extra duty

2 times: oral report

3 times: extra question about practices (If you do not know the answer, you will fail the exam; oral report is remaining on the retake exam)

4 or more times: no signature

Short written test at the end of every practices: 5 single choice questions: 2-2 Qs from the actual seminar or practice and 1 Q from the previous lecture. Test writing starts 10 minutes before the official practice end, writing time is 10 minutes.

Bonus points based on the tests written on the practices

- 6 bonus points, if you have 28-30 right answers
- 5 bonus points, if you have 25-27 right answers
- 3 bonus points, if you have 22-24 right answers
- 2 bonus points, if you have 19-21 right answers
- 1 bonus point, if you have 16-18 right answers

You need to wear a white coat in the practices.

If you are active in seminars and practices, you can get bonus points from the tutor (maximum 2 bonus points at the end of the semester).

Notes:

Non-attendance of practices and seminars: for the penalties see below

- retake of the practices is not possible due to the schedule plan
- oral report because of the practical absences will be not cancelled in the retake exam(s)

Mandatory reading list:

(1) textbook: LIFE (9th Edition, ISBN: 9781429219624

(2) text files (pdf from word doc) and **(3)** pictures (pdf from power point slide) – they are downloadable from our website or from the Coospace.

Recommended reading list: none

Indicating course requirements on Coospace scene (summary)

Description (public): Purpose of the course:

The goal of the Cell Biology and Molecular Genetics course to elucidate the structure and function of the DNA and our cells. The scientific information of this field expands dramatically, the thematic of this subject includes several areas of biology, but we only have two lectures weekly which determines the structure and the way of explanation of the material: besides the fundamentals, many topics are explained through examples, logics of approaches and current trends, and avoids getting into unnecessary details. While the downloadable study material is well organized and easy to learn, the lectures focus on understanding and theoretical background. Molecular biology, genomics and cell biology are going to be fundamental areas of medicine in the near future. Because of the new technologies, the methods and approaches of these fields are constantly changing, therefore it is important to teach modern knowledge. Our curriculum is therefore updated year by year. During the main course, we explain the general basic principles of science, and-in a critical way-pseudo scientific approaches. During the course we focus on the current and future medical applications of cell biology and molecular genetics.

Cell Biology and Molecular Genetics – PRACTICE

The goal of the practices is to learn the basic techniques of cell biology and molecular genetics with special emphasis on improving the manual skills of the students. It is taught by experts, that medical doctors will be primarily data analysts in the future. In the next few years, we shall focus on improving such skills as well. During the practices we explain the most up to date techniques of molecular genetics and genomics..

Requirements: Outcome requirements of the course (specific academic results to be established by the course):

The students will learn and understand the following in the first semester: fire safety and labour safety rules related to the laboratory work, proper usage of laboratory equipments. The students learn to use the micropipettes, they improve they pipetting skills. The students should become acquainted with basic microscopical techniques, they learn the principles of light-and fluorescent microscopy, they should understand the background of electron microscopy techniques. The students learn and apply the techniques of extracting nucleic acids, the laws of inheritance, the connection between genotype and phenotype. They should solve genetic problems. The students should understand the genetic regulation of bacteria. They should understand and apply different separation techniques.

Evaluation of the acquisition of expected learning outcomes:

attendance in practices, seminars and consultations is compulsory

Absences from seminars and practices:

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Topics:

Introduction

Microscopy techniques

Consultation I.

Lactose operon

Genetic Problems

Consultation II.

Separation techniques

Supporting methods to achieve learning outcomes:

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Recommended reading list: none