



## SUBJECT DATASHEET

<b>Semester:</b>	2009/10/1
<b>Subject:</b>	Fundamentals of genetics
<b>Code:</b>	VEMKLIB345G
<b>Responsible department:</b>	Department of Limnology
<b>Responsible department code:</b>	MKLI
<b>Responsible lecturer:</b>	dr. Szabolcs Nagy

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### Educational objectives:

Course in basic genetics principles and practices described briefly and concisely for the students. The course aims to understand the principles of heredity, and understanding of fundamental biological processes, mechanisms and arrangements for transfer properties of the cell, individual and population levels of sexual and asexual cell division, the hereditary material changes in gene expression, inheritance disorders, and population variability.

### Detailed content of the subject:

1 The subject of genetics 2 Mendelian genetics 3 Chromosomal basis of inheritance 4 Linkage analysis 5 Mutations 6 The basis of genetic analyses 7 Genetics of bacteria and phages 8 Genetics of *S. cerevisiae* 9 Genetics of *C. elegans* 10 Genetics of *D. melanogaster* 11 Genetics of *A. thaliana* 12 Genetics of mice 13 Human genetics 14 Population genetics 15 Quantitative genetics

### Requirements:

The half-hour oral examination is about 20-25 minutes after preparing the student with the exam questions / themes to express. Insufficient (1) the answer is, if the candidate has either a short outline of the topic or the topic is not able to provide definitions of basic concepts. Satisfactory (2) the answer is, if the candidate can interpret basic concepts of the issue. Fair (3) the answer is, if the candidate is aware of the basic concepts of issues and is able to help teachers present the topic in a logical context. Good (4) the answer is, if the candidate's response to a logical structure alone explains the item (exam) all relevant facts and relationships, but the compulsory literature associated with item no or incomplete knowledge. Excellent (5) the answer, if the candidate has all the items, as well as the required knowledge of literature, logically structured, independent, detail is excellent, fully exploring the relationships within bears witness to answer.

### Required and suggested references:

AJ Griffiths, SR Wessler, RC Lewontin, SB Carroll: Introduction to Genetic Analysis. 9th edition. WH Freeman and Company, New York. 2008. Virtual text: Genetics. [www.ergito.com](http://www.ergito.com)