

COURSE UNIT INFORMATION SHEET (SYLLABUS)
2019/2020

Name Biology and Genetics
Teaching staff (Also indicate the Professor in charge) Prof. Carlos Fernandes
ECTS 6
Functioning Due to the pandemic Covid 19, functioning needed to be changed as follows: Theoretical lectures consisted of online classes using the Zoom tool or of PowerPoint files with narration. Practical classes consisted on the visualization of videos that complemented the contents taught in the theoretical classes. Group work (optional) for the study and preparation of a scientific article (in the scope of the discipline and the course) to prepare a report, and counted as an element of evaluation.
Learning goals Provide fundamentals of cell biology, heredity, genetics, and physiology.
Skills to be developed Learning, development and consolidation of knowledge in Biology and Genetics. Ability to apply concepts of cell biology, genetics and physiology.
Prerequisites (precedences) * Not applicable
Contents Animal cell; cellular components; cell division; control of cell activity by the nucleus; mitosis; meiosis; gametogenesis; chromosomes; genotype; genomes; hereditary transmission patterns; genes; genetic code; transcription and translation; Mendelian genetics; molecular markers; Mitochondrial DNA; microsatellites;

simple nucleotide polymorphisms; monogenic and polygenic heredity; dominance and recessivity; heritability; genetic diseases.

Bibliography

Alberts, B., Johnson, A., Lewis, J., Morgan, D., Raff, M., Roberts, K. & Walter, P. (2015). Molecular Biology of the Cell. Sixth Edition. Garland Science. New York and Abingdon, UK.

Griffiths, A., Doebley, J., Peichel, C. & Wassarman, D. (2020). Introduction to Genetic Analysis. 12th Edition. Freeman and Company. New York.

Strachan, T. & Read, A. (2018). Human Molecular Genetics. Fifth Edition. Garland Science. New York and Abingdon, UK.

De Robertis, E. & Hib, J. (2014). Biologia Celular e Molecular. 16ª Edição. Guanabara Koogan. Rio de Janeiro.

Azevedo, C. & Sunkel, C. (2012). Biologia Celular e Molecular. 5ª Edição. Lidel. Lisboa.

Other specific bibliography will be indicated in the classes.

Teaching methods

Theoretical and practical classes

Evaluation Regimes (General and/or Alternative)

General Evaluation Regime

Evaluation Elements

(Dates due, weights, minimum required grades)

Final exam on the contents of the theoretical and practical classes with a maximum score of 20 out of 20.

Optionally, final exam on the contents of the theoretical and practical classes, with a maximum score of 16 out of 20 (80%), and work and report on a scientific article within the scope of the discipline and the course, with a maximum score of 4 (20%). The final score will be the sum of the partial scores.

The approval in the discipline, by obtaining a final score ≥ 9.5 , is conditional, in the case of the option for exam and report evaluations, on obtaining a ≥ 7.5 score in the final exam and a ≥ 2 score in the work and report of the scientific article.

Rules for grade improvement

For students approved in this academic year, the same as described in the point above.

For students approved in previous years, exam for 20.

Rules for students having previously failed the course unit *

Exam for 20.

Requirements on attendance and punctuality

Cancelled due to the conditions raised by the Covid 19 pandemic.

Rules for special students

(workers, elite athletes, student body leaders, military, fathers/mothers, with special needs) *

Not applicable

Language of instruction

Portuguese

Disciplinary violations and penalties

According to the Evaluation of Learning Regulation of the Faculty of Psychology of the University of Lisbon, the following behaviors are considered as disciplinary offenses subject to disciplinary action:

- a) To use or attempt to use materials, information, notes, study resources or other objects and equipment not authorized in academic exercises;
- b) To help or try to help a colleague in committing a disciplinary offense;
- c) To submit the same written work for evaluation in different course units without permission from the instructors, even if with minor changes;
- d) To present someone else's work as one's own;
- e) To forge, or change without permission from the author, any information or citation in an academic work;
- f) To interfere, change or attempt to change grades;
- g) To try to prevent or interfere with the proper functioning of classes, research or other academic activities;
- h) To make false accusations regarding instructors, governance bodies, other students or non-teaching staff of the FPUL;
- i) To falsify signatures in attendance sheets, documents relating to evaluation elements or in any official document relating to an academic process or status.

Disciplinary offenses committed in any assessment element can lead to its annulment, and must be reported to the Pedagogical Council or, considering their gravity and repetition, may lead to other penalties, to be determined by the Rector of the University of Lisbon.

* If applicable