

Human and Animal Biotechnology (I002613)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size *(nominal values; actual values may depend on programme)*
Credits 5.0 **Study time** 150 h **Contact hrs** 50.0 h

Course offerings in academic year 2022-2023

A (semester 2) English Gent

Lecturers in academic year 2022-2023

Vanrompay, Daisy LA22 lecturer-in-charge

Offered in the following programmes in 2022-2023

	crdts	offering
Master of Science in Bioscience Engineering: Cell and Gene Biotechnology	5	A
Exchange Programme in Bioscience Engineering: Cell and Gene Biotechnology (master's level)	5	A

Teaching languages

English

Keywords

Cell and tissue engineering, 3D culturing, gene transfection and expression in eukaryotic cells, biotechnology and genetic engineering in new drug and therapy development, gene therapy, vaccinology

Position of the course

Human and Animal Biotechnology

Contents

1) general aspects of cell and tissue engineering, 2) 3D culturing, organoids, 3) embryology and stem cells, 4) gene transfer and expression in eukaryotic cells, 5) production of classic and recombinant vaccines, including DNA and mRNA vaccines, 6) nanobody engineering, 7) gene therapy, 8) recombinant drugs and their registration

Initial competences

General knowledge on cell biology, microbiology and gene technology

Final competences

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

Demonstration, lecture, practicum

Extra information on the teaching methods

Theory: lecture using power point presentations which will be made available via the electronic learning platform and also movies on the topic. Practical: biotechnological engineering techniques focused on the contents of the course and to be performed by the student in the laboratory. Master's dissertation: possibility to prepare a Master's dissertation.

Learning materials and price

Course book. Estimated price 20 euro

References

- 1) Animal Cell culture: essential methods; Wiley-Blackwell, (2011). J.M. Davis, J. Wiley and Sons Inc., Hoboken, New Jersey, US.
- 2) Methods in Molecular Biology: 3D Cell Culture, Zuzana Koledova (Editor), Humana Press (2017);
- 3) The immortal life of Henrietta Lacks by Rebecca Skloot, (2010), Crown Publishers New York,
- 4) Textbook of drug design and discovery (2016), 5th Edition, K. Stromgaard, P Krosgsgaard-Larsen, Ulf Madsen (editors), CRC Press,
- 5) Methods in Molecular Biology, Vaccine design, S. Thomas (editor), Springer, New York

Course content-related study coaching

Teacher and assistant available for student counseling

Evaluation methods

end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period

Written examination, report

Examination methods in case of periodic evaluation during the second examination period

Written examination, report

Examination methods in case of permanent evaluation

Participation, report

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

Lectures: written examination

Practical: written report

Calculation of the examination mark

Lectures: 90% and practical 10%

Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.