UNIVERSITEIT GENT

Studiefiche

Academiejaar 2023-2024

Human and Animal Biotechnology (I002613)

Cursusomvang *(nominale waarden; effectieve waarden kunnen verschillen per opleiding)*

Studiepunten 5.0 **Studietijd 150 u**

Aanbodsessies in academiejaar 2023-2024

A (semester 2) Engels Gent

Lesgevers in academiejaar 2023-2024

Vanrompay, Daisy LA22 Verantwoordelijk lesgever

Aangeboden in onderstaande opleidingen in 2023-2024	stptn	aanbodsessie
Master of Science in Bioscience Engineering: Cell and Gene Biotechnology	5	A
Uitwisselingsprogramma bio-ingenieurswetenschappen: cel- en genbiotechnologie (niveau master-na-bachelor)	5	A

Onderwijstalen

Engels

Trefwoorden

1 Cell and tissue engineering, 3D culturing, gene expression, biotechnological drugs, gene therapy, vaccinology, nanobodies

Situering

This course aims to give students an overview of the main aspects of human and animal biotechnology and its related techniques and applications

Inhoud

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

Begincompetenties

Human and Animal Biotechnology builds on certain learning outcomes of course units Microbiology, Cell Biology, Gene Technology and Molecular Diagnostics; or the learning outcomes have been achieved differently.

Eindcompetenties

1 The student possesses broad knowledge, at an advanced level in a number of basic disciplines in relation to biomedical applications
2 The student gains the necessary skills for the manipulation of human and animal cells and their tissues
3 The student gains the necessary skills for gene expression in eukaryotic cells
4 The student can design and implement strategies for the development of recombinant drugs and their applications
5 The student is able to assess new scientific developments in genetic engineering and their applications in a scientific and socio-economic context
6 The student is aware of ethical and confidentiality aspects of some human and animal biotechnology applications

Creditcontractvoorwaarde

Toelating tot dit opleidingsonderdeel via creditcontract is mogelijk mits gunstige beoordeling van de competenties

Examencontractvoorwaarde

Dit opleidingsonderdeel kan niet via examencontract gevolgd worden

Didactische werkvormen

Hoorcollege, Practicum, Zelfstandig werk

Toelichtingen bij de didactische werkvormen

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.

Leermateriaal

Course book. Estimated price 20 euro

Referenties

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

Vakinhoudelijke studiebegeleiding

Teacher and assistant available for student counseling

Evaluatiemomenten

periodegebonden en niet-periodegebonden evaluatie

Evaluatievormen bij periodegebonden evaluatie in de eerste examenperiode

Schriftelijke evaluatie, Werkstuk

Evaluatievormen bij periodegebonden evaluatie in de tweede examenperiode

Schriftelijke evaluatie, Werkstuk

Evaluatievormen bij niet-periodegebonden evaluatie

Participatie, Werkstuk

Tweede examenkans in geval van niet-periodegebonden evaluatie

Examen in de tweede examenperiode is niet mogelijk

Toelichtingen bij de evaluatievormen

Lectures: written examination
Practical: written assignment and participation

Eindscoreberekening

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.