

Biotechnologies animales et végétales

Lecturers

Nathalie VERBRUGGEN (Coordinator) and Benoît VANHOLLEBEKE

Course mnemonic

BIOL-F412

ECTS credits

5 credits

Language(s) of instruction

French

Course period

Second term

Course content

History of plant genetic engineering, generation techniques of genetically modified organisms, cloning and stem cells, transgenesis and applications in industry, medicine and the environment. Some applicable aspects of European legislation on the presented themes.

Objectives (and/or specific learning outcomes)

Provide students with the essential tools to understand different facets of genetic engineering and allow them to assess biotechnology issues.

At the end of this teaching unit, students will be able :

- 1- to use molecular tools to produce a biomolecule (DNA, RNA or protein) of interest from a biological system.
- 2- to understand the examples of genetic engineering and to imagine other applications
- 3- to compare different methods used to generate genetically modified organisms.
- 4- to explain the different steps of regulation of a gene as well as the necessary techniques to study them.
5. to assess the challenges of biotechnology in society.

Pre-requisites and co-requisites

Course having this one as co-requisit

BING-F504 | Nutrition animale et humaine | 5 crédits

Teaching method and learning activities

PowerPoint presentations (3 ECTS) + practicals in Plant biotechnology (2 ECTS - MA1 BIOR)

References, bibliography and recommended reading

S. Gilbert. 2006. Developmental Biology. Sunderland, MA: Sinauer Associates (ISBN 0_87893-250). Slater, A., Scott N.W. et Fowler M. 2003. Plant Biotechnology. The Genetic Manipulation of Plants. Ed. Oxford University (ISBN 0-19-925468-0). Casse, F. et J.-C. Breitler, 2001. OGM. Description. Méthodes d'obtention. Domaines d'applications. France Agricole. (ISBN 2-85557-061-1). Recent research articles.

Other information

Contact(s)

VERBRUGGEN Nathalie, Laboratoire de Physiologie et de Génétique Moléculaire des Plantes, ULB-Campus Plaine - CP 242, Bd. du Triomphe - 1050 Bruxelles, Tél. : 02/6502128 - Fax : 02/6505421, email : nverbru@ulb.ac.be [<http://www.ulb.ac.be/demo/canevas>]

SOUOPGUI Jacob, Génétique du Développement, Campus de Charleroi - CP300, 12 rue des Professeurs Jeener et Brachet, 6041 Charleroi (Gosselies), Tél. : 02/6509735 - Fax : 02/6509733, email : Jacob.Souopgui@ulb.ac.be [<http://www.ulb.ac.be/demo/canevas>]

EL JAZIRI Mondher, Laboratoire de Biotechnologie végétale, Campus de Charleroi - CP305, 12 rue des Professeurs Jeener et Brachet, 6041 Charleroi (Gosselies), Tél. : 02/6509572, 02/6509181 - Fax : 02/6509578, email : jaziri@ulb.ac.be [<http://www.ulb.ac.be/demo/canevas>]

Evaluation method(s)

written examination

Evaluation method(s) (additional information)

Written evaluation

Determination of the mark (including the weighting of partial marks)

Theory = $\sqrt[3]{(\text{score part 1} \times \text{score part 2} \times \text{score part 3})}$ or $(\frac{3}{4} \times \text{theory}) + (\frac{1}{4} \times \text{practicals})$

If personal work, theoretical note = $\sqrt[4]{(\text{score part 1} \times \text{score part 2} \times \text{score part 3} \times \text{score personal work})}$

Main language(s) of evaluation

French

Programmes

Programmes proposing this course at the faculty of Sciences

MA-BIOR | Master in Biology of Organisms and Ecology | finalité Research/unit 2, MA-IRBA | Master in Agricultural Bioengineering | finalité Professional/unit 1, MA-IRBC | Master in Chemistry and Bio-industries Bioengineering | finalité

Professional/unit 1 and MA-IRBE | Master in Environmental Bioengineering | finalité Professional/unit 1

Programmes proposing this course at the Brussels School of Engineering

MA-IRBA | Master in Agricultural Bioengineering | finalité Professional/unit 1, MA-IRBC | Master in Chemistry and Bio-industries Bioengineering | finalité Professional/unit 1 and MA-IRBE | Master in Environmental Bioengineering | finalité Professional/unit 1

