

# MEDICAL BIOTECHNOLOGY AND NANOBIO TECHNOLOGY (LM49)

(Lecce - Università degli Studi)

## Teaching CELLULAR BIOTECHNOLOGIES

GenCod A004552

Owner professor Cecilia BUCCI

Teaching in italian CELLULAR BIOTECHNOLOGIES

Teaching CELLULAR BIOTECHNOLOGIES Language INGLESE

Course year 1

SSD code BIO/13

Curriculum PERCORSO GENERICO/COMUNE

Reference course MEDICAL BIOTECHNOLOGY AND

Course type Laurea Magistrale

Location Lecce

Credits 9.0

Semester Primo-Semestre

Teaching hours Ore-Attività-frontale: 74.0

Exam type Orale

For enrolled in 2018/2019

Assessment Voto-Finale

Taught in 2018/2019

Course timetable

<https://easyroom.unisalento.it/Orario>

### BRIEF COURSE DESCRIPTION

#### Synthetic program:

Genetic manipulation of eukaryotic cells. Methods for expressing or silencing wt and mutant genes in cultured animal cells. Cellular and molecular biotechnologies to identify protein-protein interactions: the two-hybrid system and its variants, the phage display. Biology of stem cells: embryonic, foetal and adult. Applications of stem cells. Induced pluripotent stem cells. Regenerative medicine. Gene therapy: vectors, methodologies and scopes. Cloning and therapeutical cloning.

#### Program of practical laboratory classes:

Transfection of mammalian cells. Use of GFP to monitor transfection efficiency. Transfection of GFP-tagged proteins to establish their intracellular localization in mammalian cells. Immunofluorescence analysis. Differentiation of cultured mammalian cells.

### REQUIREMENTS

No formal prerequisites are required. However, a solid knowledge of cell biology, molecular biology and genetics will be helpful to follow the course with profit.

### TEACHING METHODOLOGY

Formal lectures (8 cfu= 64 hours) making use of slides and hypertext links to specific Web sites and practical laboratory classes (1 cfu = 10 hours). Outside these activities, the students are expected to read assigned papers from scientific literature.

### ASSESSMENT TYPE

The evaluation of the oral examination will be based on the level of the theoretical knowledge and practical abilities acquired through the description of topics and methodologies (70%), on the critical and problems solving abilities and (20%) and on communication skills (10%).