**BREVE DESCRIZIONE DEL CORSO**

**Programs of Lectures and Labs**

**Lectures**

**Part 1. Microbial virulence and vaccines**


**Part 2. Drugs from microorganisms**


**Labs**

*Large-scale microbial cultivation for industrial purposes.* The growth curve. Discontinuous or  

**PREREQUISITI**

No formal prerequisite is required with respect to other courses. However basic knowledge of general microbiology, basic immunology and microbial genetics is strongly recommended. This knowledge is normally acquired in the bachelor’s degrees that give access to the master’s degree in Medical Biotechnology and Nanobiotechnology.
Course outline and aims
The course aims to provide knowledge and skills to work professionally with roles of responsibility in the areas of medical biotechnology and nanobiotechnology which make use of micro-organisms or viruses (natural or genetically modified, whole or parts thereof) or which develop diagnostic devices and therapeutic to combat infectious and non-infectious diseases.

Learning outcomes
Knowledge to be attained:
• molecular and cellular mechanisms underlying microbial and viral pathogenicity
• methodological foundations for design and development of vaccines
• methodological foundations for discovery and production of bioactive compounds from microorganisms

Abilities to be attained:
• New drug discovery from microorganisms by bioassays and genome mining
• Mutate-and-screen methods for microbial strain improvement

OBIETTIVI FORMATIVI
Learning methods consist of formal Lectures and Labs making use of slides and hypertext links to specific Web sites. Outside these activities, the students are expected to read assigned papers from the scientific literature.

METODI DIDATTICI
Oral examination. It is aimed at ascertaining, in proportion:
- The level of theoretical knowledge through the presentation of the program topics (50%)
- The level of practical abilities through description of methods and methodologies (25%)
- The ability to apply theoretical knowledge and practical skills to solve simple problems (25%)

MODALITA’ D’ESAME

TESTI DI RIFERIMENTO