

## DEGREE PROGRAMME

The MSc programme aims to educate graduated students for high profile positions in research centres, enterprises and industries operating in industrial biotechnology field.

The programme provides the opportunity of external activities (e.g. traineeships in companies, public or private research institutes, European universities) to strengthen skills in specific sectors of industrial biotechnology.

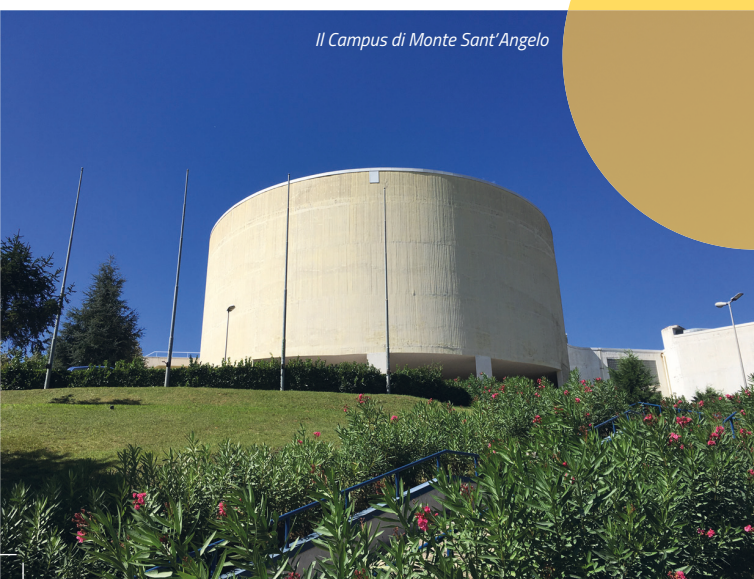
Potential fields of activity of MSc graduated students are biotechnological enterprises, chemical, pharmaceutical/cosmetic and nutraceutical industries, as well as the environmental technology sector.

Classe delle Lauree Magistrali: LM-8

### Coordinatore del Corso di Studi

Prof. Antonio Marzocchella  
antonio.marzocchella@unina.it

*Il Campus di Monte Sant'Angelo*



#### Education period:

I Semester – From the end of September up to the end of December

II Semester – From the end of February up to the beginning of June

Exams – January to March. June, July, September and October

Details of each course/module are reported at the webpage of the professor.

For more information:

University of Naples: [www.unina.it](http://www.unina.it)

Polytechnic and Basic Sciences School: [www.spsb.unina.it](http://www.spsb.unina.it)

Degree Courses in Molecular and Industrial Biotechnology:

[www.biotechnologieindustriali.unina.it/en/](http://www.biotechnologieindustriali.unina.it/en/)

email: [infobiotechnologieindustriali@unina.it](mailto:infobiotechnologieindustriali@unina.it)



Biotechnologie Industriali Federico II



May 2020



UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II  
SCUOLA POLITECNICA E DELLE SCIENZE DI BASE

COLLEGIO  
DEGLI STUDI DI  
SCIENZE

## MASTER'S DEGREE MOLECULAR AND INDUSTRIAL BIOTECHNOLOGY



Lectures languages



## CURRICULUM Produzioni Biotecnologiche (ProBio)

(in corsivo gli insegnamenti specifici del curriculum)

### I Anno - I semestre

Biotecnologie microbiche industriali  
*Biologia dei sistemi e bioinformatica*  
Biotecnologie Industriali e per la  
Salvaguardia dell'Ambiente

### I Anno - II semestre

*Fenomeni di trasporto in sistemi biologici*  
*Biotecnologie biochimiche*  
*Bioreattori*

### II Anno - I semestre

Principi di igiene nelle biotecnologie  
Biochip e biosensori  
*Processi biotecnologici*  
Attività formative a scelta autonoma dello  
studente

### II Anno - II semestre

*Bioeconomia e proprietà intellettuale*  
Attività formative a scelta autonoma dello  
studente  
Tirocinio formativo e orientamento al  
mondo del lavoro  
Prova finale

The programme includes two curricula:

"**ProBio** - Biotechnology productions"

"**Birre** - Biotechnology for Renewable Resources"

The curricula share 30 CFU (4 courses in Italian language)  
focused on some general issues of the industrial  
biotechnology.

The lessons of the **ProBio curriculum** are provided in **Italian**:  
6 courses, for a total of 57 CFU. The topics of **ProBio**  
curriculum are focused on molecular and industrial issues of  
biotechnology to educate students to a general integrated  
approach to consolidated and emerging technologies  
(details at [www.biotecnologieindustriali.unina.it/it/](http://www.biotecnologieindustriali.unina.it/it/)).

The lessons of the **Birre curriculum** are provided in **English**:  
6 courses, for a total of 57 CFU spread over a period of one  
year. The topics of **Birre** curriculum are focused on molecular  
and industrial issues of biotechnology to prepare students to  
the construction of new products and services based on the  
exploitation of renewable resources. Students are provided  
with the interdisciplinary concepts of industrial  
biotechnology to convert renewable resources in  
consumables (e.g. energy vectors, bioplastics, pigments,  
nutraceuticals). Both classes of biotechnology products, i.e.  
high value products (e.g. antioxidants) and high massive  
products (e.g. energy vectors, bioplastics) are addressed  
(details at [www.biotecnologieindustriali.unina.it/ien/](http://www.biotecnologieindustriali.unina.it/ien/)).



## CURRICULUM Biotechnology for Renewable Resources (BiRe)

(in italics the courses specific of the curriculum)

### I Year - I semester (\*)

Industrial microbiology & fermentation  
chemistry (IT)  
*Microalgal exploitation*  
Industrial biotechnologies and environment  
protection (IT)

### I Year - II semester

*Transport phenomena for biotechnological  
applications*  
*Biopolymers and bioplastics*  
*Biorefinery processes*

### II Year- I semester (\*)

Hygiene background for biotechnologies (IT)  
Biosensors and Biochips (IT)  
*Design of conversion processes Environmental  
economy*

### II Year - II semester

Free selection proposed by the student  
Practical training  
Final project and exam

(IT) – course language: Italian

(\*) - time schedule of the curriculum courses offered  
at the I semester of the years I & II are synchronized. Erasmus  
students may follow both groups of courses during the same  
academic year.