

About BIOENGINEERING

Bioengineering holds the promise to radically change Medicine and Health, thanks to the creation of highly efficient, accurate and reliable devices. To this aim, it is necessary to refer to professionals possessing solid engineering skills that can master the design, development and the manufacture of devices able to sense and interact with biological entities. Bioengineers will thus guide the translation from research into the industrial field.

The Master's Degree in Industrial Bioengineering aims at training professionals with a multidisciplinary knowledge, in which a solid background in Industrial Engineering is integrated with Biological and Medical skills. In this perspective, the graduated in Industrial Bioengineering will possess the tools to make a significant and active contribution in the fields of Regenerative Medicine, Nanomedicine and Advanced Diagnostics through the design and manufacturing of medical devices suitable for interacting directly with living systems, from biomolecules and cells, up to tissues and organs.

Master's Degree Coordinator

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Contacts

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**Department of Chemical, Materials and Industrial
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Master's Degree in Industrial Bioengineering
bioengineering.unina.it

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

COLLEGIO
DEGLI STUDI DI
INGEGNERIA

MASTER'S DEGREE INDUSTRIAL BIOENGINEERING



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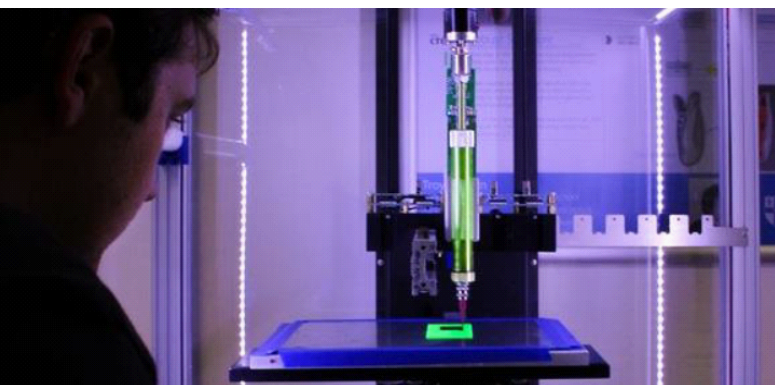
Dipartimento
di Ingegneria Chimica,
dei Materiali e della
Produzione Industriale
Università degli Studi
di Napoli Federico II

TRAINING GOALS

The Master's Degree in Industrial Bioengineering aims at training professionals able to integrate the fundamental knowledge of molecular, cellular and systems biology with the classical disciplines of industrial engineering to design, develop and manufacture devices able to interact with biological entities. These devices are intended to produce specific therapeutic, diagnostic or control functions.

Graduate Students will exploit the multidisciplinary skills to identify and implement effective solutions in Regenerative Medicine, Tissue Engineering, Theranostics and Drug Screening.

Classes and lab activities are an integral part of the training, which is focused on the translation of the most advanced results of the biological-medical field into the medical industry. Equally, activities and specific courses designed to support the technological transfer, complete the training.



PROGRAMME REQUIREMENTS

Students having a BSc degree in engineering disciplines may access to the programme. The CV and academic career of the candidates need to be assessed by the evaluating board of the Master's Degree Course. Students interested in participating to the programme are encouraged to contact bioengineering@unina.it for further information.

PROGRAMME DETAILS

FIRST YEAR	ECTS
Biochemistry, Cell and Molecular Biology	12
Biomechanics	6
System Analysis for Bioengineering	6
Thermodynamics and Transport Phenomena in Living Systems	12
Systems and Synthetic Biology and Microfluidics for Lab on Chip	12
SECOND YEAR	
Diagnostic Devices and Drug Delivery	9
Biomaterials and Tissue Engineering	12
Mechanics of Tissues and Growth	6
Biomedical Imaging and Computer Interface	12
Robotics for Bioengineering	6
Elective Subjects	12
Internship	3
Thesis	12



JOB OPPORTUNITIES

The MSc in Industrial Bioengineering allows to be employed in companies operating in the field of medical technologies and the biomedical sector in general.

- pharmaceutical industries for therapeutic and diagnostic tools
- companies involved in the development of robotic systems for surgery and micromanipulation of biological-synthetic systems
- public or private research institutes operating in the fields of prosthetics, regenerative medicine, nanomedicine, therapy and diagnostics
- consulting company for assistance in the research, certification and marketing of biomedical products and devices
- companies operating in the cosmetics and nutraceutical sectors



ACCESS TO FURTHER STUDIES

The qualification gives access to PhD Courses and Second-level Masters

WHERE WE ARE

Classes are taught at the Polytechnic and Base Sciences School in Fuorigrotta and Agnano, Naples.

