



MASTER OF SCIENCE AND TECHNOLOGY IN COMPLEX SYSTEMS ENGINEERING BIOMEDICAL ENGINEERING



A “complex system” can be defined as a system including **multiple elements** with different and variable individual behaviours which interact to produce the **overall system behaviour**.

Students following the Msc&t programme will find and **exceptional academic and clinical environment** that aims to broaden their horizon in order to obtain a **rich interdisciplinary educational experience in biomedical engineering** and to best prepare their professional career.

This Master gives you **140 ECTS**.

**Systems modeling
& quantitative imaging**

Year 1

1ST SEMESTER – PROPAEDEUTICS

Transport phenomena – Computer sciences – Introduction to clinical medicine – Introduction to material science – Introduction to signal and image processing – Engineering & biological systems – Waves propagation – Management – Language

2ND SEMESTER – IN DEPTH SCIENTIFIC LEARNING

Soft matter and microfluidics – Tissues modeling – Anatomy and pathology – Imaging and wave therapy – Molecular therapeutic strategy – Pharmaceutical process – Bioinformatics – Inorganic biochemistry and bioinspired chemistry – Industrial eng. – Language

Year 2

1ST SEMESTER – KNOW HOW

Advanced photonics – Biomechanics – Integrated design of biomedical systems – Advanced image processing – Numerical modeling for BME – Advanced material sciences – Sensors & biomedical monitoring – Industrial eng. – Language – Elective courses shared with international academic & research partners

2ND SEMESTER – MASTER THESIS

[4-6 months]



Careers

Research & development engineer –
Consultant eng. – Audit eng. – Academic.

Academic requirements

Bachelor's degree in applied mathematics,
mechanics, physics, engineering sciences.

Centrale Marseille

RESEARCH ENVIRONMENT

Chemistry, physics, mechanics, chemical
engineering, computer sciences. Its 8 top
ranked laboratories, which are linked to CNRS,
are known for their high-quality scientific
research in France and abroad.

24 %
INTERNATIONAL STUDENTS

Master of science and technology in Complex Systems Engineering Biomedical engineering

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CONTACTS

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Secretariat Training

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